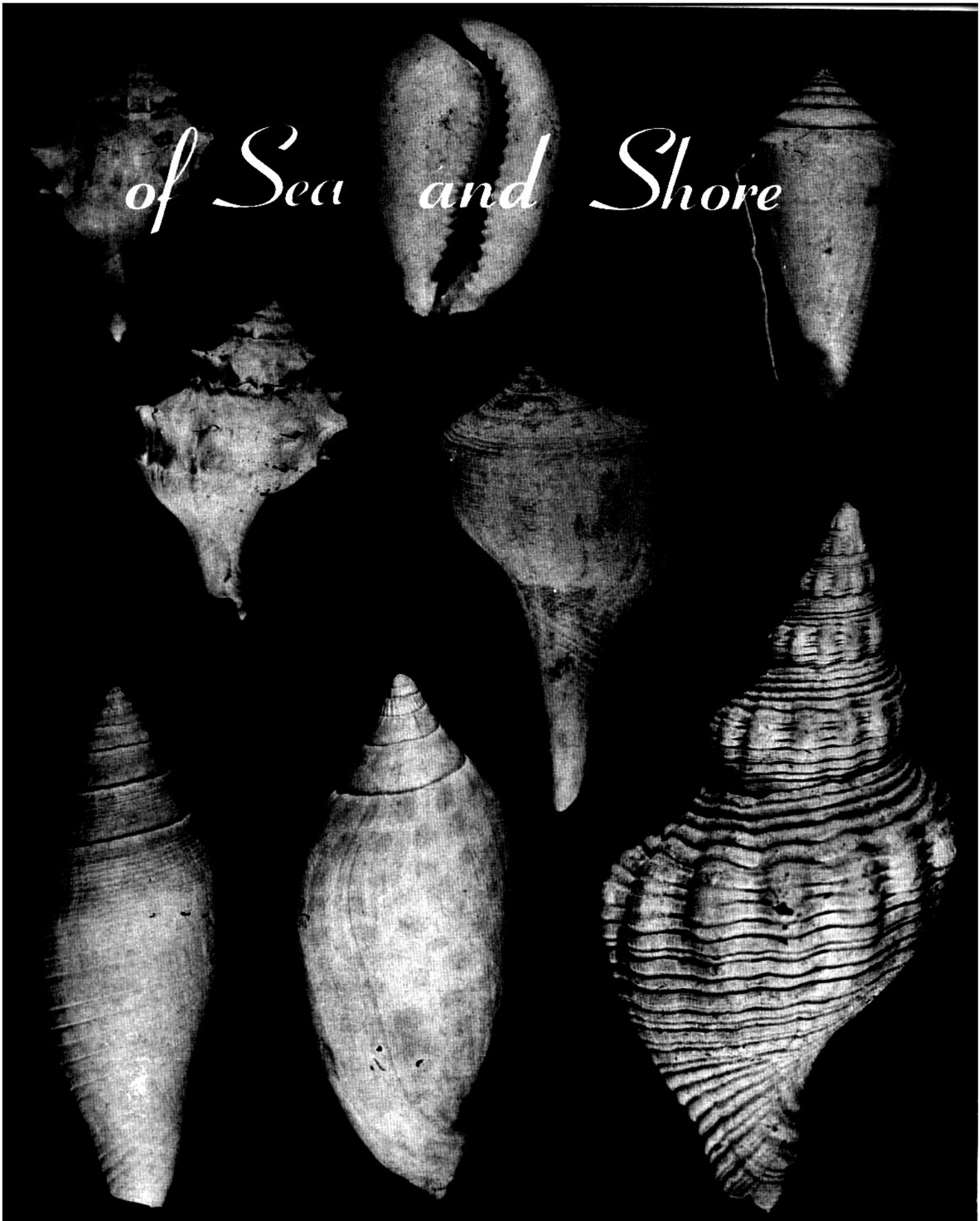
# of Sea and Shore



VOL. 6, NO. 4 $1.50 WINTER 1975-76

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# IN THIS ISSUE



Opposite page: selection of shells from OS&S Australia 1975 tour. See pg. 207.

OF SEA AND SHORE Magazine is published four times each year by Of Sea and Shore Publications; P.O. Box 33; Port Gamble, Washington U.S.A. 98364. Subscriptions, $5.00 per year, individual copies $1.50. 

Editor: THOMAS C. RICE

(Color separations courtesy ELLIS ROBINSON PUBLISHING CO., INC.)

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## our covers

Our front and back covers this issue feature some of the fascinating Florida fossils mentioned in the first series of articles. All of the specimens shown have been donated to the Of Sea and Shore Museum by Lt. Col. Corinne E. Edwards.

On the Front cover we have the following shells: (top, left to right) Busycon (Echino-

(Continued on page 202, column 3)

# Cousteau Is Wrong

By DR. WALTER A. STARCK

(NOTE: The following article appeared in the November 1975 issue of HAWAIIAN SHELL NEWS and your Editor feels it bears repeating here!)

KIRA KIRA, Solomon Islands - Captain Jacques Cousteau's suggestion to the California Legislature of prohibiting the selling of shells and tropical fish and totally prohibiting spearfishing and certain other types of collecting (see HSN Oct. 1975) is not justified by the biological facts.

No marine fish or invertebrate has been exterminated by man and none is really threatened with extinction at the present time. On the other hand, many species have been overfished and local populations decimated. The problem is one of properly managing the resources involved and this does not require the blanket prohibition necessary in the case of endangered species.

Most marine fishes and invertebrates have huge populations scattered over a large geographic area. Reproductive capicity, growth, and natural mortality are all high and the tiny percentage taken by fish and shell collectors is largely insignificant except in very limited areas that are heavily collected. Such areas can be easily protected where desireable. In the case of spearfishing, additional restrictions as to equipment, species, numbers, and sizes can be instituted generally.

Collecting shells and keeping marine aquarium fish are harmless, intellectually rewarding hobbies. Collectors and aquarists as a group are a strong force in support of conservation and, moreover, have a direct personal interest in it. Many professional marine biologists obtained their first interest in such a career through shell collecting or keeping an aquarium. Spearfishing is largely an activity of young people who do not have the money for scuba diving or underwater photography. Most of them later outgrow spearfishing and go on to more worthwhile pursuits, as did Captain Cousteau himself.

In the long run, when we ban activities that interest people in the natural environment, we do conservation a disservice. People with no interest in the natural environment usually have little concern with protecting it. Likewise, grossly exaggerated claims of widespread destruction and imminent environmental disaster do not help the cause of conservation. Although such claims attract a lot of attention, people soon lose interest when nothing drastic happens. It's the old business of crying wolf. In addition, such exaggeration detracts from very real environmental problems such as large human populations that use far more resources than their environment can continue to provide, and economic activities that squander vast quantities of resources or devestate the environment.

Continued on page 220, bottom column 3

# Sounding Off

By TULIP CONE

NOTE: The following article is presented with the thought that all points of view need airing whether your Editor agrees with them or not!

How I long to stop shell collecting. But I am hooked. Oh, so hooked! It's like drug addiction. Even though you stay dry for a while, the next thing you know you're back at it. This hobby causes divorce. It drains the family finances. I even wear rags in order to have the money for that special shell. In fact, I made the supreme sacrifice and have up my cleaning lady in the name of shelling.

You see, I live inland. Inlanders should never become shell collectors. As I see it, inlanders who get hooked on this terrible marajuana have only two choices: 1. They can buy shells from the many "reputable" dealers, or 2. They can take expensive trips in hopes of coming home with great goodies for their collection and to use for trade. Both methods stink!

Let's first consider the "reputable" dealers. When I began collecting far from the seashore, eleven years ago, I started in the library. Shell books should be banned from inland libraries. They whet the appetite for what is an obvious no-no for inlanders. Somewhere in those books were some addresses of shell dealers. Innocent me! I took the plunge, and soon I was excitedly pouring over some price lists, with the library books in hand. Now, those books make a point of talking about data, i.e., locality data. They give specific instructions on how data should be kept. I sent my first order. When it arrived, I excitedly opened it, and, behold, shells. On closer inspection, there were no labels. No data! My books said I need data, so I tried other dealers, and then other dealers, and other dealers ad nauseum.

There is a shell dealer who makes a point of advertising that he sends "accurate" data with all specimens. I have dealt with this dealer many times. I should know better. It's that I'm addicted, you see. The very first order was for Murex scorpio Linne. The data slip read, "In shallow water at lowtide. Philippines." Well, as I see it, there are an awful lot of Philippines, and I'd like to know which one. Since then, the same "reputable" dealer has sent me shells without even bothering to enclose a data slip. He even pawned off on me an acid-dipped (another no-no says my book) Voluta junonia Shaw, at a steep price. This same "reputable" dealer listed "absolute gem live-collected" specimens of Cypraea becki Gaskoin. Suckered again! For his "gem" of a price, I received a beach rolled specimen.

There is another dealer who specializes in taking a personal interest in the collector. That he does, and I have received many long personal letters from him. All well and good, but this

Continued on page 222, bottom column 2

# *From the Editor's Desk*

First may I wish all of you the very best of everything for the New Year!

Secondly I'd like to thank those who have sent their best wishes and kind comments on the magazine during the past year. It's nice to know that you're enjoying our efforts. Also a thank you to those who have sent in stamps with aquatic life subjects!

Now to more serious things. I was hesitant to publish the vitriolic attack in the column to the immediate left of this one. After much thought I decided to present the material with a few comments in this column. I do not question the accuracy of the narrative of problems the writer has encountered with shell dealers. However, I too have dealt with a great number of dealers in both the U.S. and overseas and have found them, by and large, to be an honest group of business people. Certainly one will have a problem from time to time, but I've found that in most cases the dealer will go out of his way to make you, the customer, happy with the material they send - and the great majority offer a refund, no questions asked, on any shells that do not please you.

I will not comment on a point by point basis to Tulip Cone. I do want to say that a group of dealers will shortly be announcing the formation of an international association of shell dealers for the purpose of eliminating, as much as possible at least amongst its members, any such practices. A code of ethics for shell dealers will be a feature of the association and any complaints against member dealers will receive action by the association's board. However, as a former dealer, I can state that the dealers do

Continued on page 214, column one

## OUR COVERS

Continued from page 201

fulgar) echinatum (Dall); Cypraea (Siphocypraea) carolinensis transitoria Olsson, 1964; the left-handed cone, Conus (Contraconus) adversarius tryoni Heilprin. Center of the front cover is Busycon contrarium Conrad. On the bottom of the front cover are (left to right) an unidentified, volute-looking, species, a Scaphella sp., and Pleuroploca sp.

On the back cover we have some of the smaller specimens: (top row left to right) Mitra sp.; Marginella sp.; Oliva sp.; Cymatosyrinx lunata (Lea) and Pusula crovoae Olsson. Second row (left to right) shows a Veneridae (unidentified); Microspira donovani Olsson; and three specimens of Murex sp. Third row (left to right) has a valve of Macrocallista; then a valve of Arca wagneriana (Dall) and a pair of Conus spurius which still have some color (!). The bottom row of the back cover (again, left to right) features Cypraea (Siphocypraea) problematica Heilprin; Fasciolaria hunteri and a pair of Polinices sp.

# FOSSIL PARADISE LOST ?

By CORINNE E. EDWARDS*

(Note: to the question "Finding any fossils Corinne?" on page 70 of the Summer 1975 issue of OF SEA AND SHORE, here is the answer from Corinne!)

## INTRODUCTION

We are not doing very much fossil collecting these days. Drainage canals have been dug and already done their damage to the water flowing from Lake Okeechobee down through the Florida Everglades. Grass has grown over the dikes and banks and levees. Rock/shell pits, where private agencies are digging deep to the extent of the land they own, are still active. These pits yielded beautiful fossil shells, perfect, but snowy white for the most part. These diggings into the Caloosahatchee Marl exposed fossil shells and echinoderms and coral that were millions of years old. Key shells in these areas gave clues to diggings into ancient waters 10 to 25 million years old.

The Belle Glade pit exposed shells only one million years old. Groups of us, on regular shell club field trips, visited these pits on Sundays, collecting unbelievedly perfect spiny Murex, Natica and Astraea with opercula and bivalves in pairs. Once they had enough material piled out of the pits to bring in huge machines to grind the material for road fill, we often got to the pits and found only miniatures for our day in the hot sun on those white heaps.

BUT - thoughtless people have spoiled all this! "They" went to the pits during working hours and endangered themselves. OR - they allowed children to play around the heavy equipment. The digger's insurance companies insisted on NO TRESPASSING signs. One of my favorite diggings for fossilized sand dollars has a sign that reads: NO TRESPASSING -- SURVIVORS WILL BE PROSECUTED. Now-a-days, IF we can get permission to go into a shell pit on a non-working day, we still must sign a waiver and we MUST wear a hard-hat (who owns a hard hat?). SO - us old-timers have fossil shell collections, but new shell club members ask in vain to be taken on one of those "good old days" fossiling trips. On a Sunday afternoon, a couple of us might drive out to some new digging to see if it is posted and to see if there is any shelling there - often there isn't and we would not like to plan a shell club field trip and have a great group drive clear up from Miami to Lake Okeechobee or the Caloosahatchee River (Canal now) area and not be able to get into a fossiling place. Therefore - read about some of our earlier 1960s trips and enjoy them in your armchair.

(The Editor wishes to thank Colonel Edwards not only for this article, but for providing the shell fossils which illustrate our cover!)

*Coconut Grove, Florida

True fossils, perfect, beautiful shells millions of years old, abound in southern Florida around Lake Okeechobee at Brighton, Moore Haven and La Belle; along the Miami Canal off Route 27 at Terrytown; and along the Tamiami Trail at Forty Mile Bend. There is the Harney Pond Canal area near Lakeport in Glades County on northern Lake Okeechobee, which is very popular with fossil shell collectors. There are spoil banks along many roads that parallel drainage canals, and there are out-of-the-way areas, and new diggings are constantly being started.

On a spoil bank, dike or levee you can collect these fossil shells which are plentiful and snowy white. They sometimes show a little color and are perfectly preserved. You will find matched pairs and even operculums. These Pliocene and Miocene Florida fossils already have over 800 named forms. There are 150 or more varieties in one area awaiting ypur collecting buckets. Just short walks along the banks are enough for you to pick and choose the ones you want. No real digging is necessary. You cannot resist overloading your buckets.

At home, rinse out the sand, search it for a multitude of fabulous miniatures and sort the take. Consult Olsson and Harbisons' book, "Pliocene Mollusca of Southern Florida" (Acad. Nat. Sci., Philadelphia, Monograph #8, 1953) which has fifty plates of fossil shell pictures that are excellent, and records 500 species.

The cause of this fossil-shelling bonanza is the continuation of the Hoover Levee and the inlet and outlet canals around Lake Okeechobee. Diggings will go on to Harney Pond Canal and north to the Indian Prairie Canal, and from there to Kissimee River. The giant draglines and big buckets chew through layers of marl, shell and claw and spew their contents on the banks of canals thirty or more feet deep. Not everyone can see or work in the profiles of the canal banks because the diggings soon fill with water from Florida's high water table.

The draglines have uncovered an ancient shell beach lying beneath the Ice Age formations. Fossil shells, beautiful, exquisite and perfectly preserved, are eight to twenty million years old. Many species have been extinct for millions of years. This great prize of fossil shells has been found not far from the surface of central Florida around Lake Okeechobee and is known as the Caloosahatchee formation.

Just imagine the forces of nature that have been working in Florida over the centuries and the remarkable, plentiful and diversified number of shells that were living before man's contamination of our bays and inlets reduced shelling to its minimum. Some of the shells died out, they tell us, due to the cold of the Ice Age. The sea fell some 300 feet. Then thousands of years later, the warm period came and the ice melted. The seas rose 270 feet higher than they are today and most of Florida was under water. This back and forth work of the ages went on -- a truly fabulous and fascinating background story for a tray or show case of beautiful white and perfect fossil shells millions of years old.

The U.S. Army Engineers are doing the excavating; the sties are marked and the levees are numbered. Signs may read "No Trespassing", but a request usually will bring a "Welcome, but at your own risk" invitation. They will put you on the choice areas. Even the "hard-hat" construction workers have developed an interest in the multitude of fossil shells,

Vasum horridum

Vasum locklini

as well as in the barnacles, corals, sand dollars, cake urchins, and bones that are being dumped alongside the canals. Just collect away from their machinery, or come on Saturday or Sunday. When these drainage projects are finished, the grass and trees will soon cover the shells that now are exposed and then you will have to dig, buy or trade for them.

As one recognized the fossils, he is aware that many shells grew larger in the past, and that they actually were in beds. Wait until you see Ostrea and Chama that were real, real old and heavy before they died. To name fossil shells would be one big, long list. One day, a certain species of Cancellaria was a rare find, and then new diggings in the Pinecrest area turned up many of them. Shouts of "I've found another Cancellaria", could be heard on the dikes.

Shell club members on field trips all too rapidly fill their buckets and go back to the cars for more containers. They try not to overload, or not to take any more Cypraea with gloss still showing, or Turritella with long, sharp apices and perfect apertures.

You will surely find Scaphella junonia, Polinices duplicatus, Cypraea pustulaneus, Tellidora, Marginella (some two inches long) and Conus adversarius (left-handed and now extinct). There are Strombus alatus still with glossy apertures, Mitra, Terebra, Phalium, Turbo, Astraea, Busycon and Ficus. You find lovely Architectonica, Murex with the longest, sharpest spines and the frilliest frills, and there are unbelievable Murex textilus, Latirus, Fusinus, Prunum, Fasciolaria, Dentalium, Eupleura, Cerithidea and Crucibulum (these will fascinate you with their perfect shape and large size).

I love Arca, extinct now, but found in matched pairs along with Noetia, Anadara and Barbatia. All are large and wonderful. You will like the plentiful Trivia floridana and Vasum locklina or V. horridum. Pairs of extinct Rangia will delight you. There are Typhis, Trigonostoma, Mercenaria rileyi, M. tridactonata and huge Spondylus. Pick up Chione anywhere. Take Lucina, Codakia, Donax, Dinocardium, Cardium, Pecten and pairs of Echinochama.

Vasum muricatum Born, the Caribbean vase shell, is plentiful down on the Florida Keys and is one of my favorite shells. It is so heavy and white, and has such a nice stout operculum and lovely soft brown periostracum. And so it is that I find a favorite among the Florida fossils - two magnificent species which Olsson says are apparently confined to the Caloosahatchee. They have no closely related form in Recent fauna.

Vasum locklini differs from horridum by its broader form, its nonconstricted base and finer, more spiniform sculpture. Vasum horridum has fewer and more scoop-like tubercles and simpler nonscabrous spinal cords encircling the base.

These fossil shells which link us with the past, show very little change from present species, which other species are extinct. Such clean, unencrusted fossil shells are a worthy addition to any shell collection, and Florida has them.

(Foregoing reprinted from Shells and Their Neighbors, 1963.)

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When anyone says fossils, shellers think of shells, but there are those who think only bones or shark's teeth. From Shells and Their Neighbors, I quote: "A fossil is the evidence of past life as preserved in the rocks of the earth -- this includes tracks, molds, casts and impressions. Preservation can occur in a number of manners and in different types of minerals. The commoner methods may be listed as:

1. Preservation, where the original material is not destroyed.
2. Permineralization, in which the porous spaces in an organism are filled with mineral.
3. Replacement, a secondary process after permineralization has taken place.
4. Molds formed when the original organism decays or is dissolved, leaving a cavity in the shape of the original structure.
5. Casts formed when the minerals fill the mold.
6. Impressions made by the original organism, showing some part of the structure, such as tracks.

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## FUN ON A RELUCTANT FOSSIL HUNT 1961

Fossils? "Phooey", I said, "Not for me!" I like to take my shells alive and see them feeding or moving about in their natural habitat. But Muriel Hunter was taking the South Florida Shell Club fossiling, and I don't like to miss anything. I didn't have the time -- not with several cases of shells rashly promised for the shell show -- but I joined the hunt in an area miles from the ocean -- sure seemed queer business.

At our destination, Harney's Pond, which was clear "back of beyond", on the far side of Lake Okeechobee, the dikes were all fossil shells, with a little sand to hold them together. Being a non-working day we dared to walk in, around and under the jaws of the shovels, scoops and huge cranes. We picked up, dug up and scratched at the surface, as we worked our way up washed-out gullies. The day was beautiful, only 2% chance of rain; we shared sandwiches, apples and cookies and drinks (tea). We finally just HAD to go back to the cars to unload our buckets; then we walked far FAR down atop another dike -- you know how it is, grass is always greener somewhere else. Again we filled our buckets and little boxes for treasured tiny/spiny fossils, but the old-timers at fossil hunting were choosey and took only choice items completely missed by me. All day I kept saying that I liked living shell-animals and that I felt as though I was picking up old worn and faded "beach" shells; but what a "ball" -- all those pure white, perfect shells and even matched pairs.

A "planned" field trip and not a "lone" trip is THE thing -- I gathered lots of bits of wisdom: "Many fossils will crumble in your hand"; "Don't use too much bleach"; "Sift sand and junk that collects in the bottom of your bucket" (It was here that I found the lovely tiny shells).

"Central Florida fossil beds", and I'm copying this from Sea Secrets, "have been known and studied for a century. The fossil beds were laid down mainly during the Miocene and Pliocene epochs when most of the peninsula of Florida was covered by a shallow sea. The age of the shells range from one to twenty-five million years. They are true fossils, but beautifully preserved." Read The Pliocene Mollusca of Southern Florida by Olsson, Harbison et al.

The study of evolution develops the idea that all life began in the sea, but it has not changed much in the last few millions of years. Even I could recognize 35 or 40 of the fossil shell species that we found.

Most of this article was written to stress, "Come on a field trip whenever the club plans one". Going off alone, you miss the fun, fellowship, bits of wisdom from others and much of the "know how". I could find a certain fossil shell better after seeing what it looked like in place. I said I had a passion for opercula, so others kept on the lookout and gave me eight shelly opercs from Turbo that were better than any I found. Several nice fossils were put into my hands by the old-timers who were being choosier than I was on my very first fossil field trip.

I don't believe it yet, but I, Corinne E. Edwards, did collect fossils, and liked it! But can you imagine actually putting your SHELLS IN THE SUN TO BLEACH TO IMPROVE THEM?

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## FOSSIL SHELL FIELD TRIP

By John Root

Because of disappointing field trips in search of fossil shells by some members of the club, Muriel Hunter, President of the South Florida Shell Club, offered to take us to a spot where she knew we would be successful. Subsequently, early one Sunday morning, May 28, found Virginia Lee, John Root, Sr., Jack Schmidt and yours truly treking off to a rendezvous in the middle of the Everglades.

The meeting place was Terrytown, a "quick"

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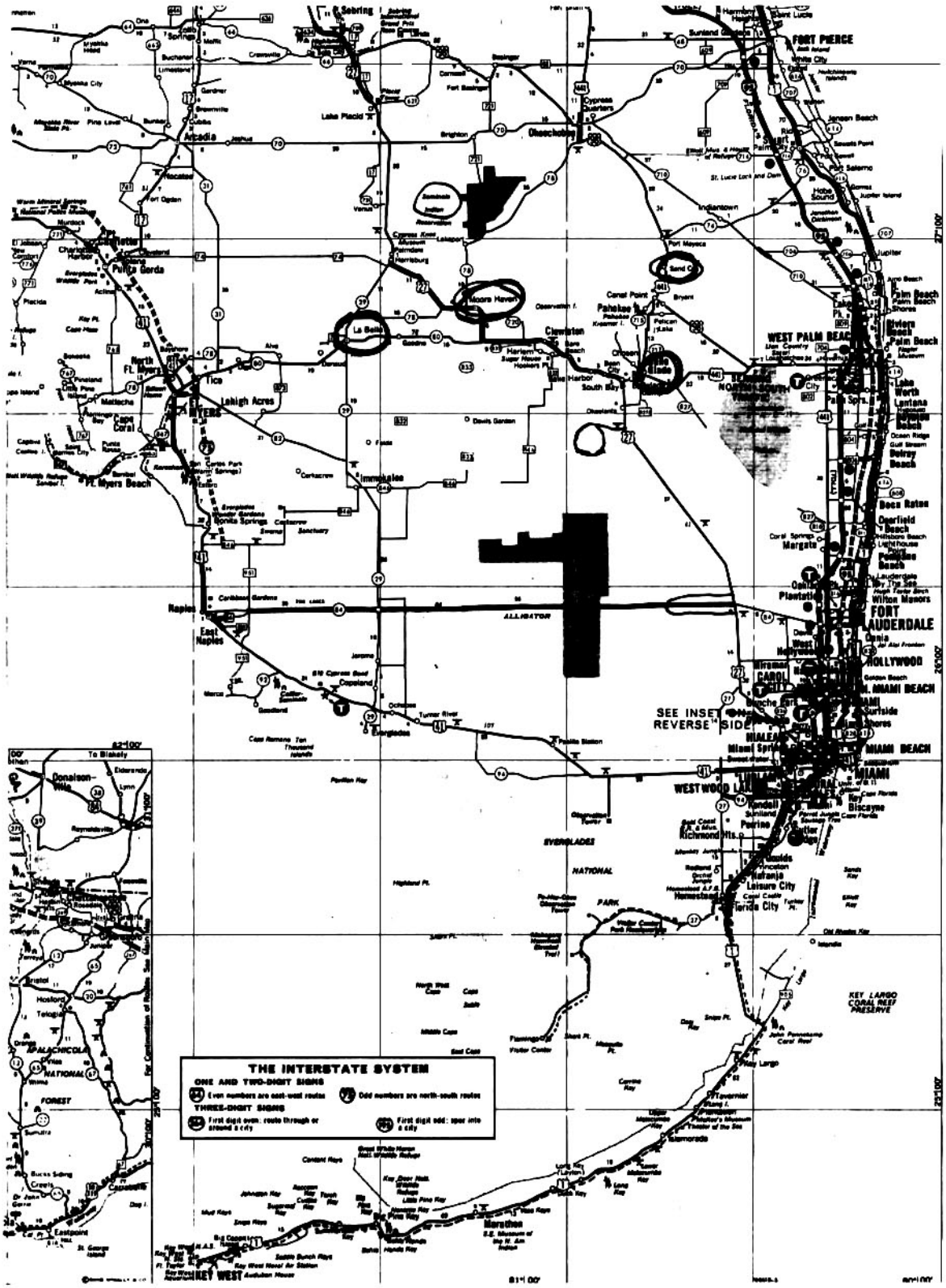


**Fossil sites mentioned in these articles are circled. From left to right they are: La Belle, Moore Haven, Belle Glade and SandCity. Terrytown is near the number 27 (marking the highway number), just south of south end of Lake Okeechobee.**

spot on US 27, about 20 miles south of South Bay. It is not hard to find, as there is a huge pumping station on the east side of the highway. Directly opposite the station, and on the south side of a service station which IS Terrytown, runs a graded canal-bank road. It is easily located by the signs indication it is Government Property from which you are cautioned to keep off: that Authorized Personnel ONLY are Permitted and that you are absolutely not to be admitted. So with these thoughts clearly impressed upon us, we headed westward fifteen miles. This takes less time in telling than in driving (one-way traffic with convenient pull-offs), but we eventually reached our goal. It is another massive pumping station "way out in the middle of nowhere".

The station, one of many in the Glades, is responsible for our access to the ancient shells. Back in the early twenties the mucky soil was scraped off the rock in one long scratch from Lake Okeechobee to Miami River. This was, and is called the Miami Canal. There were no roads, no farms, no nothing; just water and sawgrass. The Flood Control District, fairly recently, decided to put this land to use. They would fill parts of it with water, to make other sections usable. In so doing they built these pumping stations, and deepened the canals by digging into the rocks. This is where we come in.

Both directions from the station, the spoils banks consist of shell sand, shell rock and guess what? SHELLS! We had it made. This is from the Caloosahatchee formation, and is rich in the fossil shells we nuts are looking for. As work is still being carried on, there are signs wverywhere: "Keep Out! - Hard Hat Area - Stay Out". Coming on Sundays has its advantages as there is no one there to enforce the requests, so trespassers, fishermen, (we were the only shell pickers) take the signs literally. The road lies between the canal and the banks and is a good hard one made by the heavy machinery used in deepening the canal. We proceeded along this road about one half mile, stopped and stepped into "Eden".

Shells were everywhere. It soon became apparent that most of the shells were of several common species, and that it took real looking to locate the rarer ones. Nevertheless, they were there. We found quite impressive numbers of species that are extinct. The fact they are no longer with us as present-day mollusks is understandable, as they come from the Pliocene era, estimated to be from five to eleven million years behind us. We particularly enjoyed finding a giant Marginella, some 1½ inches, which is quite a change from the ¼ inch ones we sift out today. The long, slender, foliated Murex textilis is also a delight to the eye. Probably the rarest find was the tulip-like Liochlamys bulbosa. Of course, the left hand cone, Conus adversarius; the distinctive cowrie, Cypraea problematica; and the classic ark, Arca wagneriana, are always a delight to us neophyte fossilers. Muriel, who knows more about fossil shells than any of us will learn in a long time, was pleased to name them for us. She also dealt a blow to our volute fanatic - the monstrous volutes we had been collecting turned out to be Xancus, Mitra, Strombus, and, finally, one Voluta.

It was HOT out there that day in May, the drinking water supply we brought along was horribly underestimated, and last no time at all. Otherwise, we might still be there. As it was, we had to pull out after a few hours. But we are going back again sometime when it is cooler. Won't y'all come?

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## LET'S GO TO THE FOSSIL BEDS - 1961

By Neil and Laura Hepler

One nice morning last week we thought about fossil shells and decided to do something about trying to add some fossils to our shell collection. By 9:30 AM all was in readiness to take off for Terrytown. This was to be our first trip there, so in checking the map we found it to be 60 miles from our home. We put aboard the necessary things we thought we'd need: buckets, trowels, shovels, etc., and of course we could not forget food and plenty of ice and water.

At Terrytown the beginning of the road to the fossil beds are marked with a sign stating: "Government Property -- No Trespassing" (we had been told by a friend, who had been to the beds, that it was okay to go through), so we proceeded. A straight, westward and very dusty road took us to the fossil beds. We must say that after going about five miles on a road of that nature for the first time, one could easily be persuaded to turn around and go back, but a good sheller never gives up. We continued on until we arrived at another pumping station which was 16 miles from the main road, in the Everglades. Man, oh man! What a ride? We did 20 mph over that road.

Passing the pumping station we continued on for another quarter mile on what seemed to be a new road bed. Upon stopping to look around we found the reward for our venture through that vast nothingness. This new road bed was loaded with fossil shells. The weather was great and we were the only ones around for miles - except for a few hundred bees which came from a nearby hive.

After some collecting our thoughts turned to food. After putting away a few ham and cheese sandwiches and a cool drink (grape juice, that is) we were ready to dig into that shell pile again. By using the methods of collecting now and sorting when we get home, we saved time. On returning home and sorting we were pleased to know we'd collected seventy different species of bivalves and univalves.

A Smithsonian official said the fossils are from eight to ten million years old. He added that they came predominantly from the Lower Pliocene age of the Caloosahatchee Formation and "many of the species are still living off the Florida coast".

## AFTERMATH OF ANOTHER FOSSIL TRIP

By Corinne E. Edwards (1962)

In his article in the June '61 SEAFARI, John Root called it a "long stretch" and the Heplers said, "Man, Oh Man, what a ride!". Their's was a fifteen mile bumpy ride along the spoil banks of the Miami Canal out of Terrytown (Florida), off US 27.

Then I was invited to start before dawn to go fossil-findin' fifteen miles further into the burned-over Everglades atop the hard-packed dikes and levees. We marvelled at the sunrise and the clouds, the view over the 'Glades and the rabbits, otter, birds and fish along the canal. We picked up buckets full of perfect, but now extinct, shells and others resembling our's of today. We hunted for small shells and tried not to overload with the more common ones. There they were, millions of years old and plenty of them. Shells were more plentiful then than they are today; man's civilized contamination had yet to reach them. We found fossil corals, three kinds of opercula, barnacles and a few bones, spines of sea urchins and perfectly smooth stones believed to be stomach stones. It was hot, but it was fascinating. When our food and water were nearly gone, we decided to head back and take a quick look at the area aroubd the bee hives at the 15-mile pumping station.

Later, after rinsing out the sand and smaller shells, scrubbing and laying these fossils out in the sun to whiten, I arranged one of each of 142 different kinds in four trays on colored towels. I, too, had a 2 inch Marginella, left handed Conus, huge Murex, extinct Arca and even Mercenaria rileyi and M. tridacnoides. I took my trays, maps and previous SEAFARI articles to the Coconut Grove Business and Professional Woman's Club for a "Show and Tell". I urged teachers and mothers to encourage their teenagers to study Florida history, starting back when the southern part was covered with a shallow sea and to collect fossil shells for a better project for next year's Science Fair.

Then I was invited to bring my lay-out and visit Coral Gables' paleontologist, Dr. Axel A. Olsson. What a delightful man and how thrilling to see him select from my trays and remark that this one was new, that one was a choice specimen and here was one that was only the third of its kind to be reported. He identified those which I had not succeeded in spdoing. Then we took my boxes of pure white fossils into a dark room where Dr. Olsson placed them under ultra-violet light, which showed up their markings and spots ever so clearly.

# AUSTRALIA 1975

By TOM RICE

Some of the shells found on the Great Barrier Reef.

The dream of most shell collectors is to see and collect on Australia's Great Barrier Reef. This dream came true for thirty-two shell collectors from the United States and Mexico this past summer. The tour, sponsored by Of Sea and Shore Museum and Of Sea and Shore Publications originated in Honolulu, Hawaii and San Francisco, California. I was to lead a group of fifteen from Honolulu and Kirk Anders would follow in a week with fifteen others from San Francisco.

I spent several days in Honolulu attempting to remember those items I'd neglected to pack and would be unlikely to obtain overseas. I was also able to renew acquaintances with several of Hawaii's friendly shellers. Most of the people in my group were going to be arriving in Honolulu by Friday July 25th and we were scheduled to depart for our first stop, Fiji, on the next day. Friday evening a number of us got together to celebrate Gerrie Walklet's birthday with dinner and the famous Don Ho Show. Familiar faces in the group included Anna Youngs (Walworth, New York) who had been to Fiji and New Zealand with me a few years ago, Veronica Parker Johns (New York City) who operates Seashells Unlimited and Barbara Olson of Gateway Travel who had set up the tour. We had a delightful time, but quit early as most of the group had been on-the-go since early this morning and we had a long flight to look forward to the next day.

At Honolulu International Airport the next day we met the rest of our part of the tour. From Columbus, Ohio came the Durstines (Wheels and Annette) and the Weiffenbachs (Carl and Mary Anne, Kurt and Amy) giving our group a three-generation family that we all enjoyed very much. Dr. and Mrs. M. Frank King and sons David and Steven from Vista, California also joined our happy and growing entourage. Kathy Daniels (from Verona, Pennsylvania) and Karin Gaster (from Mexico City) rounded out our companions.

Canadian Pacific Flight 301 to Nandi, Fiji went by uneventfully with a crossing of the International Dateline, some very good meals and just getting acquainted with one another occupying our time. We set down at the Nandi International Airport at 5:00 PM and I was amazed at how much the airport had grown in the few years since my last visit. Shortly, following simple customs inspection, we were getting settled for the night in a hotel near the airport.

Early Monday morning we boarded several taxis for the short ride to our abode for the next several days, The Fijian Hotel. Those of you who read my account of our previous visit to Fiji might recall the comments on the poor condition of the roads - well, they have been working on them quite a bit and in another year or so one will be able to use a completely new, and widened, roadway. We were able to take advantage of a few miles on our way to Yanuca Island and the Fijian. We were visiting Fiji during the "dry season" and were looking forward to blue skies, warm breezes and comfortable snorkeling. Unfortunately the elements were not going to co-operate and we had a seemingly endless run of rain storms, winds and cool weather - one day five inches of rain were recorded (usually no rain is recorded during this time of year)!

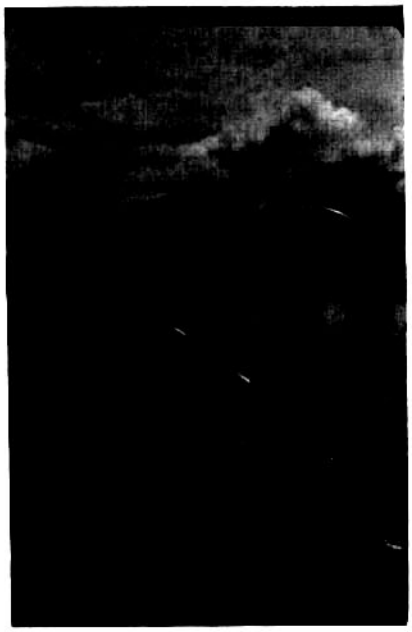
Crossing the causeway to Yanuca Island we entered the tropical paradise that is the Fijian Hotel. Soon we were settled into our rooms and despite the pouring rain nearly everyone quickly headed for the water or at least started to examine the rich drift line. I had obtained a hand dredge from the Fairs in Honolulu and it proved very proficient in collecting Pupa, Strombus, Mitra, Nassarius and other sand dwellers from the shallow reef area directly in front of our rooms. Sudden squalls failed to completely dampen our spirits and after getting dry (or taking a hot shower to warm up) we headed back to the water. Amy found a beautiful Conus textile which helped spur the rest of us to search more diligently.

When one is busy on the beach all day the evenings are short - that bed seems so very inviting. Dinner at the Fijian involved a hike to the dining room, some ¼-mile from our wing of the hotel (they were building new dining, bar and swimming facilities near our rooms, but they were not yet finished). Here we were able to re-acquaint ourselves with the delights of kokonda (raw fish, marinated in lime juice and coconut milk) and other tropical delicacies. It is always fun to try something new on the menu.

On returning to our rooms following dinner one evening everyone had quite a scare. Amy was leading the way through the under-construction bar when she shouted, "There's a snake here!" "Don't go near it!" someone replied. We all crowded around to see the four foot reptile as it lay on the tile floor - fortunately near the only light in the place (we afterward marveled at the good fortune that it had been where it was and not in the shadows that covered most of our pathway). Its triangular-shaped head told us to be cautious and we shoved it off the patio into the flower beds, using an oar from a nearby canoe. The next morning Anna reported it still lurking in the flower bed alongside the path. On inquiry we learned that it was a poisonous species of water snake, though they usually gave no trouble when encountered.

Wednesday, shortly before noon, we departed the Fijian (in the rain) and undertook the long drive to Suva. Stopping at the Koralevu Hotel for lunch we saw our first Golden Cowry. The gift shop at the hotel had one for sale - at a figure well above what the same species obtains in the U.S. Following this short respite we continued through the rain and mud to Suva, capital of the Fiji Islands. The Travelodge was our headquarters here and since it is located across the street from the Fijian Museum and Botanical Gardens we were able to visit these spots between the rain showers.

Everyone visited the public markets - and came away with shells purchased from the Indians who ran the stalls. Something we called the "Fijian Flu" seemed to be going around and several of the gals in our group came down with it - and when we met the rest of our tour group in Cairns later on, graciously shared the "bug" with them. The Fiji Shell Club had been contacted prior to our tour and several members visited us at the Travelodge, bringing shells to exchange and making us feel very welcome. Dr. Ken Gilchrist and the others reinforced my feelings that shell collectors are amongst the most friendly people in the world.

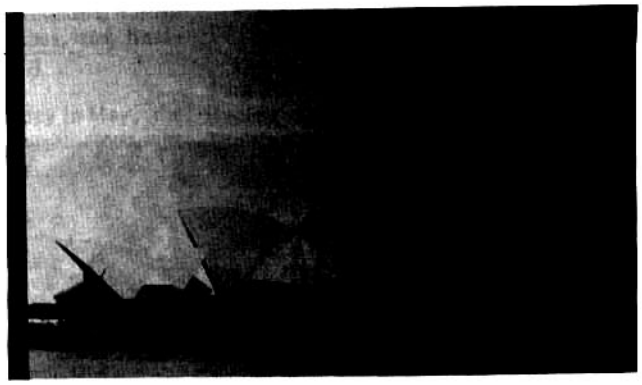


The Oolooloo Cruise in Suva Harbor takes one in a large glass-bottom boat for a look at the magnificent coral reef. We all gasped at the amazing colors and formations revealed. At one point the boat stops and anyone can go diving who wishes to do so. For those not so inclined several employees of the cruise company dive down and bring up coral, fishes and shells which are placed on deck or in an aquarium for photo taking and admiring.

Everyone who visits Fiji comes away remarking on how friendly the Fijian people are to visitors. We had the opportunity to visit an attraction outside the city of Suva where a traditional village has been set up and dances and yaqona (or kava) ceremonies are given for the enjoyment and education of visitors. Our guide, Epi, espoused on the history of Fiji during our bus trip to the village; and proudly pointed out the home of Mr. Raymond Burr (noted actor and shell collector). At the village Epi disappeared, only to reappear as leader of the singing and dancing group who were to entertain us. Dr. and Mrs. King took part, as representatives of our group, in the solemn yaqona ceremony and Amy won top prize in a throwing game, again representing the shelling tour. We were able, at the village, to get close-up looks at some of the local flora and fauna. Mongooses, fruit bats and monkies caught our attention, as did the gift shop and a small shell display. We left the village to the haunting strains of the Fijian song of farewell.

Our final two days in Fiji, including our boat and village trips were finally bright and warm - so our spirits lifted considerably. We were stuffed aboard a small prop plane for our trip to Nandi where we were transferred to Canadian Pacific again for our next leg - to Sydney.

We arrived in Sydney late in the evening and after filling out papers concerning a lost piece of luggage (it turned up a few days later) we got to our hotel and turned in. Next morning most of us went on the Captain Cook Harbor Tour while others went to Lance Moore's famous shell shop. Our harbor tour took us past the famous Sydney Opera House, to the entrance of the harbor, along beautiful waterfront homes and back to our dock. The afternoon saw us touring the city by bus, in a sprinkling rain (it's following us!). We all made it to Lance's shop at one time or another during the day and we're amazed at the mass of material crowded into such a small space. Luck was with us in one respect - a new book had appeared that week and it was on Australian shells! "What Shell Is That?" by Neville Coleman (who has done



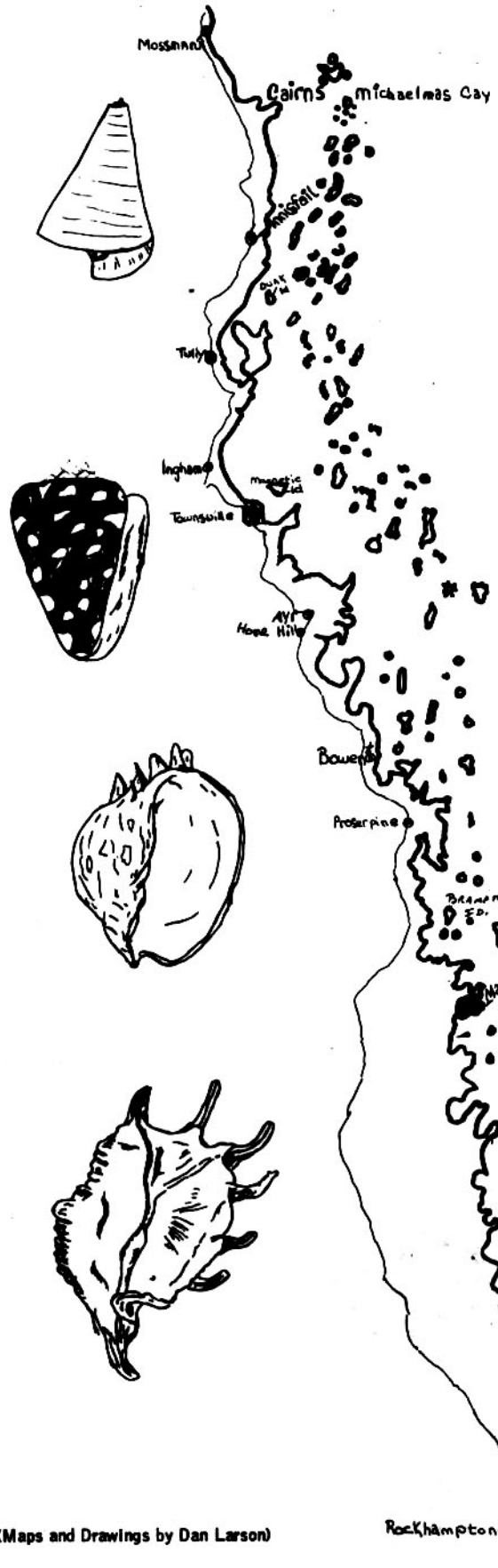
Sidney Opera House

some covers for OS&S) shows, in beautiful color, more than 800 varieties of mollusks, including nudibranchs, bivalves and some of the hard-to-identify smaller snails. With this book we were able to identify 90% of the shells we later collected.

Quick shopping trips produced aborigine artifacts, other books and items we had neglected to get before leaving the U.S. Unlike the United States, the shops and stores in Australia close at noon on Saturday and do not open at all on Sunday.

While our other flights were uneventful, this was not to be with our flight from Sidney to Townsville (on our way to Cairns). No sooner had the plane taken off tha, over the p.a. came the plea "is there a doctor aboard?"! Frank King immediately made himself known and was told there was an ill passenger in the rear secion. We had all noticed a very elderly lady board, assisted by the stewardess and looking extremely frail. Frank, as did the rest of us, thought this must be the passenger who had become ill so he headed for her seat - the stewardess had neglected to tell him exactly which passenger was ill. She wasn't the one - a man nearby had fainted and everyone thought it was his heart. Frank soon discovered that the man had been suffering from "tourista" and hadn't been able to keep food down for a few days and the excitement of takeoff and this lack of food had caused him to faint. The panel above his seat was opened and the oxygen mask pulled down and oxygen administered - he looked much better shortly. Then the stewardess went to push the button to turn off the oxygen - hit the wrong button and caused every oxygen mask in the plane to fall down into the face of each passenger! Now just before takeoff on every single flight I've ever taken they give you the instructions as to what to do should the oxygen mask ever come down, pull it to your nose, etc.- No one seemed to move - only Gerrie did what we'd been told to do - even though for all we knew we were going to need that oxygen! It was no emergency, fortunately, and we all stuffed the masks back into the overhead compartment. The rest of the flight was uneventful.

Dr. Rotter, what are you doing in that mud? (photo by L. Hemmie)




(Maps and Drawings by Dan Larson)

That Cairn's beach is a little muddy! Left to right: Dr. Saul Rotter, Lillian Hemmie and Kirk Anders.

Cairns (rhymes with tin cans) is the largest city on the northeastern coast of Australia and the access point for the northern portion of the Great Barrier Reef. I expected, when we arrived at the motel, to be greeted by at least one member of Kirk's group (though I knew they'd had a longer series of flights than any of us had had) - and the one I'd expected was there with her wide smile and enthusiastic hug. Lillian Hemmie (Brownsville, Texas) had been on the previous trip to Fiji with me and had visited the OS&S Museum last summer during the C.O.A. Seattle Convention. Several others of Kirk's group were about and soon gathered around the bus. We were a bit shocked! What a mottly crew! Covered nearly to their hips with mud, we didn't know whether we wanted to know these people or not. They soon told us they'd been shelling in the mangroves near the motel and that the mud was unbelievable. But they had found shells! Telescopium telescopium seems to be a very hardy species - to be able to live in that habitat and they proved hardy in other ways (Kathy mailed a box home with some in whose aperture she'd stuffed paper, planning to clean out the decaying animal on returning home. It took the box seven to eight weeks to get to Pennsylvania, but upon opening it Kathy discovered the critters were still alive! Today they are living in an aquarium - a living memory of Kathy's Australian tour!).

Coya Beach, north of Cairns, Queensland

Cleaning area for us shellers at Tradewinds.

We were now all together. Joining those already mentioned were (Dr.) Paul and Marjorie Bauer (Palm Beach, Florida and also members of my previous Fiji trip), Gladys Crumb (Lexington, Massachusetts) and her well-known sister Edith Mugridge (Glory of the Sea Shell Shop on Sanibel Island, Florida), Connie Duprey (Nashville, Tennessee), Lt. Col. Corinne E. Edwards (Coconut Grove, Florida), Gene Everson (Ft. Lauderdale, Florida), famous Bob Fish (of Cherry Hill, New Jersey and our Mauritius tour fame), Iris Francis (Chicago, Illinois, Ruth Hunkins (Englewood, Florida), John and Faye Rathbun (Portland, Oregon), Bill Rice (Seattle, Washington) and Dr. Saul Rotter (Palm Beach, Florida).

The Tradewinds Motel is the largest in Cairns and we took over a majority of its rooms. We had heard terrible rumors about how poor the food in Australia could be (maybe a carry-over from World War II mutton), but we found just the opposite to be the case everywhere! Here we had a sumptuous buffet each evening - first one chose from cold selections of shrimp, prawns, lobster, cold cuts, salads, etc. and maybe chicken, corn-on-the-cob, casseroles. Then, from an old-fashioned meat counter you pick a steak (T-bone, New York, or a fillet mignon) or lamb or pork chops or fish, or if you were as hungry as Kurt Weiffenbach usually was (a growing teenager you know), you could have a steak (or two) plus fish and/or chops! All cooked to your order. (We found that Australians like their steaks well done and so had to remember to give the cook instructions as to rare, medium rare, etc., or it would come back well done.)

The management of the Tradewinds was very cooperative. I think possibly the smell of all those dieing shells after a few days may have helped, but nonetheless, they provided us with an area and stove on which to cook and clean shells.

Our first evening in Cairns introduced us to some of the most helpful and friendly people one could hope to find anywhere. I had written some time before, while planning the tour, to Beth Sladek, telling her of our plans for the tour and asking innumerable questions. Beth had given me many helpful suggestions and said that when we arrived she'd meet us. Not only did she and her marvelous husband Walter meet us that evening, but they, along with the President of the Cairns Shell Club, Harry Collins and his sweet wife Barbara, went all-out to see that we got out to the better shelling beaches, were provided with lunch (or tucker as they called it) and anything else that might make our visit to Cairns more enjoyable.

Speaking of tucker, we discovered that Harry lives on Tucker St. and our motel was on Abbott Street - we half expected R. Tucker Abbott to show up some evening! Barry Hoare who has a museum of New Guinea artifacts and a large shell collection housed behind that, opened his place for us one evening (we were too busy shelling every day to get there during "normal" hours), and Mrs. Alison Read also opened her shell museum for us to visit on one evening. The Shell Club was celebrating its tenth anniversary and we were able to attend the meeting and have a lively exchange of specimens too.

Monday was our first full day in the Cairns area and we arranged to hire a bus to go north a wayw to a beach where shelling might be good. When we mentioned Coya Beach to the driver he looked perplexed, but on inquiring about soon knew where to take us. This beach is located near Port Douglas, a small town twenty miles or so north of Cairns. The foreshore is very muddy, but once through that the footing gets better and a dead coral reef lies about a half mile from the high tide line and today's low tide enabled us to easily reach it. There we found several species of Oliva, some Cypraea, a few dead, but nice, Melo and various other specimens - all thrilling to us as these were the first shells most of us had ever collected in Australia. Searching around coral and rocks we found a number of Vexillum caffrum. In the mangroves of the upper beach we found some nice Chicoreus permestus Hedley, 1915, looking so much like the muddy roots of the mangroves that they were hard to spot. Further into the mangroves were millions of large Pyrazus ebeninus and Terebralia sulcata creeping about.

Our main purpose, remember, in coming to this part of the world was to visit the Great Barrier Reef. We have the M.V. Melawondi chartered for the next three days for trips to various reefs and cays near Cairns. Tuesday morning we boarded this old boat and chugged our way out to Michelmas Cay. The trip across the blue waters of the Coral Sea took about three hours. Arriving at Michelmas we found that it was the destination of several other groups as well. This sandy islet is the home for thousands upon thousands of terns of several species. One must carefully walk across their nesting grounds to reach the huge coral reef lying on the opposite side from where the boats are anchored. The wind is coming up and the surface of the water is rippled and it makes it a bit difficult to see what might be crawling about amongst the gorgeous corals. Soon everyone is calling out over one "find" or another. Strombus luhuanus seems to be everywhere. Conus marmoreus is found with some frequency. Lambis are spotted, their huge eyes peering at you from their hiding place under the edge of a coral head. Various species of Terebra, some Cypraea and other cones take their place in collector's buckets to be carefully cleaned and taken home - to provoke memories of this gorgeous day on the unbelievably beautiful G.B.R. All too soon the tide, one of the lowest of the year, turns and we are forced to return to the Melawandi for the trip back to Cairns. The wind is blowing ever stronger and combined with the incoming tide causes our return trip to be quite rough. Several shellers go from a sunburned red to a seasick green.

Low tide on the Great Barrier Reef.

August, one reads in every single book on Australia or Queensland, is the driest month of the year. It NEVER RAINS IN CAIRNS IN AUGUST!! Well, change all that. It does rain in Cairns in August; and the wind blows too! Well, the weather blew up enough that the next days trip to another reef was changed and those who braved the rough water went to Fitzroy Island where the collecting was pretty good and

several wallabies were seen on the beach. The third trip to the Great Barrier Reed was cancelled altogether since the winds were blowing above 30 knots and neither the captain of the Melawandi nor any of us were all that interested in journeying out into the gale.

We did not let this deter us from taking advantage of the lowest tides of the year! Those who remained behind the second day headed north again to Four-mile Beach, where more Cypraea (vitellus, etc.) and Vexillum were collected. The third day we had rented cars and scattered here and there: most going to Four-mile Beach, some to Pebbly Beach (where there were lots of rocks with limpets, etc.).

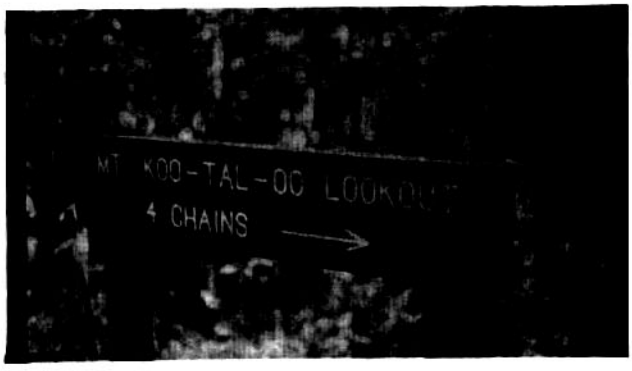
Many of us felt disappointed, naturally, in not being able to get out to the Great Barrier Reef proper more than a single time, but we felt better when, on the swap night with the local club, we discovered in looking at the displays of local species, that amongst our group we had been able to collect nearly every species displayed!

This area of the state of Queensland is heavily planted in sugar cane. Cane and sugar products are shipped from here to many parts of the world. It is also famous for its orchids and bird life. We were able to see a large number of the local birds in a bird sanctuary near Cairns. Here, too, we were able to pet and feed kangaroos and wallabies (they sell you bar-b-que potato chips to feed the animals!). Opals are something that many people think of when Australia is mentioned and several in our group made purchases of rings in Cairns. One of the best places to shop for plastic buckets, chiton knives, alcohol, etc. is Woolworths (affectionately known in Australia as Wooli's) the largest chain of stores in Australia.

Gene Everson and Bob Fish went out one night for a bit on night collecting. After a long drive and the late hour they had added a few nice shells to their booty.

On Saturday the 9th of August we all went to Harry and Barbara's house. From there Harry shuttled us to the beach and, via his outboard motor boat, across the mouth of a river to a remote beach. Here some live bonnets were collected as well as some nice Architectonica (sun dials). A really odd shell showed up in the drift here, the Twisted Ark, looking as if it would be impossible for such a bivalve to exist.

Cairns will always hold many nice memories, but especially nice are those of the marvelous people we met there!




Half of our group's luggage awaits passage to Dunk.

Innisfail was our next stop, only some sixty miles south of Cairns. This was a day of relaxation. Some just dozed, others strolled about town. In the afternoon Miss D. Constantine and Mr. and Mrs. Pini and other members of the Innisfail Shell Club hosted us at the shell museum of Mr. and Mrs. Sestro near town. Here we enjoyed some interesting cakes and pastries as well as other goodies. The museum was very nice and there were some good bargains at the sales area. Karin Gaster and I went to the movies that evening - we saw Earthquake. The seats in the theater were quite different from these at home, they were like a double canvas beach chair with almost enough room for two people, or ample room for two cuddlers. Very comfortable.

The nest morning we made our way via motorcoach to the dock at Clump Point where we were to board our boat to Dunk Island. The resort on Dunk Island was one of our most-relaxing times during the whole tour. Hidden amongst the trees the units face the beautiful beach. We went hiking to the top of Mount Koo-tal-oo and viewed the distant coast of Queensland - more mountainous than we had thought.

What is a "chain"?

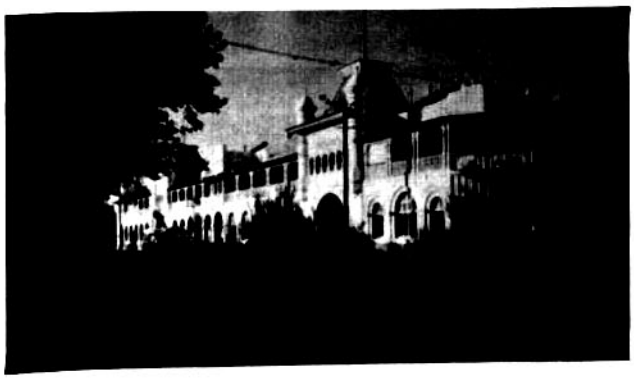
While the tides were not too low while we were on Dunk Island, most of us explored the beaches and added some more species to our growing number of shells collected on the tour. The tide mark yielded some interesting specimens as well.

When we had been at Cairns Walter Sladek had collected a number of Cypraea which we were to divide, along with other shells, amongst our group. We had kept these sealed and now, on the beach at Dunk, cleaned them. Fortunately we located a hose and Kirk and I stood for two hours squirting these terrible smelling shells to get the slimy flesh out (later the airlines would lose the box before we had a chance to distribute the shells, but that's getting ahead of my story). We hadn't noticed any flies previously, but this cleaning operation certainly attracted them in large numbers! The one insect we saw on our arrival was quite spectacular. On reaching our quarters we found a huge moth clinging to one of the beams supporting the second-floor walkway. It must have measured six or eight inches across and stayed on that beam the whole day, leaving sometime during the night.

When we had been to Fiji several years before we'd stayed at the Reef Hotel. There we had met a very friendly young Australian named Geoff, who was in training in hotel management. It was a pleasant surprise to now find Geoff as manager of Dunk Island!

Evenings at Dunk Island are taken up with a weekly movie and such local past times as "Dunk Island Bingo". Meals here proved that the sumptuous spreads at Cairns were not to be an exception, but that good, generous meals were the rule. I can not understand why more Australians are not grossly overweight - maybe they don't eat as they do at resorts in their own homes. The day starts with a breakfast of fresh fruit, cereal, eggs whichever way you like them (don't be surprised if they have no idea what a scrambled egg is) plus ham, bacon, steak or fish - we seldom saw pancakes on a menu, but did notice something we stayed clear of, spagheti on toast! Then as the day progresses you stop at ten in the morning for morning tea - tea or coffee and sandwiches. Noontime brings a large mid-day meal with everything from soup to nuts (appetizers, fish course, entree, veges and dessert) and then at four in the afternoon is afternoon tea with tea and coffee and cookies or cakes. Dinner is at seven or so and repeats the vast choices available at lunch, though even more so. And, if that doesn't do you in, at about ten o'clock they have "supper" which is more the size of the usual U.S. lunch! And would you believe I actually lost weight on the trip!

The next morning, Thursday August 13th, a number of our group went on a reef viewing trip on board the M.V. Purtaboy. On their return in the afternoon we returned to the mainland. They reported a good chance to see some really huge Tridacna gigas. Everywhere we went on the G.B.R. you could see hundreds of living clams, with their mantles colored brilliant hues. Color is caused by the symbiotic algaes that live within the tissues of the clam.



The Queens Hotel, Townsville (photo by Lillian Hemmie)

Following a miserable bus trip (for some reason we had to use a city bus for a 150-mile trip down one of the worst "main" roads I have ever been on.) and a tasty dinner of beer-batter fish and chips in Tully, we arrived, exhausted, at midnight in Townsville. I'm afraid most of our group has mixed feelings concerning this town. The touring company (in Sydney) that had booked the land arrangements for our tour had, for some reason, put us into a waterfront hotel that had been built 111 years ago! And hadn't bee updated for at least twenty years. The Queens had been General McArthur's headquarters during WWII and its tiny rooms, hospital-type beds with rope springs that sagged in the middle nearly to the floor, and toilets and showers somewhere down the high corridors. A number of people transferred to another hotel the next morning, the rest "sticking it out" for the second and last night in Townsville. Actually, it was a fascinating old building and we mused at what it must have been like in its "hey day". The grand central staircase must have made grand entrances possible for the elegantly-clad ladies of the last century. Off the dining room was a door labelled "Ladies Sitting Room" - when the men got out the cigars and brandy after dinner the ladies had to go somewhere!

Author pets Koala Bear on Magnetic Island

From Townsville we took a freey across the narrow channel to Magnetic Island for a day of touring. Checking the beach near where we stopped for tea, several found a few small shells as souvenirs. At the far end of the island, at Picnic Bay we saw a sign warning of the presence in these waters, between October and March, of the sea wasp or deadly jellyfish - the sign gave instructions for such things as bathing sting in alcohol, giving mouth-to-mouth resuscitation and if all else fails, closed heart massage! This is one big reason we schedule our tours to Australia when we do!

Also on Magnetic Island we visited Koala Park, where wild koala are brought when found injured and nursed back to health prior to being reintroduced to the wild. Here each of us was able to pet several of these cuddly little marsupials. The most famous koala in the U.S. came from here prior to his role in the Quantas Airline ads.

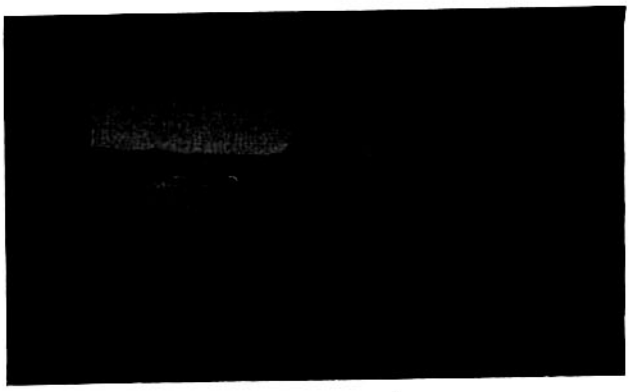
The drift at Picnic Bay yielded a number of Dentalium to Dr. King and sons David and Steven who quickly checked out the line at high tide's limit. Magnetic Island has high rocky hills, with picturesque little bays here and there along the rugged coast. The Marine Gardens is near Nelly Bay and is a large aquarium featuring creatures from the near-by Great Barrier Reef. A large display of flourescent corals is especially beautiful.

"Dashing Dora"

Our transport on Magnetic Island was a bus, poetically named "Dashing Dora". The friendly driver continually joshed Iris after he had to hunt her up prior to departing from our first stop - each time we left another spot, as we counted noses, he asked "Is Iris aboard?"

Our next stop was to be Brampton Island. The short flight from Townsville to Mackay - where we were to take small prop planes out to Brampton - was a bit rough, but not too bad. Upon arrival in Mackay, however, we learned that all flights to Brampton had been cancelled due to the winds. The airline would put us up in Mackay and hoped to be able to fly us to Brampton the next day. The Hotel Whitsunday will remain, in my mind at least, as one of the nicest abodes I've encountered anywhere. Upon entering our room we discovered, to our delight, that the small refrigerator, which is a fixture in nearly every hotel or motel in the South Pacific, was stocked with soft drinks, mixers and liquor (gin, vodka and scotch) in the miniature bottles such as the airlines use. It was nice to be able to sip a cooling drink and not have to wonder where to get a coke! Then we migrated down for dinner and were, again pleasantly surprised. In the small bar a young man entertained with the songs of John Denver, while in the small dining room (with a huge menu) another young fellow worked the flambeau cart with dexterity belieing his young years. A pleasant three hour dinner ensued (one does not dine in a hurry in most restaurants outside the U.S.!). Mid-way through dinner, just as Kirk was about to have his prawns flambeaued, the wall along one side of the dining room parted and we discovered on the other side another very large room with discotheque. So while we continued our dinner we were entertained by the rock band and the young Australians who danced all the latest. Carl and daughter Amy took to the floor for a few numbers to show how we Yanks do it.

Brampton Island is part of the island chain in the Whitsunday Passage and has been a holiday resort for many years. Our flight the next morning was smooth and the scenery beautiful. It took two planes to



The beach at the end of airport runway, Brampton Id. (Hemmie photo)

take our large group across the channel. Clive Newsome works on Brampton and was there to meet us upon our arrival. He had some live shells in his hand and many suggestions as to good collecting spots and when to go there. The next several days whizzed by in a flurry of activity and relaxation.

Many tour members got a good sunburn in usually unexposed places when they spent a lot of time bent over the drift line picking up paper shells (actually Foraminifera) for stringing into souvenir necklaces. Night collecting here proved unproductive for some, but Cark and Kurt brought back some nice volutes. Gene Everson found a pair of nice sized Syrinx (the Australian False Trumpet) and some other nice specimens when he and Dot King hiked to the far side of the island and did a bit of "mountain goatting" to reach a nearly inaccessible beach. Most of us spent our time near the end of the runway searching the stretches of coral reef exposed by the low tides. Huge Trochus shells were seen; an odd-ball chiton collected; two species of abalone found; and Bob Fish found more than a dozen species of Cypraea.

When the tide fell, the channel between Brampton and the small, uninhabited island towards the mainland, fell enough to enable us to cross and explore the beaches there. Not much was found, though an immense amount of coral reef was exposed. The drift line did produce a couple of nice fresh dead volutes and handfuls of paper shells.

Entertainment at Brampton during the evening hours included a movie night (a dreary Clint Eastwood picture), a Hawaiian night and other resort-type activities. A "wild" emu entertained those sitting near the entrance during the movie with his "belching" sounds - no one else could understand why we were laughing during such serious scenes.

Brampton Island is the home to huge flocks of Lorikeets and they are so tame that each morning when they're fed the will land all over you as you come by with something to eat. Along with the colorful bougainvillea everywhere they make the resort a spectacular place.

With this many people there is bound to be some important personal dates occurring during a long tour. Our last evening on Brampton saw two sparkler-festooned cakes arrive - one for John Rathbun's birthday and the other for Carl and Mary Anne Weiffenbach's anniversary. Dot and Frank King were to celebrate their twenty-fifth anniversary later during the tour. Dot stunned all of us earlier when she said that she and Frank would be celebrating their fiftieth anniversary during the tour - what she meant was that their 25th anniversary fell on Wednesday, August 27th and that was the day we would re-cross the International Dateline, so we'd have two 27ths of August and 25 plus 25 equals 50, sooooooo.

The Durstines and Weiffenbacks now headed for home and Paul and Marjorie Bauer headed for Fiji and warmer waters in which to search for their favorite tropical marine fish to take home. The rest of our group headed for Rockhampton and Yeppoon and the Keppel Bay area near the southern end of the Great Barrier Reef.

At the Rockhampton airport we were met by jolly Bob Brown and his wife Dot who along with Ted Sheehan, President of the Keppel Bay shell Club, welcomed us to their part of Australia. The friendliness we had encountered elsewhere occurred here too. The Browns, Don and Val Harris, Tom Nielsen, Bill and Ruby Wilson, Gordon LaPraik and others of the Keppel Bay Club were helpful beyond expectation. They arranged for guides to the local collecting spots, hosted us at a club meeting and, in general, made our stay in their area very, very enjoyable.

Humpy Island gave up a number of melanistic cowries to those of our group who travelled there one day. Others found pickings interesting at Pickininny Beach and other areas. A highlight for me was a day spent with Don Harris on his boat, dredging for specimens. Ruth, Iris, Faye, Gene, Frank and I set out early in the morning to look for "treasure" in the sea. Don has had so much experience he knew right where to go for some endemic allied cowries. After a few "swipes" through the area we each had enough specimens to trade for quite some time. During the rest of the day we pulled up some volutes, carrier shells, scallops and numerous other, mostly small, species. We won't mention the Editor and several others who got seasick during the trip! We garnered many curious stares as we divided the spoils at the dock near where the regular tour boats unload their passengers.

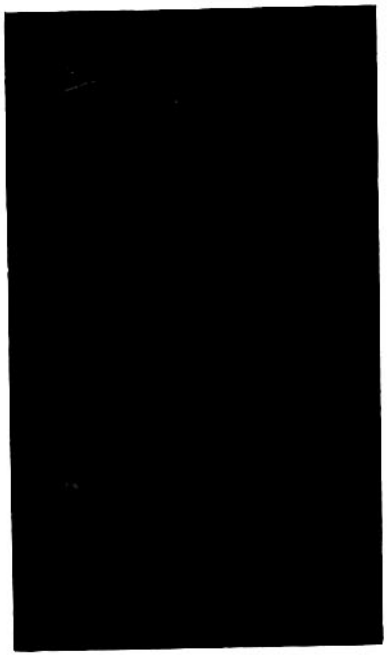
Yeppoon was the place where our members did their shell shopping. Two went home with Voluta perplicata, others with Voluta thatcheri and Voluta kreusleri. With the Brown's Yeppoon Shell Museum, Val Harris's World Shells and Tom Nielsen's business we all had ample opportunity to purchase anything in the way of Australian shells that we might desire.

On one of the local beaches we found some nice Cancellaria and the beach was composed nearly entirely of small shells, which I bagged a few thousand and brought home to sort later. The flats in a mangrove area through which we walked to reach the beach, help small armies of tiny blue-shelled crabs which, on our approach, screwed themselves down into the sand.

The days seemed to start to slip by more rapidly as the end of the tour came into sight. We hope next year - the tour leaves for Australia on July 1, 1976 and we already have ten signed up, so if you'd like to come along you'd better let us know soon - to spend more time in the Yeppoon area, possibly camping on an island in the Great Barrier Reef itself.

Acanthaster planci, the Crown of Thorns

Everyone's read about the infamous Crown of Thorns Starfish. The Government of Australia has banned the collecting of both the Triton's Trumpet (Charonia tritonis) and the large Helmet Shell (Cassis cornuta). In talking to dozens of shell collectors all along the 1200 mile stretch of the Great Barrier Reef we could find none who could remember a



Amy Weiffenbach makes friends with a native Australian.

Like many of us, Corinne took a moment to catch a wink.

specimen of Charonia tritonis ever having been found there! And furthermore none had seen a specimen of Acanthaster planci (the Crown of Thorns) either! In fact during the recent visit of Queen Elizabeth II Australia a number of armed forces oersonnel, divers, etc. were dispatched to bring back a specimen of Acanthaster to show Her Majesty, but in searching for five days none could be found. In reading further and talking with concerned people in various tropical areas I have found that areas devastated by the sea stars have regrown even more luxuriantly than they had been prior to the cultivating by the stars. New species of algaes and corals, not before able to establi sh themselves in the area now have a foothold in the area cleaned of older growths by the planci. Perhaps, like a good gardner, Mother Nature cultivates and weeds her "gardens" too?

Our last stop in Australia was the capital of Queensland - Brisbane. Our hotel fronted on the botanical gardens and a sobering item in our lobby was a metal marker on the wall, nose high, which indicated the heighth of the flood waters of a year-and-a-half ago. Members of the Brisbane Branch of the Malacological Society of Australia, including Thora Whitehead and Dale Mellinger (a transplanted Yank), stopped by to "talk shells". Shopping in the city and a tour to Lone Pine Sanctuary filled our time in Brisbane. At Lone Pine we had one amusing incident. Karin came up to me and asked that I come look at a sick bird in one of the cages and to find an attendant to help the poor thing. The bird did indeed appear to be on his "last legs"; he staggered about, falling over and looking dazed. I found an attendant and as soon as I started to describe the situation she laughed and said that we need not worry, that bird was reported as dieing every day. It seems that the avocation of this bird is to go about its cage in circles until it becomes too dizzy to stand, it falls over in a faint, struggles to its feet several times, finally regaining them and then starts circling again!

Our group broke up in Brisbane. Corinne, Lillian, Kathy, Bob, Bill and I headed south to Sydney where we would change planes for our flights home. Kirk and the others headed to New Zealand and then on to Tahiti to continue shelling and exploring. Maybe one of them will write a follow-up on that portion of our tour. I'd ask Kirk to do so, but he's just left for West Africa to scout the area for a tour there in 1977.

Maybe you'll be along on that one!

## EPILOGUE

We've been home for some time now and everyone has received those packages of shells they shipped home. Kathy sent m ore than fifteen and nearly everyone else sent at least one or two. That was one way to overcome the major problem on traveling and shelling - the smelly shells. Ship them home wrpaaed in double zip-loc bags and worry about the smell when they get home after you return, at least at home you usually have the facilities to take care of them. Your postman will get to know you better too - at least this mail won't be too delayed! Many of us have given talks about the trip - I've given five so far, and at least four of us are planning on making the trip again in 1976. I keep thinking maybe I'll get my shells cleaned and labelled before I leave for Australia again!

## FROM THE EDITOR'S DESK

Continued from page 202

have a number of problems with customers too! And the proposed association will allow the members to relay to one another information on problem customers. One need not think too deeply to understand the request by dealers for advance payment from new customers.

I will be interested in comments on "Sounding Off" from both customers and dealers and will try to put together another column if the response warrants.

Maybe we can have a "sounding off" column in each issue on something that "bugs" you. Maybe someone can do something on the value (or lack of value) of belonging to a shell club.

I have had a few comments on why I'm taking up so much space with the two lists we're currently running. If you'll look closely you'll note that we usually run a 48-page issue, but the current one is a total of 72 pages. The two lists take up a total of 28 pages. 48 + 28 equals 76, so we're actually taking up only four pages with the lists! And we'll run them in our next issue, along with an expanded issue to compensate for that.

You have probably been reading about the increase of postal rates (again!). Please check the subscription blank stappled into this issue for the new rates on First Class and Air Mail subscriptions.

Also we must announce that we can n o longer accept International Postal Money Orders in payment. It takes up to three months for these to arrive and often when they do the i nformation on them is incorrect. It is actually less expensive for you to have your bank give you a draft on their U.S. account in the amount you need to send for your subscription.

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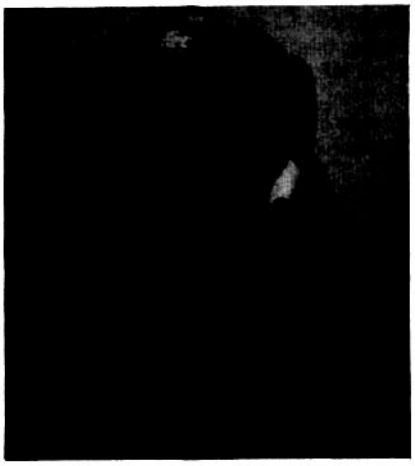
# RARE MEXICAN CONES

Conus bartschi Hanna & Strong, 1949

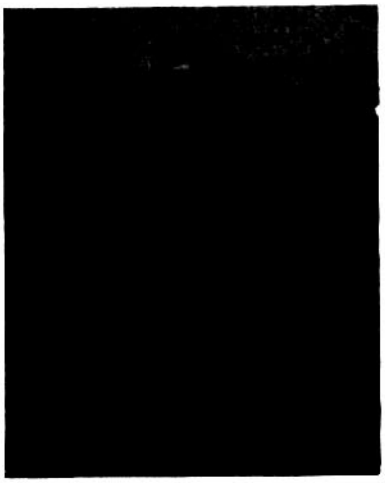
Live taken in 45-50 feet of water on a rock sand bottom at San Pedro Island, Sonora Mexico. Collected by Jim Cordy. July 9, 1975.

Specimen to right: live taken in 50-60 feet of water on a sand/coarse gravel bottom in the channel between Isla Candelero and Isla Del Medio, Sonora, Mexico. Collected by Jim Cordy; July 13, 1975



Conus vittatus Hwass, 1792

Live taken in 40-45 feet of water near San Nicolas Island, Sonora, Mexico. Collected by Jim Cordy; July 16, 1975.



Conus orion Broderip, 1833

Live taken in 50-55 feet of water near Isla Candelero, Sonora, Mexico. Collected by Jim Cordy; July 15, 1975

Actual size of specimens is as follows:

C. bartschi (left): 47mm
C. bartschi (right): 43mm
C. vittatus: 47mm
C. orion: 37mm

Photographs taken by DAVID SCHROEDER
Lompoc, California

# Two Fossils

Some Tertiary Mollusks From South Florida and the Caribbean by Dr. Axel A. Olsson, of Coral Gables, Florida and author of many books on both Recent and fossil shells, was published in March of 1967. In the introduction the author states his indebtedness to many friends (Hunter, McGinty, Hoerle, Nelson, Donovan) for use of material and further writes: "For other species described herein and the donation of many interesting specimens, to Mrs. Ellen Crovo and Lt. Col. Corinne E. Edwards, both enthusiastic fossil and Recent shell (and mollusk) collectors."

Genus OLIVA Bruguiere, 1789
Oliva (Oliva) edwardsi Olsson, 1966*
(see illus. OS&S Spring 1963, pg. 28)

This shell is medium in size, stout, heavy, usually with a dark grayish black color and a high surface gloss. The body whorl is convex, elliptical, widest a little above the middle, the anterior end appearing decidedly narrow and short. Spire is low, conic and formed of about seven whorls, including the nuclear of three smooth turns. The sutures are narrowly channelled, their outer edge sharp, but not flaring as in Oliva sayana Ravenel. A light colored, sometimes white, band bordered the outer side of the nearly straight lip, forming a wider band within and continued forward around the larger siphonal notch. Length 44mm., diameter 10.4mm. Holotype is in the United States National Museum #645166. This is a well-marked species common at the shell pit at

Continued pg. 216, bottom column one

*Editor's note: specific name should be spelled edwardsae since the species is named for a lady and thus should have the female ending ae.

# More Maldive Notes

By RODNEY JONKLAAS *

When I re-visited the Maldives in August/September this year it was just after an Italian team had left, after having hunted without much success for Cypraea leucodon and other rarities. The results of their 11-day hunt with aqualungs and even dredged were surprisingly poor.

I was luckier, however, as I had the opportunity of travelling to islands further north and also having time to spend hunting in the shell shops and questioning the local collectors.

Thanks to the keen eyesight and superior knowledge of Cypraea of my client Mr. Gordon Verhoef of Cape Town, South Africa, I was able to acquire a few very fine, live specimens of Cypraea owenii Sowerby, which I had - for a few years (!!) - ignored, as I imagined them to be immature stolida or poraria! Cypraea collectors - you can now emphatically consider the Maldives as being within the range of owenii. No question about it.

A more pleasant surprise. Jerry Walls was astounded that I thought the Maldivian variety of Conus barthelemyi Bern. was C. maldivus Hwass! The Maldivian barthelemyi, as you may observe from my photographs is quite different from the typical, lovely Mauritius form. Some of the Maldivian specimens with more intense markings could even be lovlier, but the majority are almost wholly white or sparsely marked with deep purple/black. I am now quite willing to swap a pair of these for a pair of real maldivus which I don't have!

One reason why the most (and best) shells turn up in the shell shops of Male is because of the intensive gathering of live coral for building, which has its centre in Male. We found vast quantities of coral piled up for auction by the harbour. And falling out of them were, of course, molluscan treasures like Cypraea stolida Linné and others.

The shells offered to us by less sophisticated natives of other islands were, surprisingly, meagre - and, in the case of favourites like Cassis rufa Linné, ridiculously priced.

While diving for shells we came up with a lot of the common species, and a few fine rust coloured Cypraea tigris Linné from off shipwrecks. Gordon Verhoef collected what may be a new Volva from a hydroid growing on the roof of a cave some 200 feet down.

I was overjoyed to collect the rare Murex steeriae Reeve, together with M. palmarosae Sowerby and an occasional Murex torrefactus Sowerby. You just have to know where to look and then you are on! The nicest Murex live in smooth coral crevices or clefts in the larger madrepore heads and in surprisingly shallow water on the semi-exposed sides of the islands.

So now add the location of Murex steeriae Reeve to this amazing group of islands, and thanks to Jo Kotora of Florida for identifying this shell for me!

* Ja-Ela, Sri Lanka

CONTINUED FROM PAGE 215

Belle Glade. The species is remarkable for its constancy in shape, general blackish color and high surface luster. Traces of the color pattern are seen on some specimens in the form of broad bands without reticulation.

Oliva edwardsi Olsson, 1966 is named for Lt. Col. Corinne E. Edwards, President of the Miami Malacological Society and an Editor of the SEAFARI staff of the Palm Beach County Shell Club. Colonel Edwards is a dedicated collector of fossil shells and Recent mollusks.

Genus PUSULA Jousseaume, 1884
Pusula (Pusula) crovoae Olsson, 1966

The shell is large, white, with a high, inflated, convex dorsum, sulcated by a wide, excavated, smooth furrow for its whole length and bordered by small nodes at the several ends of the transverse riblets. Mature specimens have the sides encircled by a narrow, inflated zone, set apart by a sharp angle or impressed upper border. The base is flattened to impressed on the body side, the lip narrower and rounded, both sculptured by 15 or 16 narrow riblets continuous with the primary ones on the sides. On the body side, the ribs penetrate into the interior crossing in strength the excavated zone of the fossula. Ribs are simple and continuous from the dorsal furrow onto the base except for a few short ones intercalated between the main ones on the sides. Length 20.4mm., diameter 15.2mm., height 13mm. Holotype is in the United States National Museum #645174.

Pusula crovoae Olsson, 1966, is a common and characteristic species in the Pinecrest Beds at its type area and is named herein for Mrs. Ellen Crovo of Miami, a skillful and dedicated collector of fossils and Recent mollusks. (See cover this issue for illustration.)

## ALLIGATOR ALLEY - 1966

Continued from page 253

but we were not unhappy, for we have often wondered about fossil shelling out there and now we knew.

They are not digging a 25-foot deep drainage canal, but just building a road, unofficially christened "Alligator Alley" and they are getting their material, wide and shallow, on both sides of this potential race track. Maybe there are fossil shells on the Naples end or already buried - who knows??
(Later,- we did find fossils there!)

# Cleaning Notes

By HOMER J. RHODE *

First of all, I would like to make it perfectly clear (I hear you Richard) that I am not an expert on cleaning shells. However, it seems that most shell collectors learn to clean shells by trial and error and have their own favorite ways to clean certain shells.

Helmet shells are undoubtedly one of the toughest shells to clean. I have skinned more knuckles and spouted more profanity while trying to clean helmets than any other shell. My early sad experiences in "trying" to clean helmet shells prompted some experimentation to come up with an easier method of cleaning them. My wife didn't appreciate my remark that helmet shells were more stubborn than she was! Quite frankly I have experienced poor results in cleaning helmets by the refrigeration and by the "freeze, thaw and pound" methods.

I have read several articles that mention "alternate" methods of processing certain shells without really explaining how to do it. One of the methods occasionally mentioned for hard-to-clean shells is soaking them in a solution of Pine-Sol. However, little detail such as what strength, how long to treat the shells, what precautions to take, etc. are usually left unanswered.

The purpose of this article is to advocate pine oil (somewhat cheaper than Pine-Sol) as the main method of cleaning helmet shells and secondly to explain how to use it as a practical method.

The directions are as follows: freeze the helmet shell for 48 hours (not absolutely necessary), cut off the operculum with a sharp knife, soak the shell (cover completely) in a 50/50 mixture of commercial pine oil and water for seven to ten days depending on the size of the shell, then flush the animal out with a jet of water from a garden hose. The pine oil seems to eat the membrane or tissue that attached the animal to the shell. I have experienced no damage at all to the shells using this cleaning method. A word of caution though, the soaking container should be tightly covered or else everything around the container will begin to smell like pine oil.

This method of cleaning shells also works well on Conus, Terebra or other shells that you may find hard to clean. Some of the obvious disadvantages include the cost of pine oil (much more expensive than alcohol), the time a shell must soak in it, and the odor (although not too objectionable). However, if you are a frustrated helmet shell cleaner, it may be worth your while to try this method.

* Rockledge, Florida


By Neil M. Hepler

For a little diversion in your hectic life of rush-rush, try a little snail raising. We are nursing some specimens of Subulina octona (Bruguiere) - one of the introduced species in Florida. We found these small land snails under a flat rock in Boca Raton, Florida. Taking them home, we placed them in a plastic box for observation and after a week or so noticed that five small light-yellow eggs could be seen through the body whorl of two of the adults. These two specimens were placed in a separate container (maternity ward) on March 31, 1972 at 8:45 PM. One of these adults laid five eggs and at 11:00 PM on the same date, the little animals emerged from the eggs. Animal and shell measured 1½mm. Placed these small fry in a smaller container (nursery), keeping all specimens in slightly moist soil with plenty of lettuce for food. April 1, 1972, small fry eating and doing fine. And they grew to an astounding length of 2mm.

And so the story could go on and on. I must say one thing - if you are interested in a quiet and interesting hobby, I would recommend raising land snails.

# SUMMER OF '74

By BETTY JEAN PIECH *

For me the lure of shells is the fun and excitement of finding them. Even when the pickings are lean, I keep on, secure in the knowledge that under the next rock, around the next bend of the beach, on the next low tide will be something I have long been looking for or some completely unexpected surprise. The summer of '74 is a good case in point.

By way of background, several years ago we purchased a summer cottage on the Chickahominy River, about fifteen miles from Williamsburg, Virginia. The river is fresh water, but tidal as it flows into the James River which in turn empties into Chesapeake Bay. Visability is very poor as the water is tannish - due, no doubt to the cypress trees which border its banks and drop their needles into the water. In addition, although a little sand borders the edges, the bottom is mainly soft mud easily stirred up by feet or waves.

Having never considered freshwater mollusks particularly exciting (tropical marine mollusks were my "thing"), I looked half-heartedly for shells for the first time we went down for a stay. I found a few single valves of Rangia cuneata (Sowerby), an unattractive and non-descript mollusk. Later I found some marine clams and oysters which aroused my interest until I discovered they were the remains of an outdoor picnic a neighbor had tossed in the river. That was all. So I abandoned shelling and enjoyed the swimming, fishing and boating and laid in the sun, planning my next trip to distant beaches.

In June of 1974 I mentioned to Dr. R. Tucker Abbott, Assistant Director of the Delaware Museum of Natural History, where I was going for the summer, and he said, "Look and see if there are any Corbicula manilensis in your river." "Any what?", I said. "Any Corbicula manilensis", he replied. And he showed me one and explained. This clam had been introduced in 1938 from eastern Asia and had multiplied and spread with remarkable speed to many parts of the United States. They clog canals, pipes and pumps. Accidentally mixed with river-bed gravel, the shells ruin cement foundations. They are good bait for catfish and stripers and, in California, 1,100 tons were sold to fishermen from 1963-1968. Tourists and fishermen spread the clam to new areas. In 1969 Corbicula shells were three feet deep in some California irrigation ditches. It took 45 days to remove 50,000 cubic yards of clam shells. Young clams may exist at a density of 5,000 individuals per square foot.

So off I went to Virginia and the very first low tide revealed numerous small dead bivalves that looked like Corbicula. Not being positive, I wrapped one carefully in toilet paper (what shell collector could manage without toilet paper!) and mailed it to the Museum. The answer came back - yes, this was what they were interested in. Would I please collect all the dead ones I could find for an exhibit and, if possible, some live specimens to be put in alcohol. I went to work. Every low tide I combed our 75-foot water frontage picking up 20 to 30 dead pairs. My box of shells grew with amazing speed. But where were the live ones? I poked and probed every little bump and hole that was exposed at low tide, but without success. The visability was so poor that searching in the water was useless, unless by happy chance you stepped on one - which I never did. By midsummer I had a great quantity of dead pairs - but that was all.

Then one day, about the first of August, I had an idea. Taking a tea strainer and a large spoon, I filled the strainer at the water's edge with muddy sand and then rinsed it out. And there remained a half dozen tiny Corbicula, the largest about 5mm. I continued until I had 25 or so to put in alcohol. At last I had something, but where were the mature ones?

Early one morning in late August, about three days before we were due to leave, I looked out and viewed the river in amazement. It looked as if it was being drained. Some combination of moon and sun, plus wind, had created a phenomenally low tide. Where we usually had about ten feet of beach exposed beyond the bulkhead, we now had about 100, and the water line was still dropping (it eventually went to about 150 feet). Now surely I would find some large live Corbicula.

Armed with a bucket and high hopes, I started exploring the exposed bottom. My husband joined me. Although not a shell collector, he is a research chemist with an inquiring scientific mind, plus he has patiently listened to me shell chatter for years and so has picked up quite a bit of knowledge regarding mollusks. Together we combed our section of waterfront and found nothing. So he abandoned the hunt and started clearing the newly exposed area of pieces of wood, some discarded bottles half buried in the mud, etc. But I was determined. Now being able to walk under adjoining docks with no problem, I extended my area of operation and continued my search.

I shortly found several live Rangia. While not particularly enthusiastic, I dropped a couple in my bucket so it would not look so empty. Then I saw a large trail and at a distance of about 12 feet found a dark, undistinguished-

Continued column 1, page 218

*Wilmington, Delaware

# Jacksonville '75

By GARY D. GORDON

Mr. & Mrs. Herbert Kapp

Henry Close (left), Dr. & Mrs. Roland F. Zeigler

Mr. and Mrs. Archie Jones

It was a lovely central Georgia day - July 26, 1975. It was also the first day of the Jacksonville Shell Club's shell show in Florida. I was home in Warner Robins, Georgia, doing the normal things expected of an average suburbanite: like cleaning shells, looking through dredged material and other average things. I had no intentions of going to this shell show (a stupid mistake). I would go next year for sure.

About that time the phone rang. It was Henry Close. Henry had opened a shell shop in Atlanta last year and he said that he and Woody Pritchett were going to the Jacksonville Show on Sunday, the last day of the show. Woody wanted to look at the shell art and Henry planned on selling some shells from his shop. By the time Henry reminded me of the lovely beaches of Jacksonville and the good places to eat seafood, etc. I soon agreed to go along. I invited both of them to come on down and spend the night at my home so we could get an early start the following morning.

We had a wonderful evening looking at my shells and swapping shell adventure stories. The next morning, on our way, I told Woody and Henry that I was going to try out an idea. I was going to try to get pictures of the average shell collector, rather than the shells. I have found that shell collectors are fantastic people and their personalities show in their sparkling eyes and beautiful smiles. (What great photos they will make!)

We were soon at the show and I ran into a good friend, Bonnie Holiman. Bonnie, as always, was bubbling over with excitement about shells and seeing old friends. After we finished with our greetings, I learned that Dr. Abbott and other prominent guests had left only minutes before we arrived. I decided that this was o.k. as I wanted to get photographs of the average shell collector anyway.

Henry had set up "shop" in the parking lot and I found it a great opportunity to photograph people as they came out to look at his shells. There seemed no end to the friendly people. One very nice couple turned out to be Dr. and Mrs. R. F. Zeigler (author of "Olive Shells of the World").

The next couple I talked to was Mr. and Mrs. Archie Jones, of Florida tree snail fame. His display in the show was fantastic; tree snails, of course. Talk about interesting tree snail stories, this gentleman can tell them.

Mills B. Lane was too fast for the camera. I did get to talk to him for a moment - about fossils of Georgia and the trip he and his lovely wife took around the world. Several other interesting people slipped by me before I could get a photograph.

The displays in the show were superb. I took down the names of several shells that caught my eye, and that I'd love to obtain, such as Strombus oldi, Festilyria festiva and Conus genulous. The displays showed real imagination and lots of hard work. I did notice that one of my favorite shells, Nerites, were not too well represented. So I said to myself, "Self, send a nice display of Nerites down here for the 1976 show".

Photographs by the author.

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SUMMER OF '74 - Continued from pg. 217

looking bivalve, about 8 cm, but very different from Rangia. Into the bucket it went. I shortly found another very similar one, but almost twice the size. Were they juvenile and adult, or two different species? Now they seemed to be popping up in considerable numbers and before long my bucket held a dozen or so of both the large and small ones. But by now the tide had turned and I was about ¼ mile down river. I started back, interested and curious to examine what I had found, but disappointed because not a single Corbicula had gone into my bucket.

Arriving back at our dock, I stopped to admire what a nice job my husband had done of cleaning up the area in front of our bulkhead. He grinned at me and said, "Hold out your hand", and I knew before I looked what he was going to drop into it. "How did you find it?" I said in amazement. "Where did you find it? Was it exposed? Was it buried in the mud?" "Well", he said, "You won't believe this, but there was this old rusty beer can out there in the mud and before I threw it up on the trash pile I rinsed it out. And when it was clean there was something rattling around inside. I was curious to know what, so I got a can opener and inside was this Corbicula!" I was speechless.

Taking my treasure up to the house, the Corbicula (3 cm.) was put in a vial of alcohol and the contents of the bucket put on to simmer. When the cooking was finished and the shells cleaned I was delighted. In addition to the Rangia there were definitely two species, although it took a trip to the Delaware Museum to identify them as Anodonta grandis Say (the larger one) and Elliptio complanata (Lightfoot) (the smaller one). They both had a lovely nacreous interior. Anodonta was varying shades of white, pale tan and pink. Elliptio was a real beauty with some specimens being white, some lavender, some pale pink and some a real deep pink.

The summer of '74 had been a good summer. I had found not only the long-sought-after, but also the unexpected. Specimens of Rangia, Anodonta and Elliptio, plus the pile of dead Corbicula, the small specimens, and the one larger one, were given to the Museum. My only regret was in not being able to put the latter in my own collection. It would have been such fun to have a label which read as follows: Corbicula manilensis Philippi; location - Chickahominy River, James City County, Virginia; habitat - Schlitz Beer Can.

# Notes on Neptunes

By ROBERT R. TALMADGE *

"Chrysodomus liratus Martyn" from Oldroyd, Marine Shells of the West Coast of North America, Vol. 2 (1), Pl. 11, fig. 1. "Refigured type figure, reduced one-half", (fig. 63mm)

Neptunea lirata lirata Gmelin

Left: taken in 25+ fathoms off Kachamak Bay, Cook Inlet, Alaska.

Right: intertidal, head of Kachamak Bay, Cook Inlet, Alaska.

Collector: Rae Baxter
Specimens in Talmadge Collection
Photographs by the author.

Neptunea lirata altispira Gabb, 1866

Taken in 400+ fathoms off Eureka, California. Bottom of hard mud. Recent. Original a Pliocene specimen, Wildcat formation.

Recently I received a series of unsorted specimens of Neptunea lirata lirata (Gmelin, 1790), consisting of both adult and juvenile shells. Although these were all collected in the same generalized geographical locality, they came from two rather diverse habitats: one the bottom of a bay and the other from the rocky shoreline of the same bay. The two lots exhibited measureable, as well as visual, shell differences.

One set of shells was obtained from the floor of Kachamak Bay, an inlet off Cooks Inlet, Alaska. The substrate was a gravely hard mud, and the specimens were collected at a depth of about 25 fathoms (46 meters). These specimens fit into populations studied from other areas near the mouth of Cook Inlet, and fit rather closely to the original figure in Martyn's nonbinomial Universal Conchologist, which Gmelin utilized for a figure.

The second lot came from the rocky shore of the same bay, where they are found depositing their egg clusters on the rocky shoreline in the intertidal levels. These specimens were much broader in comparison with shells taken on the floor of the bay, and were easily separated by sight alone.

A comparison was made, and it was found that the average subtidal specimen had a length of 100mm, the body whorl a diameter of 54mm and the penultimate whorl a diameter of 30mm. In contrast the intertidal shells had a length of 100mm, the body whorl had a diameter of 60mm, and the penultimate whorl a diameter of 38mm.

Intertidal specimens belonging to the genus Neptunea are far from common, but a few have been taken at Boothbay, Maine (Neptunea lyrata decomcostata (Say, 1826)). At the Wash, in Essex, a combination of upwellings and storm seas have brought living Neptunea antigua (Linnaeus, 1758) onto the sands. There are several records along our New England and eastern Canadian coasts, where lobster traps have been cleaned and small localized populations of N. l. decomcostata have been found alive at the docks and immediate areas.

Acknowledgement

At this time I would like to express my sincere appreciation to an old friend and fellow biologist, Mr. Rae Baxter of Alaska, who has aided my studies of the Neotunids by furnishing both specimen material and data from his field experiences.

*Eureka, California

## FROM THE EDITOR'S DESK

Continued from page 214

We are continually in need of more material to print. So sit down and write us about your latest shelling trip. Or that favorite shell of yours. Without your articles the magazine just has to get smaller - and neither of us wants that!

Again thanks for your help and encouragement in 1975 and I hope you'll all be with us at the end of Bicentennial 1976.

A sobering thought, our next issue will be our Twenty-fifth!

Tom Rice, Editor

# NEW EXHIBIT

**Mankind's ubiquitous use of mollusks and their shells portrayed in unusual new hall opening at American Museum December 12, 1975; this major exhibition is first of its kind in the United States.**

"Mollusks and Mankind", a major new hall that opens at The American Museum of Natural History on Dec. 12, will have something for everyone: gourmets, shell collectors, art and archaeology buffs, and naturalists, to name just a few. Covering the many uses of mollusks and their shells by past and present cultures around the world, the permanent hall includes sections on the mollusks we eat and wear, on those that appear in our art and as religious symbols, on the mollusk shells that we use for utensils and money, and on mollusks as living species, outnumbered only by insects.

Such a comprehensive approach to a single subject -- mollusks -- is a new one for the Museum, which put an unusual combination of designers, malacologists and anthropologists to work on creating the new hall. The first exhibition of its kind in the U.S., its goal is to depict the important relationship that has existed for millennia between these abundant animals and human societies.

"Mollusks and Mankind" employs a variety of modern exhibition techniques to tell its story. Close to the main entrance, for example, there is a section on the biology of mollusks, the first time that this subject has been treated so extensively in a museum exhibition. It includes a continuously-running analog computer film on the mathematical patterns of shell growth as well as models and scanning electron microscope photographs depicting shell structures and how they form.

In the ethnological section of the hall, a prehistoric shell midden has been recreated. Such middens, or garbage heaps of discarded shells, give archaeologists clues about how mollusks were used by ancient people. They reveal dietetic importance of various species, and also indicate changes in climate and other physical conditions, and in patterns of behavior and settlement.

The ethnology section also includes a display of mollusk specialities (replicas), such as fried octopus, that are popular in various countries. Some of the special containers or plates in which they are served are shown, and to give visitors an idea of the variety of edible mollusks to be found around the world, there is a display of actual shells from different regions.

Shells have been used extensively by human cultures throughout history as items of beauty and as emblems of status in religious and ceremonial rituals. Numerous examples are shown in the hall, ranging from a Manus canoe prow decorated with shells that was reserved for use by noble families and was collected by Dr. Margaret Mead, to a magnificent ceremonial mask of cowrie shells and leopard skin worn by the Kuba kings of Zaire when they assumed royal power.

High above the part of the hall devoted to the use of shells and shell forms in art hang four colorful copies of heraldic banners -- one Japanese and three Medieval European -- which carry shell designs. Nearby, another continuously-running show presents slides of art through the centuries. Divided into several sections, it traces the use of shells as the material for making art objects and as subjects for the painter. The slide show also traces themes in art, for example, the frequent appearance of Venus emerging from a scallop shell on ancient Greek vases, in Renaissance paintings and in the work of such contemporary artists as Matisse.

One of the best examples in the hall of the shell in art is an original sculpture by Henry Moore. It depicts a woman with a skirt made from a cast of an oyster shell and was donated by the artist to the Museum expressly for "Mollusks and Mankind". Modeled in plaster, it was used to make nine bronze casts, all of which are now in the hands of collectors.

"The Taste for Shells" deals with shells as a decorative motif. It includes such unusual items as a scallop-shaped Renaissance watch, a carved ivory figure from Japan of a man dragging an enormous conch behind him, and a replica of an ancient Egyptian gold cowrie. Many of the items included in this section have been provided by the Metropolitan Museum of Art and other New York City museums.

The mollusks which are the source of all this artistic and utilitarian diversity are not only varied, but abundant and widespread. They include the snails, the bivalves, the cephalopods (such as the octopuses, which are shell-less mollusks), the chitons, the scaphopods or tusk shells and two rarely-seen groups. There are about 50,000 to 80,000 species of living mollusks; another 55,000 or so known species are extinct.

Although they often look like simple animals when compared to vertebrates, the mollusks make up one of the most advanced groups of invertebrates; most of them have a brain, a two-chambered heart and a complicated digestive system. They are also one of the oldest living groups: their ancestors first appeared early in the Cambrian Period, about 600 million years ago. Today they occupy marine and fresh water, as well as land.

The shells or limy exoskeletons which most mollusks possess serve as a protective covering for the soft-bodied animal inside. Shells are also one of the most popularly collected items in the world. In the United States today, for example, shell collecting is probably the second most popular collecting hobby (after stamp collecting), according to Dr. William K. Emerson, a curator of Fossil and Living Invertebrates at the Museum who is supervising the preparation of "Mollusks and Mankind".

The new hall is located on the Museum's first floor just off the 77th Street entrance, a prime visitor traffic area. It is expected to attract between two and three million visitors a year. Work on the new area, which covers a total of 2,000 square feet of floor space, began in 1971 and is now nearing completion. The cost of the hall, including construction and installation of exhibits, is estimated at $340,000. The project was supported by grants from the National Endowment for the Arts, the New York State Council on the Arts, The Edna McConnell Clark Foundation, the Charles A. Dana Foundation, Inc. and other private donors.

There is an admission fee to the Museum; the amount is discretionary.

## COMMENTS ON COUSTEAU

Continued from page 202

As a marine biologist whose whole life is involved with the sea, I am personally concerned with properly managing and protecting marine life. I am very much in favor of Captain Cousteau's efforts to promote interest in the sea and marine conservation generally, but when he makes specific recommendations on conservation legislation he is entering an area in which he is qualified neither by training nor experience. Unfortunately, because of his popular image, his opinion is likely to carry more weight than it deserves.

Such legislation is nothing more than an attempt to stop other people from doing what we are not interested in doing ourselves, either out of a sense of self-righteousness or so that what we wish to do has no interference or competition. Thus sport fishermen want to stop commercial fishing, line-fishermen want to ban spearfishing, and naturalists want to prohibit anyone from taking anything.

If Captain Cousteau really desires to have a beneficial effect in California, he can use his influence to call upon the large marine science community there to draw up recommendations for legislation to manage marine resources in a biologically and socially sound manner.

Moving? Send us your new address as soon as you know it!

# World's Rarest Chiton

By R. A. WHITNEY *

*Decatur, Illinois

Each story must have a beginning and perhaps the best place to begin the following story is to give my definition of rare. A rare item is something that is highly esteemed due to scarcity. Many people link rarity and high price together, but this is not necessarily so, for generally speaking the high priced items are readily available if (with emphasis on if) one has the money to buy them. For example, the Golden Cowry (Cypraea aurantium) will sell from $100 to $500 (depending upon condition) due to their popularity and demand, but they are readily available if (here's that magic word, if) one has the money to purchase them. I have no doubt you can readily buy a dozen -- if you can afford them! Not so, with a truly rare shell. It might not have a monetary value of more than a few dollars, but it would be impossible to find a specimen except by the most dilligent searching due to its scarcity.

The scarcity could be caused by infrequency of occurrence (such as an albino shell) or difficulty in obtaining due to location. The location might be the depth of the water, or the virtual inaccessibility of the locale. A good example of rarity caused by depth is the Class Monoplacophora. These rare shells are dredged from depths of 2,700 to 5,700 meters or one to four miles deep! No wonder one doesn't see them listed on dealers' lists!

The shell I am writing about did not come from such extreme depths, but it did come from the world's most inaccessible location, coupled with a set of circumstances stranger than fiction. Nine years were spent in obtaining this chiton -- so I do feel justified in calling this shell the WORLD'S RAREST CHITON.

In order to call anything the world's largest, the world's smallest, the world's most inaccesible location, etc. one must have confirmation on this. So, in this case, for confirmation I list the Guiness World Book of Records, as stating that the place they consider to be the most remote spot on earth, is Tristan da Cunha.

To convey the bleakness, the remoteness, the utter difficulty in collecting shells of any type from this locale, perhaps the place to start with would be a brief history of the world's most inaccessible spot: the island of Tristan da Cunha. Tristan da Cunha was discovered in 1506 by a Portuguese admiral, Tristao d'Acunha, who gave it its name and handed it back to the seals and seabirds. For two centuries it remained uninhabited, only to be occupied by three renegade pirates in 1810, and two of these died before the next inhabitants arrived. These people were from shipwrecks, and the male population always has exceeded the distaff side.

In order to locate this spot on the map, one should draw a line from its nearest inhabited neighbors. A line drawn from Cape Town, South Africa to Montevideo, Uruguay would pass just a little north of Tristan. It is virtually half way between the two places, being 1,500 miles west of the Cape of Good Hope and 1,800 miles east of the coast of Uruguay. These two places, plus the island of St. Helena (Napolean's Isle of exile) which lies 1,200 miles north, are Tristan's nearest inhabited neighbors. This, coupled with the fact that Tristan lies almost on the fortieth parallel of latitude (the infamous furious forties), make Tristan da Cunha the A-1 contender for Guiness' proclamation of the most remote spot on earth.

Its closest neighbors are two small islets, Inaccessible Island and Nightengale Island, about twenty miles away; and Gough Island, two hundred and fifty miles to the south. The first two are mere specks and all three are uninhabited except for the thousands of sea birds that make these islands their rookery. Tristan itself covers only thirty square miles as it is just four miles in diameter and is mainly an "extinct" volcano rising 6,700 feet above the sea. The only settlement is a few feet on the northwest coast, and the villagers lives consist of spinning wool, fishing and harvesting the only crop planted: potatoes. A humdrum existence broken by the Sunday Church and the annual event of shooting the hundreds of rats that occupy the potato fields. The workday of the Tristaners consists of digging potatoes, and when one asks what they do when not spading, they reply, "Oh, puttin' in' -- potatoes of course". Apart from that, and an occasional trip to one of the neighboring uninhabited islands for collecting guano or penguin's eggs (to be fried in penguin oil), and the occasional gathering of driftwood, there is little else to do. Fishing is carried on when the ocean is calm enough to make the venture, but then they must brave the turbulent water and surf that pounds against the narrow shelf of land along the rocky coast. There are no beaches such as we know, only breaks in the rocky coast that enable the Tristaners to launch their dinghys, if utmost care is used.

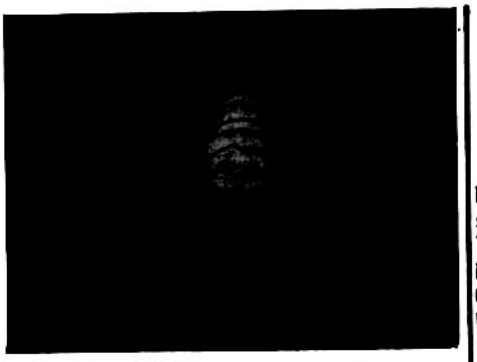
This then was the life of the Tristaner, and few people knew of their existence until the fateful day of October 10, 1961, when the "extinct" volcano that occupied 80% of the island began seething and erupting its liquid fire in the form of lava, running down the various gullies and, finally, inundating the potato fields. Only after the lava reached the foot of their one settlement did the Tristaners send a wireless for help in the evacuation of their people. Their saga is amply told in the National Geographic of May, 1962.

The author would like to interrupt this story, and can not emphasize too greatly the reading of two books: Rock of Exile by D. M. Body, which tells the story of the Tristaners before the volcanic eruption, and the aforementioned article in National Geographic. A further article in National Geographic (January, 1964) deals with the return of the Tristaners. The ship M. V. Boissevain, brought back 51 people who wished to leave the 'civilization' they had while in exile, and return to their primitive way of life.

Here the second chapter of this tale, that is stranger than fiction unveils itself. An article appeared in an A.P. dispatch telling of the Tristaners return, their flight against the horde of rats that awaited them, and their reestablishment of their colony. The families returning consisted of only seven surnames (due to so much intermarriage) and the perils that faced them were comparable to those faced by the early African explorers or those who won the West. The daily newspapers told of their valiant journey, and it was here that a link was formed in a chain of events that would eventually bring the world's rarest chiton to the United States.

A picture appeared in a U.S. newspaper of a young native girl who was returning to Tristan da Cunha, and the dreary life that faced her. A reader in Oregon saw the girl's picture, and thus began a penpal relationship that has lasted nine years.

During this time the Oregon friend sent some clothing and a few necessities of life (as we know them) to help ease the lonliness of her native friend. In return, the Tristan girl desired to send a gift in return. But what? Whatever



was chosen would have to be non perishable, and their only commodities were potatoes and crayfish! Our Oregon friend inquired if it would be possible to send some seashells? The Tristan girl sent a box of shells (taking over six months to arrive) consisting of a few broken bits of bivalves that had been "beach" collected from what the raging surf had washed ashore. But there were no whole shells other than a few that clung to the rocks that were pounded incessantly by the raging surf. These consisted of one species, Argobuccinum proditor tristanensis Gray; found only on Tristan da Cunha and neighboring Gough Island. The author has two of these in his collection, obtained after much bartering.

The native girl did mention another "shell" that was covering the rocks, and from her description our mutual Oregon friend decided it must be a chiton. Each letter written took a minimum of six months each way, so it was a slow and painful process to nuture the Tristaner in how to collect and send the chitons. The native girl must be taught how to pry them from the rocks (in the pounding seas), how to fasten them to wooden slabs and, finally, how to preserve them in alcohol. An easy job except for two major points. First, the only wood available was the drift wood that washed up on the rocks, and, secondly, there wasn't such a thing as alcohol. As alcohol could not be sent down to the Tristaner through the mails, a compromise was made, and the collected chitons were "pickled" in the boiled oil of penguins that were strangled. This oil is used as cooking fat and to burn in the Tristaner's lamps. Finally, after 9 years of negotiating, our mutual Oregon friend received her chitons. A sorry lot of curled shells, reeking in the heavy penguin oil.

It was at this point that the author became acquainted with the Oregonian, and after trading some shells of little import, she casually mentioned that she had some chitons from Tristan da Cunha, but they weren't pretty! Enough said, and after a bit of "horse trading" the author had all nine of the chitons she had left. Much patience was needed in cleaning them, resoaking in alcohol and glycerin, and finally they looked presentable. A suite of them was sent to Glenn and Laura Burghardt, authors of "West Coast Chitons" and in turn for giving them a couple of the chitons they were researched and identified as Plaxiphora simplex Carpenter. (photos by the author)

# Colossal Battle

By GARY S. MANGIACOPRA *

In my previous article for Of Sea and Shore, in which I had cited the discovery of a new species of giant octopus (OS&S 6:1, Spring 1975, page 3), I had referred briefly to an incident which had occurred off the coast of Chile, near the island of Chiloe, involving a battle between a sperm whale and a 30-foot octopus.

I had only recently, through the courtesy of Dr. Bernard Heuvelmans - noted researcher of as yet undiscovered animals - obtained a copy of the original Le Chasseur Francais article, which was briefly summarized in the book The World Beneath The Waves.

I had requoted this summary as a possible sighting of a Pacific species of Octopus giganteus, which in view of the information from the original article I may have wrongly credited this incident as involving an octopus.

The author of the Le Chasseur Francais article, Captain Max-P. Robin, relates that he was at his chart table calculating his position, when he was informed by a lookout of a dark object that was sighted. The boject was identified as a sperm whale, which appeared dead or dormant.

The Captain arrived by the broadside of the whale, where he noted scars caused by numerous battles with giant cephalopods. Captain Robin then proceeded at a distance of 165 feet, to use the sperm whale as a target for his 16 caliber gun. A ball penetrated the flesh of the animal, the whale re-awoke from its dormant state, sounded and then surfaced a mile away. It sounded again, nearly vertically. Two minutes later the whale surfaced again, some two miles away - this time with an enormous cephalopod on its head and the battle, which was to last a half hour, began.

The Captain witnessed the whale eat two of the cephalopod's tentacles and was able to estimate the length of the cephalopod as 26 to 33 feet. The cephalopod then proceeded to shoot its black ink, the supply being quickly exhausted, while it also flagellated the whale.

The whale in return sounded again and succeeded in shaking the giant cephalopod loose and grabbed the body in its mouth. The blood of the cephalopod spread upon the surface of the ocean as it died.

The sperm whale sounded again, then surfaced some miles away, where it was ravishing its prey. So ends Captain Robin's story.

Unfortunately, the story does not end the question as to whether or not this was a giant squid or a giant octopus.

Dr. Heuvelmans, in a personal letter, is inclined to think that it was a giant squid, since the author speaks of two tentacles probably longer than the other arms - which the sperm whale was munching at the start of the fight.

As to my opinion: Captain Robin used the word pieuvre - which translated can mean octopus or devilfish; broadly, any large cephalopod, as a giant squid.

It is impossible to state as to what species of giant cephalopod that Captain Robin had seen based upon the information in his article. So the question must remain unanswered: was it a giant squid or a Pacific relation of Octopus giganteus ?

Acknowledgement

I wish to thank Dr. Bernard Heuvelmans, Centre De Cryptozoologie, Verlhiac / Saint-Chamassy, France, for his help in obtaining the information concerning this incident. Also to Mr. Ron Westrum of Ann Arbor, Michigan, and to Mrs Jean Farmer of Bloomington, Indiana, who tried to locate the Francais article for me.

References

Mangiacopra, Gary S. "Octopus giganteus Verrill; a new species of cephalopod", Of Sea and Shore, Spring 1975, Vol. 6, #1, pages 3-10, 51, 52.

Doukan, Gilbert, "The Habits of the Octopus", World Beneath The Waves, 1957 Stratford Press, Inc. N.Y., pages 69, 70.

Heuvelmans, Bernard, private communication, October 26, 1975.

Robin, Max-P. "Combat de Monstres", Le Chasseur Francais, November 1952, Saint-Etienne (Loire), France, page 701.

*Milford, Connecticut

SOUNDING OFF

Continued from page 202

same dealer sent me some specimens labelled Polinices, which had Polinices opercula. Now, the label just didn't match with the information in my books, so I took the specimens to my nearby museum to compare them with material there. I managed to identify the specimens, but they were Natica. The opercula were faked! I wrote to the dealer about the incident. In fact, I've written more than once to dealers to complain about unethical practices. Apparently, my letters got "lost" in the mail. They were never acknowledged.

One day, I got it into my drug-damaged head,

Continued on page 252, column 3

# A Checklist of Aquatic Life on Postage Stamps

By TOM RICE

NOTE: The author wishes to thank Mr. George A. Bearse for sending many additions and additional information which has been incorporated into the checklist.

## NIGER

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| 1962 Jan. 29 | Manatee | | 50¢ | 107 | 145 | E |
| 1962 Jan. 29 | Manatee | | 10fr | 108 | 150 | E |
| 1965 Jul. 15 | Hand-crushing Crab, stylized | | 100fr | C50 | 275 | F |
| 1966 Dec. 2 | Atom destroying a crab (stylized) | | 100fr | C66 | 308 | F |
| 1967 Feb. 8 | Pied Kingfisher | Ceryle rudis rudis | 2fr | 185 | 318 | B |
| 1968 Aug. 5 | Senegalese Kingfisher | Halcyon senegalensis | 10fr | 208 | 363 | B |
| 1968 Nov. 18 | Ibis (Scott says Cattle Egret) | Bulbucus ibis | 50fr | 212 | 374 | B |
| 1971 Jan. 4 | Senegalese Kingfisher | Halcyon senegalensis | 10fr | 234 | 444 | B |
| 1972 July 31 | Ibis (Scott says Cattle Egret) | Bulbucus ibis | 50fr | 254 | 446B | B |
| 1973 June 5 | Crocodile | | 25fr | 273 | 554 | H |
| 1973 June 5 | Hippopotamus | | 40fr | 275 | 556 | E |

## NIGERIA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1953 Sept. | Shrimp in border design | Penaeus duorarum | 2sh 6p | 88 | 176 | F |
| 1961 Jan. 1 | Cowries in right border design | Cypraea moneta | 2sh 6p | 110 | 202 | A |
| 1963 Mar. 21 | fish along bottom border | | 3p | 141 | 238 | C |
| 1963 Dec. 10 | fish a part of design | | 1sh 3p | 155 | 254 | C |
| 1965 Nov. 1 | Saddle Bill Stork (with fish) | | 6p | 190 | 292 | B, C |
| 1965 Nov. 1 | Kingfishers (with fish) | | 1sh | 191 | 293 | B, C |
| 1965 Nov. 1 | Hippopotamus | | 10sh | 196 | 297 | E |
| 1971 | Stork & Kingfisher reprinted, Scott #262 and 264; Minkus #292T and 293T | | | | | B, C |
| 1973 | Argungu Fishing Festival (fish in design) | | 30k | 303 | | C |

## NIUE

| | | | | | | |
|---|---|---|---|---|---|---|
| 1969 Aug. 19 | Kalahimu Crab | Geograpsus grayi | 3¢ | 132 | 108 | F |
| 1969 Aug. 19 | Kalaui Crab; Land Crab | Cardisoma longipes | 5¢ | 133 | 109 | F |
| 1969 Aug. 19 | Unga Crab or Robber Crab | Birgus latro | 30¢ | 134 | 110 | F |
| 1972 May 3 | Octopus fishing | Octopus hongkongensis; Cyp. tigris* | 3¢ | 147 | 123 | A |
| 1973 June 27 | Silver Sweeper | Pempheris oualensis | 8¢ | 156 | | C |
| 1973 June 27 | Spotted Argus | Cephalopholis argus | 10¢ | 157 | | C |
| 1973 June 27 | Yellow Crescent-tail | Variola louti | 15¢ | 158 | | C |
| 1973 June 27 | Palu | Etelis carbunculus | 20¢ | 159 | | C |
| 1974 | King Fataaki with a "seashell belt" | | 4¢ | 167 | | A |

* cowry shell is used as a lure to attrack octopus

## NORFOLK ISLAND

| | | | | | | |
|---|---|---|---|---|---|---|
| 1961 May 1 | Fairy Tern | | 3p | 31 | 36 | B |
| 1961 May 1 | Providence Petrel | | 2sh | 37 | 43 | B |
| 1962 July 16 | Tweed Trousers | Atypichthys latus | 6p | 50 | 54 | C |
| 1962 Aug. 14 | Red-tailed Tropic Bird | | 10sh | 41 | 47 | B |
| 1962 Sept. 7 | Po'ov Fish | Thalassoma purpureum | 1sh | 55 | 57 | C |
| 1963 Feb. 25 | Trumpeter Fish | Lethrinus chrysostomus | 11p | 54 | 56 | C |
| 1963 May 6 | Queensland Grouper | Promicrops lanceolatus | 1sh 6p | 58 | 59 | C |
| 1963 July 15 | Dreamfish | Kyphosus bigibbus | 1sh 3p | 57 | 58 | C |
| 1963 Sept. 23 | Silver Trevally | Caranx georgianus | 2sh 3p | 60 | 59A | C |
| 1966 Feb. 14 | Fairy Tern | | 3¢ on 3p | 73 | 69 | B |
| 1966 Feb. 14 | Providence Petrel | | 20¢ on 2sh | 78 | 74 | B |
| 1966 Feb. 14 | Red-Tailed Tropic Bird | | $1 on 10sh | 82 | 78 | B |
| 1971 June 16 | Sacred Kingfisher | | $1.00 | 140 | 127 | B |
| 1974 | Pearlshell Nativity Scene, St. Barnabas Chapel | | 7¢ | 178 | | A |
| 1974 | Pearlshell Nativity Scene, St. Barnabas Chapel | | 30¢ | 179 | | A |

## NORTH BORNEO (SABAH)

| | | | | | | |
|---|---|---|---|---|---|---|
| 1963 June 4 | Freedom From Hunger (with stylized fish) | | 12¢ | 296 | 457 | C |

## NORTHERN RHODESIA

| | | | | | |
|---|---|---|---|---|---|
| 1963 Dec. 1 | Coat of Arms, appearing on set of stamps, shows eagle clutching a fish; Scott #75-88; Minkus #79-92 | | | | C |

## NORWAY

| | | | | | | |
|---|---|---|---|---|---|---|
| 1956 Oct. 30 | Flying Swans | | 35ø | 353 | 538 | B |
| 1956 Oct. 30 | Flying Swans | | 65ø | 354 | 539 | B |
| 1960 Aug. 27 | Fish - Split Cod & Klipfish | Gadus morhua | 25ø | 383 | 578 | C |
| 1963 April 22 | Stylized Fish in design | | 25ø | 420 | 626 | C |
| 1963 April 22 | Stylized Fish in design | | 40ø | 423 | 628 | C |
| 1963 April 22 | Stylized Fish in design | | 90ø | 430 | 631 | C |
| 1963 Nov. 5 | Stylized Fish and Rye | | 30ø | 421 | 647 | C |
| 1963 Nov. 5 | Stylized Fish & Rye | | 55ø | 425 | 648 | C |
| 1963 Nov. 5 | Stylized Fish & Rye | | 85ø | 429 | 651 | C |
| 1963 Mar. 21 | Still Life Painting, fish included | | 50ø | 435 | 636 | C |
| 1963 Mar. 21 | Still Life Painting, fish included | | 90ø | 436 | 637 | C |
| 1964 | Fish & Rye | | 30ø | 462 | 667 | C |
| 1968 April 23 | Stylized Fish | | 40ø | 463 | 709 | C |
| 1968 April 23 | Stylized Fish | | 45ø | 464 | 710 | C |
| 1968 April 23 | Stylized Fish | | 55ø | | 712 | C |
| 1970 Mar. 16 | Stylized Fish | | 100ø | 469 | 713D | C |
| 1970 April 10 | White-tailed Sea Eagle | | 100ø | 554 | 753 | B |
| 1971 Feb. 23 | Stylized Fish | | 100ø | | 713F | C |
| 1973 Feb. 15 | Stylized Fish | | 75ø | | 713B | C |
| 1973 Feb. 15 | Stylized Fish | | 100ø | | 713E | C |

## NORWAY - AALESUND LOCALS

| | | | | | |
|---|---|---|---|---|---|
| 1880 | Atlantic Cod | Gadus morhua | 3ø | 1-5(1) | C |
| 1884 | Atlantic Cod | Gadus morhua | 3ø | 6 (1) | C |
| 1884 | Atlantic Cod | Gadus morhua | 5ø | 7 (1) | C |
| 1884 | Atlantic Cod | Gadus morhua | 7ø | 8 (1) | C |

(1) catalog numbers from the Hurt & Williams Catalogue, Norway Local Issues

## NORWAY - NAMSO LOCALS

| | | | | | |
|---|---|---|---|---|---|
| 1888 | Atlantic Salmon | Salmo salar | 2ø | 1 (1) | C |
| 1888 | Atlantic Salmon | Salmo salar | 4ø | 2 (1) | C |
| 1888 | Atlantic Salmon | Salmo salar | 8ø | 3 (1) | C |
| 1888 | Atlantic Salmon | Salmo salar | 10ø | 4 (1) | C |
| 1889 | Atlantic Salmon issue of 1888, overprinted | | 2ø on 8ø | 5 (1) | C |
| 1889 | Atlantic Salmon issue of 1888, overprinted | | 4ø on 10ø | 6 (1) | C |

(1) catalog numbers from the Hurt & Williams Catalogue, Norway Local Issues

## NYASALAND

| | | | | | | |
|---|---|---|---|---|---|---|
| 1964 Jan. 1 | Chambo Fish | | 1p | 124 | 203 | C |

## OMAN

| | | | | | |
|---|---|---|---|---|---|
| 1972 | Bogue | Boops boops | 1b | | C |
| 1972 | Barbier, Pagre | Pagrus pagrus | 2b | | C |
| 1972 | Sparaillon | Sargus annularis | 3b | | C |
| 1972 | Gunnard | Trigla lucerna | 4b | | C |
| 1972 | Swordfish | Xiphias gladius | 5b | | C |
| 1972 | Dory | Zeus faber | 10b | | C |
| 1972 | Saddle Wrasse | Thalassoma | 15b | | C |
| 1972 | Atlantic Mackerel | Scomber scombus | 20b | | C |
| 1972 | Dolphin (fish) | Coryphaena hippurus | 25b | | C |
| 1972 | Ocean Perch | Sebastes marinus | 30b | | C |
| 1972 | Swordfish on souvenir sheet | | S/S 2R | | C |
| 1972 | Charr | Salvelinus alpinus | 1b | | C |
| 1972 | River Lamprey | Lamptera fluviatilis | 2b | | C |
| 1972 | Sea Lamprey | Petromyzon marinus | 2b | | C |
| 1972 | Sewen (Salmon) | Salmo trutta cambricus | 3b | | C |
| 1972 | Short-headed Salmon | Salmo salar | 4b | | C |
| 1972 | Common Trout | Salmo trutta fario | 5b | | C |
| 1972 | Black-finned Trout | Salmo trutta nigrippinus | 8b | | C |
| 1972 | Loch Leven Trout | Salmo trutta levenensis | 10b | | C |

## OMAN - Continued

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| 1972 | Galway Sea Trout | Salmo trutta gallivensis | 15b | | | C |
| 1972 | Gillaroo Trout | Salmo trutta stomachicus | 50b (1) | | | C |
| | | (1) Issue is imperforate | | | | |

## PABAY

| | | | | (1) | | |
|---|---|---|---|---|---|---|
| 1965 | Common Shrimp | Crangon crangon | 3d | 18 | | F |
| 1965 | Hermit Crab in Whelk Shell | Buccinum undatum; Pagurus bernhar- | 6d | 19 | | F, A |
| 1965 | Green or Shore Crab | Carcinus maenas dus | 1sh | 20 | | F |
| 1965 | European Lobster | Homarus gammarus | 1sh 9d | 21 | | F |
| 1965 | above four stamps also issued on imperforate sheet and as a deluxe miniature sheet | | | 24 (miniature sheet) | | F, A |
| 1965 | above four stamps overprinted "John F. Kennedy" | | | 25 - 28 | | F, A |
| 1965 | "John F. Kennedy" issued as imperforate sheet; also as deluxe miniature sheet | | | 31 (miniature sheet) | | F, A |
| 1965 | the four stamps overprinted "Winston S. Churchill" | | | 33 - 36 | | F, A |
| 1965 | "Winston S. Churchill" overprinted issued imperforate; also as deluxe miniature sheet | | | 39 (min. sheet) | | F, A |
| 1966 | the four stamps overprinted "1966" | | | 41 - 44 | | F, A |
| 1966 | the four stamps overprinted "1966" in red | | | 45 | | F, A |
| 1966 | mini sheet, overprinted "1966" | | | 48 | | F, A |
| 1969 | Atlantic Cod | Gadus morhua | 4p | 118 | | C |
| 1969 | Atlantic Herring | Clupea harengus | 5d | 119 | | C |
| 1969 | Plaice | Pleuronectes platessa | 1sh | 120 | | C |
| 1969 | Common Skate | Raja batis | 1sh 3p | 121 | | C |
| 1969 | Atlantic Mackerel | Scomber scombrus | 2sh | 122 | | C |
| 1969 | 3-Spined Stickleback | Gasterosteus aculeatus | 2sh 6p | 123 | | C |
| 1969 | 3-Spined Stickleback | Gasterosteus aculeatus | 5sh (2) | 124 | | C |
| 1969 | issues #118-#123, overprinted "Europa 1969" | | | 131 to 136 | | C |
| 1969 | issues #118-#123, overprinted "6th Death Anniversary Sir Winston S. Churchill | | | | | |
| 1969 | (2) 1874-1965" | | | 143 to 148; 155-60; 167-72 | | C |
| 1970 | issues #118 - #123, overprinted "European Conservation Year 1970" | | | 179 to 184 | | C |
| 1971 | issues #118 - #124, overprinted and surcharged "Emergency Strike Post International Mail" | | | 220-226 | | C |
| 1971 | issues #118-#124, overprinted & surcharged "Emergency Strike Post International Mail" | | | 233 to 238 | | C |

(2) issues also as a souvenir sheet, in the border design of which were a rock crab, sea star, shells & algae
(1) Numbers from 1973 "Catalogue of British Local Stamps" by Gerald Rosen

## PAKISTAN

| | | | | | | |
|---|---|---|---|---|---|---|
| 1967 Dec. 26 | Stylized Crab (Anti-Cancer) | | 15pa | 247 | 338 | F |
| 1973 Sept. 24 | Boalee | Wallago attu | 10pa | 348 | | C |
| 1973 Sept. 24 | Sucker Barb | Labeo rohita | 20pa | 349 | | C |
| 1973 Sept. 24 | Mozambique Mouthbreeder | Tilapia mossambicana | 60pa | 350 | | C |
| 1973 Sept. 24 | Catla | Catla catla | 1R | 351 | | C |
| 1975 | Stylized Fish | | 60pa | | | C |

## PAKISTAN - BAHAWALPUR STATE

| | | | | | | |
|---|---|---|---|---|---|---|
| 1945 Jan. 1 | Pelicans | | 4a | 04 | 5 | B |

## PANAMA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1942 June 4 | Swordfish | Makaira indica | 7¢ | C74 | 419 | C |
| 1948 June 14 | Swordfish | Makaira indica | 2¢ | C96 | 418 | C |
| 1947 | Swordfish issue, overprinted "Habilitada Correos" | | 1¢ on 7¢ | 355 | 450 | C |
| 1947 Mar. 8 | Swordfish issue, overprinted "Aereo" | | 5¢ on 7¢ | C84 | 440 | C |
| 1949 May 23 | Swordfish issue, overprinted "1849-1949, Chiriqui Centenario" | | 2¢ | C108 | 480 | C |
| 1949 Sept. 9 | Swordfish issue, overprinted "1874-1949, U.P.U." | | 2¢ | C114 | 487 | C |
| 1950 Aug. 17 | Swordfish issue, overprinted "Centenario del Gral. Jose de San Martin 17 de Agosto de 1950" | | 2¢ | C121 | 499 | C |
| 1965 Dec. 7 | Red Snapper | Lutjanus campechanus | 1¢ | 483 | 913 | C |
| 1965 Dec. 7 | Dolphin | Coriphaena hippurus | 2¢ | 484 | 914 | C |
| 1965 Dec. 7 | Shrimp | Penacus occidentalis | 8¢ | C348 | 915 | F |
| 1965 Dec. 7 | Hammerhead Shark | Sphyrna zygaena | 12¢ | C349 | 916 | C |
| 1965 Dec. 7 | Atlantic Sailfish | Istiophorus americanus | 13¢ | C350 | 917 | C |
| 1965 Dec. 7 | Seahorse | Hippocampus guttulatus | 25¢ | C351 | 918 | C |
| 1965 Dec. 7 | souvenir sheet with Shrimp, Shark, Sailfish & Seahorse | | | | 919 | F, C |
| 1967 July 20 | Anhinga (Snake-neck Bird) | | ½¢ | 490 | 1008 | B |

## PANAMA - Continued

| | | | | | | |
|---|---|---|---|---|---|---|
| 1967 July 20 | Belted Kingfisher | | 13¢ | 495 | 1013 | B |
| 1968 June 26 | Orange-Striped Triggerfish | Balistipus undulatus | ½¢ | | 1090 | C |
| 1968 June 26 | Queen Angel | Holacanthus ciliaris | 1¢ | | 1091 | C |
| 1968 June 26 | Saddleback Butterfly | Chaetodon ephippium | 3¢ | | 1092 | C |
| 1968 June 26 | Spotted Grouper | Epinephelus elongatus | 4¢ | | 1093 | C |
| 1968 June 26 | Porkfish | Anisotremus virginicus | 5¢ | | 1094 | C |
| 1968 June 26 | Spotted Trigger | Balistoides conspicillum | 13¢ | | 1095 | C |
| 1968 June 26 | Texas Skate | Raja texana | 50¢ souvenir sheet | | 1096 | C |

## PAPUA NEW GUINEA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1966 June 8 | Stylized Barramundi | Scleropages liechhardtii | 7¢ | 214 | 243 | C |
| 1968 April 24 | Frog | Hyla thesaurensis | 5¢ | 257 | 278 | H |
| 1968 April 24 | Frog | Hyla iris | 10¢ | 258 | 279 | H |
| 1968 April 24 | Frog | Ceratobatrachus guentheri | 15¢ | 259 | 280 | H |
| 1968 April 24 | Frog | Nyctimystes narinosa | 20¢ | 260 | 281 | H |
| 1968 Aug. 28 | Marble Cone | Conus marmoreus | 5¢ | 268 | 289 | A |
| 1968 Aug. 28 | Frilled Clam | Tridacna squamosa | 20¢ | 273 | 294 | A |
| 1968 Aug. 28 | Giant Murex | Chicoreus rampsus | 30¢ | 275 | 296 | A |
| 1968 Aug. 28 | Triton's Trumpet | Charonia tritonis | 60¢ | 277 | 298 | A |
| 1968 Oct. 30 | Credted Stromb | Strombus sinuatus | 3¢ | 266 | 287 | A |
| 1968 Oct. 30 | Red Volute | Voluta ruckeri | 10¢ | 270 | 291 | A |
| 1968 Oct. 30 | Scorpion shell | Lambis scorpio | 15¢ | 272 | 293 | A |
| 1968 Oct. 30 | Chambered Nautilus | Nautilus pompilius | 40¢ | 276 | 297 | A |
| 1968 Oct. 30 | Emerald Snail | Papustyla pulcherima | $1.00 | 278 | 299 | A |
| 1969 Jan. 29 | Egg Cowry | Ovula ovum | 1¢ | 265 | 286 | A |
| 1969 Jan. 29 | Lithograph Cone | Conus lithographus | 4¢ | 267 | 288 | A |
| 1969 Jan. 29 | Orange-spotted Miter | Mitra mitra | 7¢ | 269 | 290 | A |
| 1969 Jan. 29 | Checkerboard Helmet | Phalium areola | 12¢ | 271 | 292 | A |
| 1969 Jan. 29 | Chocolate-flamed Venus | Lioconcha castrensis | 25¢ | 274 | 295 | A |
| 1969 Jan. 29 | Glory-of-the-Sea Cone | Conus gloriamaris | $2.00 | 279 | 300 | A |
| 1972 Mar. 15 | New Guinea River Turtle | Carrettochelys insculpta | 7¢ | 344 | 366 | H |
| 1972 Aug. 16 | Native Blowing Triton's Trumpet Snail | | 30¢ | 354 | 376 | A |
| 1975 | Ornate Butterfly Cod | Pterois sp. | 7t | 411 | | C |

## PARAGUAY

| | | | | | | |
|---|---|---|---|---|---|---|
| 1969 July 9 | Alligator | | 30¢ | | 1673 | H |
| 1971 May 29 | Botticelli's painting "Birth of Venus", scallop shell | | 10¢ | | 1959 | A |
| 1972 Nov. 18 | Botke's painting "Birds & Flowers", storks | | 10¢ | | 2095 | B |
| 1972 Nov. 18 | Durer's painting "Crab" | Eriphia verrucosa | 75¢ | | 2101 | F |
| 1972 Nov. 18 | Asselyn's painting "Swan" | | 18.15g | | 2103 | B |

## PENRYN ISLAND

| | | | | | | |
|---|---|---|---|---|---|---|
| 1974 | Trunkfish | Ostracion sp. | ½¢ | 50 | | C |
| 1974 | Moonfish | Monodactylus argenteus | 1¢ | 51 | | C |
| 1974 | Imperial Angelfish | Pomacanthus imperator | 2¢ | 52 | | C |
| 1974 | Longnose Butterflyfish | Chelmon rostratus | 3¢ | 53 | | C |
| 1974 | Clown Butterflyfish | Chaetodon ornatissimus | 4¢ | 54 | | C |
| 1974 | Striped Butterflyfish | Chaetodon melanotus | 5¢ | 55 | | C |
| 1974 | Latticed Butterflyfish | Chaetodon raffessi | 8¢ | 56 | | C |
| 1974 | Saddleback Butterflyfish | Chaetodon ephippium | 10¢ | 57 | | C |
| 1974 | Regal Angelfish | Pygoplites diacanthus | 20¢ | 58 | | C |
| 1974 | Longfinned Butterflyfish | Heniochus acuminatus | 25¢ | 59 | | C |
| 1974 | Sweetlips | Plectorhynchus chaetodonoides | 60¢ | 60 | | C |
| 1974 | Orangestripe Triggerfish | Balistapus undulatus | $1.00 | 61 | | C |

## PERU

| | | | | | | |
|---|---|---|---|---|---|---|
| 1936 Dec. | Guanay Cormorant | Phalacrocorax bougainville | 2¢ | 356 | 484 | B |
| 1937 April | Guanay Cormorant | Phalacrocorax bougainville | 2¢ | 357 | 507 | B |
| 1960 May 30 | Peruvian Cormorant | | 1s | C165 | 776 | B |
| 1970 April 30 | Anchovy | Engraulis ringens | 2.50s | 532 | 981 | C |
| 1970 April 30 | Peruvian Marlin | | 2.50s | 537 | 982 | C |
| 1970 April 30 | Pacific Hake | Merluccinus grayi | 2.50s | 533 | | C |
| 1970 April 30 | Swordfish | Xiphias gladius | 3s | C285 | 983 | C |
| 1970 April 30 | Yellowfin Tuna | Thunnus albacares | 3s | C286 | 984 | C |

## PERU - Continued

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 April 30 | Wolf Fish | Anarhichas lupus | 5.50s | C287 | 985 | C |
| 1971 June 7 | Chilean Sardine | Sarda chiliensis | 3.50s | C309 | 1025 | C |
| 1971 June 7 | Anchovy | Engraulis ringens | 4s | C310 | 1026 | C |
| 1971 June 7 | Peruvian Hake | Merluccios puranos | 5.50s | C311 | 1027 | C |
| 1971 June 7 | Menhaden | Brevoortis maculatachilcue | 8.50s | C312 | 1028 | C |
| 1972 Mar. 20 | Pop-eye Catalufa | Pristigenys serula | 1.20s | 574 | 1073 | C |
| 1972 Mar. 20 | Common Guadana | Trachichthys mento | 1.50s | 575 | 1074 | C |
| 1972 Mar. 20 | Jack Mackerel | Trachurus symmetricus murphyi | 2.50s | 576 | 1075 | C |
| 1972 Mar. 20 | | Pontinus furcirhinus dubius | 3s | C333 | 1076 | C |
| 1972 Mar. 20 | Old Red Hogfish | Bodianus eclancheri | 5.50s | C334 | 1077 | C |
| 1973 Sept. 3 | Giant Otter | | 3.50s | C373 | | E |
| 1973 Sept. 3 | Greater Flamingo | | 6s | C374 | | E |

## PHILIPPINES

| | | | | | | |
|---|---|---|---|---|---|---|
| 1935 Feb. 15 | Searching Oyster Shells For Pearls | | 8¢ | 386 | 483 | A |
| 1935 Mar. 14 | above issue, overprinted "O.B." | | 8¢ | 018 | 497 | A |
| 1937 | above issue, overprinted "Commonwealth" | | 8¢ | 414 | 523 | A |
| 1939 | above issue, overprinted "Commonwealth" | | 8¢ | 436 | 548 | A |
| 1939 | above overprinted issue, overprinted, again, with "O.B." | | 8¢ | 030 | 563 | A |
| 1944 | pearling issue, overprinted "Victory" | | 8¢ | 472 | 656 | A |
| 1945 Jan. 19 | pearling issue, overprinted "Victory" | | 8¢ | 488 | 688 | A |
| 1952 Oct. 23 | Bangus | Chanos chanos | 5¢ | 578 | 828 | C |
| 1952 Oct. 23 | Bangus | Chanos chanos | 6¢ | 579 | 829 | C |
| 1967 Aug. 19 | Stork-billed Kingfisher | | 1s + 5s | B32 | 1126 | B |
| 1967 Aug. 19 | Rufous Hornbill | | 5s + 5s | B33 | 1127 | B |
| 1970 Oct. 5 | Crab part of design | | 10s | 1062 | 1243 | F |
| 1970 Oct. 5 | Crab part of design | | 40s | 1063 | 1244 | F |
| 1970 Oct. 5 | Crab part of design | | 50s | 1064 | 1245 | F |
| 1970 Oct. 19 | Frilled Clam | Tridacna squamosa | 5s | 1065 | 1246 | A |
| 1970 Oct. 19 | Royal Thorny Oyster | Spondylus regius | 10s | 1066 | 1247 | A |
| 1970 Oct. 19 | Venus Comb Murex | Murex pecten | 20s | 1067 | 1248 | A |
| 1970 Oct. 19 | Glory-of-the-Sea Cone | Conus gloriamaris | 40s | 1068 | 1249 | A |
| 1971. April 19 | Cultured Pearls | | 10s | 1090 | 1275 | A |
| 1971 April 19 | Coral Diving | | 20s | 1091 | 1276 | J |
| 1972 Aug. 14 | Parrotfish | Scarus frenatus | 5s | 1138 | 1329 | C |
| 1972 Aug. 14 | Sunburst Butterflyfish | Chaetodon kleini | 10s | 1139 | 1330 | C |
| 1972 Aug. 14 | Moorish Idol | Zanclus cornutus | 20s | 1140 | 1331 | C |
| 1972 Aug. 14 | Dusky Angelfish | Centropyge bispinosus | 50s | C104 | 1332 | C |

## PITCAIRN ISLANDS

| | | | | | | |
|---|---|---|---|---|---|---|
| 1964 Aug. 5 | Great Frigate Bird | | 3p | 42 | 41 | B |
| 1964 Aug. 5 | Fairy Tern | | 4p | 43 | 42 | B |
| 1964 Aug. 5 | Red-footed Booby | | 8p | 45 | 44 | B |
| 1964 Aug. 5 | Red-tailed Tropic Birds | | 10p | 46 | 45 | B |
| 1964 Aug. 5 | Murphy's Petrel | | 2sh 6p | 49 | 48 | B |
| 1967 July 10 | Great Frigate Bird | | 2½ on 3p | 75 | 74 | B |
| 1967 July 10 | Fairy Tern | | 3¢ on 4p | 76 | 75 | B |
| 1967 July 10 | Red-footed Booby | | 10¢ on 8p | 78 | 77 | B |
| 1967 July 10 | Red-tailed Tropic Birds | | 15¢ on 10p | 79 | 78 | B |
| 1967 July 10 | Murphy's Petrel | | 30¢ on 2sh 6p | 82 | 81 | B |
| 1968 Aug. 19 | Flying Fish Carving | Cypselurus | 10¢ | 92 | 91 | C |
| 1970 Oct. 12 | Groupers: Auntie & Ann | Cephalopholis urodelus | 5¢ | 114 | 113 | C |
| 1970 Oct. 12 | Rudderfish or Dreamfish | Kyphosus cinerascens | 10¢ | 115 | 114 | C |
| 1970 Oct. 12 | Elwyn's Trousers Wrasse | Coris species | 15¢ | 116 | 115 | C |
| 1970 Oct. 12 | Whistling Daughter Wrasse | Thalassoma lutescens | 20¢ | 117 | 116 | C |
| 1970 Oct. 12 | also in design: Finger Coral | Porites species | 20¢ | 117 | 116 | J |
| 1974 | Horn and Miter Shells | Rhinoclavus sp.; Mitra sp. | 4¢ | 137 | | A |
| 1974 | Dove Shells | Pyrene sp. | 10¢ | 138 | | A |
| 1974 | Limpet and False Limpet | Cellana sp.; Siphonaria normalis | 18¢ | 139 | | A |
| 1974 | Lucine Clams | Ctena species | 50¢ | 140 | | A |
| 1974 | above four shell stamps in souvenir sheet, with shells in border design too | | | 140a | | A |

## POLAND

| | | | | | | |
|---|---|---|---|---|---|---|
| 1947 Aug. 20 | Fisherman holding Atlantic Salmon | Salmo salar | 15z | 415 | 615 | C |
| 1947 | above issue, overprinted "Groszy" | | 15z | 582(1) | | C |

(1) Mitchel catalog number (not listed in Scott or Minkus)

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| | | POLAND - Continued | | | | |
| 1958 April 22 | Giant Pike Perch | Stizostedion lucioperca | 40g | 810 | 1139 | C |
| 1958 April 22 | Salmon | Salmo salar | 60g | 811 | 1140 | C |
| 1958 April 22 | Pike | Esox lucius | 2.10z | 812 | 1141 | C |
| 1958 April 22 | Brown Trout | Salmo trutta fario | 2.50z | 813 | 1142 | C |
| 1958 April 22 | Grayling | Thymallus thymallus | 6.40z | 814 | 1143 | C |
| 1960 Nov. 20 | Great Cormorant | | 30g | 937 | 1263 | B |
| 1960 Nov. 20 | White-tailed Sea Eagle | | 60g | 940 | 1266 | B |
| 1960 Nov. 20 | European Kingfisher | | 4z | 944 | 1270 | B |
| 1963 June 1 | European Pond Turtle | Emys orbicularis | 50g | 1136 | 1473 | H |
| 1963 June 1 | Mountain Newt | Triturus alpestris | 1.35z | 1140 | 1477 | H |
| 1963 June 1 | Crested Newt | Triturus cristatus | 1.50z | 1141 | 1478 | H |
| 1963 June 1 | Fire Salamander | Salamandra salamandra | 3z | 1144 | 1481 | H |
| 1964 June 5 | Lapwing | Vanellus vanellus | 30g | 1231 | 1571 | B |
| 1964 June 5 | White-spotted Bluethroat | Luscinia svecica | 40g | 1231 | 1572 | B |
| 1964 June 5 | Black-tailed Godwit | Limosa limosa | 50g | 1233 | 1573 | B |
| 1964 June 5 | Osprey | Pandion haliaetus | 60g | 1234 | 1574 | B |
| 1964 June 5 | Gray Heron | Ardea cinerea | 90g | 1235 | 1575 | B |
| 1964 June 5 | Little Gull | Larus minutus | 1.35z | 1236 | 1576 | B |
| 1964 June 5 | Shoveler | Spatula clypeata | 1.55z | 1237 | 1577 | B |
| 1964 June 5 | Black-throated Loon | Gavia arctica | 5.60z | 1238 | 1578 | B |
| 1964 June 5 | Great-crested Grebe | Podiceps cristatus | 6.50z | 1239 | 1579 | B |
| 1966 Mar. 5 | Prehistoric Fish | Dinichthys | 20g | 1395 | 1732 | C |
| 1966 Mar. 5 | Lobefin | Eugthenopteron | 30g | 1396 | 1733 | C |
| 1967 April 1 | Striped Butterflyfish | Chaetodon melanotus | 5g | 1492 | 1826 | C |
| 1967 April 1 | Imperial Butterflyfish | Pomacanthus imperator | 10g | 1493 | 1827 | C |
| 1967 April 1 | Red-striped Butterflyfish | Chaetodon lunula | 40g | 1494 | 1828 | C |
| 1967 April 1 | Spotted Triggerfish | Balistoides conspicillum | 60g | 1495 | 1829 | C |
| 1967 April 1 | Undulate Triggerfish | Balistapus undulatus | 90g | 1496 | 1830 | C |
| 1967 April 1 | Picasso Triggerfish | Rhinecanthus aculeatus | 1.50z | 1497 | 1831 | C |
| 1967 April 1 | Black-eye Butterflyfish | Chaetodon melapterus | 4.50z | 1498 | 1832 | C |
| 1967 April 1 | Blue Angelfish | Pomacanthus semicirculatus | 6.60z | 1499 | 1833 | C |
| 1967 April 1 | Saddle-back Butterflyfish | Chaetodon ephippium | 7z | 1500 | 1834 | C |
| 1967 Nov. 15 | Lobster in Jean de Heem painting | | 4.50z | 1557 | 1893 | F |
| 1970 Feb. 28 | Mallard Duck | | 40g | 1771 | 2067 | B |
| 1970 Feb. 28 | Stork | | 1.15z | 1773 | 2069 | B |
| 1970 Feb. 28 | Black Goose | | 3.40z | 1776 | 2072 | B |
| 1972 Aug. 20 | Crocodile | | 3.40z | 1893 | 2253 | H |
| 1973 Aug. 30 | Underwater scene: octopus, sea star, jellyfish | | 4.90z | 1992 | 2354 | J, G, A |
| 1973 Nov. 30 | Penguins | | 1z | 2002 | 2365 | B |
| | | PORTUGAL | | | | |
| 1961 Aug. 24 | Scallops in design above Setubal Gate | | 1e | 873 | 1015 | A |
| 1961 Aug. 24 | Scallops in design above Setubal Gate | | 4.30e | 874 | 1016 | A |
| | | PORTUGUESE GUINEA | | | | |
| 1963 Jan. 17 | Smyth's Water Snake | Grayia smythii | 1.50e | 310 | 364 | H |
| 1963 Jan. 17 | Green Swamp Snake | Causus rhombeatus | 2e | 312 | 365 | H |
| | | QATAR | | | | |
| 1965 Oct. 18 | Jigsaw Triggerfish & Anemone | Pseudobalistes fuscus | 1np | 69 | 73 | J, C |
| 1965 Oct. 18 | Sweetlips; Tun Shell; Coral | Plectorhynchus chaetodonoides | 2np | 70 | 74 | J, C, A |
| 1965 Oct. 18 | Saddleback Butterflyfish | Chaetodon ephippium | 3np | 71 | 75 | J, C |
| 1965 Oct. 18 | Golden Butterflyfish | Chaetodon auriga | 4np | 72 | 76 | C |
| 1965 Oct. 18 | Surgeonfish; Textile Cone | Naso lituratus; Conus textile | 5np | 73 | 77 | C, A |
| 1965 Oct. 18 | Paradise Fish | Macropodus opercularis | 15np | 74 | 78 | C |
| 1965 Oct. 18 | Mustard Tang | Acanthurus guttatus | 20np | 75 | 79 | C |
| 1965 Oct. 18 | Rio Grande Perch; Sea Fans | Cichlasoma cyanoguttatum | 30np | 76 | 80 | J, C |
| 1965 Oct. 18 | Zebra Cichlid; Corals | Cichlasoma nigrofasciatus | 40np | 77 | 81 | J, C |
| 1965 Oct. 18 | Sweetlips; Tun Shell; Coral | Plectorhynchus chaetodonoides | 50np | 78 | 82 | J, C, A |
| 1965 Oct. 18 | Triggerfish & Anemone | Pseudobalistes fuscus | 75np | 79 | 83 | J, C |
| 1965 Oct. 18 | Rio Grande Perch; Sea Fans | Cichlasoma cyanoguttatum | 1r | 80 | 84 | J, C |
| 1965 Oct. 18 | Mustard Tang | Acanthurus guttatus | 2r | 81 | 85 | C |
| 1965 Oct. 18 | Paradisefish | Macropodus opercularis | 3r | 82 | 86 | C |
| 1965 Oct. 18 | Gray Surgeonfish; Textile Cone | Naso lituratus; Conus textile | 4r | 83 | 87 | C, A |

## QATAR - Continued

| | | | | | | |
|---|---|---|---|---|---|---|
| 1965 Oct. 18 | Golden Butterflyfish | Chaetodon auriga | 5r | 84 | 88 | C |
| 1965 Oct. 18 | Saddleback Butterflyfish | Chaetodon ephippium | 10r | 85 | 89 | C |

## QU'AITI

| | | | | | | |
|---|---|---|---|---|---|---|
| 1966 Oct. 6 | Various Fish | | 15fl | | 84 | C |

## RAS AL KHAIMA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1971 | Koran Angelfish | Pomacanthus semicirculatus | 30d | | 658 | C |
| 1971 | Longnose Butterflyfish | Chelmon rostratus | 50d | | 659 | C |
| 1971 | Threadfin Butterflyfish | Chaetodon auriga | 60d | | 660 | C |
| 1971 | Bannerfish | Heniochus acuminatus | 90d | | 661 | C |
| 1971 | Regal Angelfish | Pygoplites diacanthus | 145d | | 662 | C |
| 1971 | Oranda Goldfish | Carassius auratus | 155d | | 663 | C |
| 1971 | Siamese Fighting Fish | Betta splendens | 5r (souvenir sheet) | | 664 | C |

## RHODESIA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1966 Jan. 16 | Tiger Fish | Hydrocynus vittatus | 2sh 6p (1) | 218 | 159 | C |
| 1966 Feb. 9 | Tiger Fish | Hydrocynus vittatus | 2sh 6p | 233 | 173 | C |
| 1968 | Tiger Fish | Hydrocynus vittatus | dual currency (2) | | | |

(1) issue of Southern Rhodesia, overprinted "Independence 11th November 1965"
(2) Stanley Gibbon's Catalog Number 412

## RHODESIA & NYASALAND

| | | | | | | |
|---|---|---|---|---|---|---|
| 1959 Aug. 12 | Eagle clutching fish in the coat-of-arms | | 1 pound | 171 | 32 | C |

## RIO MUNI

| | | | | | | |
|---|---|---|---|---|---|---|
| 1964 July 1 | Dwarf Crocodile | | 15¢ | 35 | 513 | H |
| 1964 July 1 | Dwarf Crocodile | | 50¢ | 38 | 515 | H |
| 1964 July 1 | Dwarf Crocodile | | 3p | 41 | 519 | H |
| 1964 Nov. 23 | Goliath Frog | | 50¢ | 44 | 522 | H |
| 1964 Nov. 23 | Goliath Frog | | 1.50p | 45 | 524 | H |
| 1968 April 25 | Stylized Crab | Macropipus holsatus | 1p | 70 | 548 | F |

## ROMANIA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1956 Mar. 28 | Trout | Salmo trutta | 35b | 1084 | 1766 | C |
| 1956 Mar. 28 | Duck, Pintail | | 3.25L | 1092 | 1774 | B |
| 1957 Dec. 27 | Black-winged Stilt | | 5b | 1194 | 1892 | B |
| 1957 Dec. 27 | Great White Egret | | 10b | 1195 | 1893 | B |
| 1957 Dec. 27 | White Spoonbill | | 20b | 1196 | 1894 | B |
| 1957 Dec. 27 | Sturgeon | Acipenser stellatus | 50b | 1197 | 1895 | B |
| 1957 Dec. 27 | White Pelican | | 1.30L | 1199 | 1897 | B |
| 1957 Dec. 27 | Kingfisher | | 3.30L | C53 | 1898 | B |
| 1957 Dec. 27 | Sea Eagle | | 5L | C54 | 1899 | B |
| 1960 Mar. 3 | Salmon | Salmo huncho | 20b | 1315 | 2035 | C |
| 1960 Mar. 3 | Shelduck | Tadorna tadorna | 1.20L | 1317 | 2037 | B |
| 1960 Dec. 5 | Carp | Cyprinus carpio | 10b | 1388 | 2129 | C |
| 1960 Dec. 5 | Pike Perch | Stizostedion lucioperca | 20b | 1389 | 2130 | C |
| 1960 Dec. 5 | Black Sea Turbot | Scophthalmus maeoticus | 40b | 1390 | 2131 | C |
| 1960 Dec. 5 | Black Sea Herring | Caspialosa kessleri pontica | 55b | 1391 | 2132 | C |
| 1960 Dec. 5 | Wels | Siluris glanis | 1L | 1392 | 2133 | C |
| 1960 Dec. 5 | Sterlet | Acipenser ruthenus | 1.20L | 1393 | 2134 | C |
| 1960 Dec. 5 | Sturgeon, Beluga | Huso huso | 1.60L | 1394 | 2135 | C |
| 1963 May 23 | Goose | | 40b | 1555 | 2351 | B |
| 1963 May 23 | Duck | | 70b | 1557 | 2353 | B |
| 1964 May 10 | Hogfish | Scorpaena porcus | 5b | 1635 | 2464 | C |
| 1964 May 10 | Blenny | Blennius pavo | 10b | 1636 | 2465 | C |
| 1964 May 10 | Scad | Trachurus mediterraneus | 20b | 1637 | 2466 | C |
| 1964 May 10 | Russian Sturgeon | Acipenser guldenstaedti | 40b | 1638 | 2467 | C |
| 1964 May 10 | Black Sea Seahorses | Hippocampus hippocampus | 50b | 1639 | 2468 | C |
| 1964 May 10 | Yellow Gunnard | Trigla lucema | 55b | 1640 | 2469 | C |

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| | | ROMANIA - Continued | | | | |
| 1964 May 10 | Beluga, Giant Sturgeon | Huso huso | 1L | 1641 | 2470 | C |
| 1964 May 10 | Stringray | Trygon pastinaca | 3.20L | 1642 | 2471 | C |
| 1964 Sept. 28 | Black Swans | | 10b | 1678 | 2511 | B |
| 1965 Sept. 10 | Eurasian Snipe | Capella gallinago | 20b | 1769 | 2601 | B |
| 1965 Sept. 10 | Mallard Duck | Anas platyrhinchos | 55b | 1771 | 2603 | B |
| 1965 Sept. 10 | White-footed Goose | Anser albifrons | 60b | 1772 | 2604 | B |
| 1965 Sept. 10 | Eurasian Crane | Grus grus | 1L | 1773 | 2605 | B |
| 1965 Sept. 10 | Glossy Ibis | Plegadis falcinellus | 1.20L | 1774 | 2606 | B |
| 1965 Sept. 10 | Mute Swan | Cygnus olor | 1.35L | 1775 | 2607 | B |
| 1965 Sept. 10 | White Pelican | Pelecanus onocrotalus | 3.25L | 1776 | 2608 | B |
| 1966 Aug. 25 | Feather Foil | Hottonia palustris | 5b | 1865 | 2692 | D |
| 1966 Aug. 25 | Hornwort | Ceratophylum submersum | 10b | 1866 | 2693 | D |
| 1966 Aug. 25 | Freshwater Algae | Aldrovanda vesiculosa | 20b | 1867 | 2694 | D |
| 1966 Aug. 25 | FW Algae & Snail | Collitriche verna | 40b | 1868 | 2695 | D, A |
| 1966 Aug. 25 | Italian Eel Grass; Crawfish | Vallisneria spiralis; Astacus astacus | 55b | 1869 | 2696 | F, D |
| 1966 Aug. 25 | Frogbit Waterweed | Elodia canadensis | 1L | 1870 | 2697 | D |
| 1966 Aug. 25 | Mare's Tail | Hippurus vulgaris | 1.55L | 1871 | 1698 | D |
| 1966 Aug. 25 | Water Milfoil; Mussel | Myriophyllum spicatum; Mytilus | 3.25L | 1872 | 1699 | A, D |
| 1966 Oct. 15 | River Crawfish | Astacus astacus | 5b | 1879 | 2706 | F |
| 1966 Oct. 15 | Netted Dog Whelk | Nassarius reticulata | 10b | 1880 | 2707 | A |
| 1966 Oct. 15 | Stone Crab | Pachygrapsus marmoratus | 20b | 1881 | 2708 | F |
| 1966 Oct. 15 | Pond Snail | Campulaea trizona | 40b | 1882 | 2709 | A |
| 1966 Oct. 15 | Edible Snail | Helix lucorum | 55b | 1883 | 2710 | A |
| 1966 Oct. 15 | Mediterranean Mussel | Mytilus galloprovincialis | 1.35L | 1884 | 2711 | A |
| 1966 Oct. 15 | Pond Snail | Lymnaea stagnalis | 1.75L | 1885 | 2712 | A |
| 1966 Oct. 15 | Freshwater Mussels | Anodonta cygnaea | 3.25L | 1886 | 2713 | A |
| 1967 Mar. 10 | Osprey | Pandion haliaetus | 75b | 1903 | 2739 | B |
| 1968 Dec. 20 | Mute Swan | | 10b | 2047 | 2900 | B |
| 1968 Dec. 20 | European Stilts | | 20b | 2048 | 2901 | B |
| 1968 Dec. 20 | Sheldrakes | Tadorna tadorna | 40b | 2049 | 2902 | B |
| 1968 Dec. 20 | Egret | | 55b | 2050 | 2903 | B |
| 1973 Feb. 5 | Red-breasted Goose | | 1.85L | 2400 | | B |
| | | RUANDA URUNDI | | | | |
| 1948 | Ngadimuashi Female Mask with shell decoration | | 40¢ | 94 | 162 | A |
| 1948 | Ngadimuashi Female Mask with shell decoration | | 1.25fr | 99 | 167 | A |
| 1948 | Ngadimuashi Female Mask with shell decoration | | 6fr | 104 | 173 | A |
| 1949 | above issue with new value surcharged | | 4fr on 6fr | 110 | 179 | A |
| 1949 | above issue with new value surcharged | | 6.50fr on 6fr | 111 | 180 | A |
| 1960 Feb. 19 | Stylized fish on Honeycomb Map of Africa | | 3fr | 151 | 229 | C |
| 1960 Feb. 19 | Stylized fish on Honeycomb Map of Africa | | 3fr | 152 | 230 | C |
| | | RUSSIA | | | | |
| 1956 April 25 | Salmon in border design | | 1r | 1815 | 1923 | C |
| 1957 Mar. 28 | Mallard Duck | | 30k | 1921 | 2049 | B |
| 1959 April 10 | Japanese drawing by Korin: Man riding carp | | 40k | 2191 | 2329 | C |
| 1959 July 16 | Sturgeon | Acipenser guldenstaedti | 40k | 2222 | 2352B | C |
| 1959 July 16 | Chum Salmon | Oncorhynchus keta | 60k | 2223 | 2353 | C |
| 1960 Sept. 3 | Pikeperch | Stizostedion lucioperca | 20k | 2375 | 2352 | C |
| 1960 Sept. 3 | Fur Seal | | 25k | 2376 | 2352A | E |
| 1960 Sept. 3 | Whitefish | Coregonus lavaretus | 40k | 2377 | 2352C | C |
| 1961 Jan. 10 | Beaver | | 6k | 2430 | 2575 | E |
| 1961 Aug. 30 | Geese and Swans | | 1k | 2468 | 2619 | B |
| 1962 Aug. 28 | Carp; Bream | Cyprinus carpio; Abramis brama | 4k | 2632 | 2790 | C |
| 1962 Aug. 28 | Atlantic Salmon | Salmo salar | 6k | 2633 | 2791 | C |
| 1962 Dec. 26 | Red-breasted Geese | | 4k | 2684 | 2845 | B |
| 1962 Dec. 26 | Snow Geese | | 6k | 2685 | 2846 | B |
| 1962 Dec. 26 | White Storks | | 10k | 2686 | 2847 | B |
| 1962 Dec. 26 | Greater Flamingoes | | 16k | 2687 | 2848 | B |
| 1964 June 18 | Pelican | | 10k | 2909 | 3064 | B |
| 1966 June 25 | Stylized Fish on map | | 4k | 3218 | 3372 | C |
| 1966 Sept. 25 | Greyling | Thymallus arcticus baicalensis | 2k | 3240 | 3395 | C |
| 1966 Sept. 25 | Baikal Sturgeon | Acipenser baeri baicalensis | 4k | 3241 | 3396 | C |
| 1966 Sept. 25 | Baikal Whitefish | Coregobus lavaretus baicalensis | 12k | 3244 | 3399 | C |
| 1966 Sept. 25 | Baikal Cisco | Coregonus autumnalis migratorius | 10k | 3243 | 3398 | C |

## RUSSIA - Continued

| | | | | | | |
|---|---|---|---|---|---|---|
| 1967 Feb. 28 | Floating Fishing Factory and Fish | | 6k | 3303 | 3455 | C |
| 1967 Feb. 28 | Refrigeration Ship and Fish | | 6k | 3304 | 3456 | C |
| 1967 Feb. 28 | Crab canning ship and fish; Alaska King Crab | | 6k | 3305 | 3457 | F, C |
| 1967 Feb. 28 | Trawler and Fish | | 6k | 3306 | 3458 | C |
| 1967 Feb. 28 | Black Sea seiner and fish | | 6k | 3307 | 3459 | C |
| 1967 Sept. 20 | Muskrat (Beaver?) | | 10k | 3374 | 3523 | E |
| 1968 Oct. 16 | Great White Egrets (Herons?) | | 6k | 3519 | 3676 | B |
| 1968 Oct. 16 | European Spoonbill & Glossy Ibis | | 10k | 3522 | 3678 | B |
| 1969 Sept. 3 | Statue of Ebisu and Fish (Minkus give date of issue as 9/9/69) | | 20k | 3638 | 3791 | C |
| 1969 Sept. 10 | Black Swan (Stork?) | | 4k | 3640 | 3793 | B |
| 1970 Aug. 19 | Mandarin Ducks | | 4k | 3759 | 3910 | B |
| 1971 Aug. 12 | Common Dolphins | | 4k | 3882 | 4024 | E |
| 1971 Aug. 12 | Sea Otter | | 6k | 3883 | 4025 | E |
| 1971 Aug. 12 | Narwhals | | 10k | 3884 | 4026 | E |
| 1971 Aug. 12 | Walrus | | 12k | 3885 | 4027 | E |
| 1971 Aug. 12 | Ribbon Seals | | 14k | 3886 | 4028 | E |
| 1972 Jan. 12 | Crested Cormorant (Bering's Cormorant) | | 4k | 3939 | 4088 | B |
| 1972 Jan. 12 | Ross Gull | | 6k | 3940 | 4089 | B |
| 1972 Jan. 12 | White-cheek Geese or Barnacle Geese | | 10k | 3941 | 4090 | B |
| 1972 Jan. 12 | Spectacled Eider Ducks | | 12k | 3942 | 4091 | B |
| 1972 Jan. 12 | Black-headed Gull | | 16k | 3943 | 4092 | B |
| 1973 July 26 | Beavers | | 6k | 4096 | 4249 | E |
| 1973 Dec. 12 | Still life painting by Frans Snyders, includes a lobster | | 4k | 4141 | 4300 | F |
| 1974 April 24 | Stylized Fish included in design | | 6k | 4189 | | C |
| 1975 | Russian Sturgeon | Acipenser guldenstaedti | 3k | 4343 | | C |
| 1975 | Eel and Black Sea Murex | Angulla anguilla | 6k | 4344 | | C, A |
| 1975 | Alaska King Crab | Paralithodes kamtshaica | 16k | 4347 | | F |
| 1975 | | Chrysiptera hollisi | 20k | 4348 | | C |

## RWANDA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1965 April 28 | Cranes, Hippos and Egrets | | 40¢ | 102 | 105 | E, B |
| 1965 April 28 | Anhinga and Cormorants | | 40fr | 107 | 110 | B |
| 1967 Dec. 18 | Woodland Kingfisher | | 40¢ | 239 | 247 | B |
| 1972 Mar. 20 | Hippopotamus | | 6fr | 449 | 467 | E |
| 1973 Sept. 3 | Six-banded Distich | Distichodus sexfasciatus | 20¢ | 541 | | C |
| 1973 Sept. 3 | Little Tigerfish | Hydrocynus forskali | 30¢ | 542 | | C |
| 1973 Sept. 3 | Upside-down Catfish | Synodontis angelicus | 50¢ | 543 | | C |
| 1973 Sept. 3 | Nile Mouthbreeder | Tilapia nilotica | 1fr | 544 | | C |
| 1973 Sept. 3 | African Lungfish | Protopterus | 2fr | 545 | | C |
| 1973 Sept. 3 | Pareutropius mondevillei | | 6fr | 546 | | C |
| 1973 Sept. 3 | Congo Tetra | Micralestes interruptus | 40fr | 547 | | C |
| 1973 Sept. 3 | Golden Julie | Julidochromis ornatus | 150fr | 548 | | C |
| 1973 Sept. 3 | Six-banded Distich | Distichpdus sexfasciatus | 100fr | 549, souvenir sheet | | C |
| 1975 June 30 | White Pelican | | 20¢ | | | B |
| 1975 June 30 | Malachite Martin-Diver | | 30¢ | | | B |
| 1975 June 30 | Goliath Heron | | 50¢ | | | B |
| 1975 June 30 | African Jabiru | | 1fr | | | B |
| 1975 June 30 | Red Anhinga | | 10fr | | | B |
| 1975 June 30 | Sacred Ibis and Bronze-mantled Ibis | | 34fr | | | B |
| 1975 June 30 | Hartlaub's Duck | | 80fr | | | B |
| 1975 June 30 | Flamingoes | | 40fr, souvenir sheet | | | B |
| 1975 June 30 | Crowned Cranes | | 60fr, souvenir sheet | | | B |

## RYUKYU ISLANDS

| | | | | | | |
|---|---|---|---|---|---|---|
| 1950 Jan. 21 | Sea Shells | Lambis lambis; Conus fulmen; Chlamys swifti | 5y | 13 | 13 | A |
| 1950 Feb. 15 | Seahorse according to Minkus; Scott says it's a dragon | | 5y | E1 | 17 | C? |
| 1959 Aug. 10 | Moorish Idol | Zanclus canescens | 3¢ | 59 | 73 | C |
| 1959 Aug. 10 | Bonnet; Nautilus; Cone | Phalium bandatum; Nautilis (1) | 8¢ | 60 | 74 | A |
| 1959 Aug. 10 | Parasol Jellyfish | Dactylometra pacifera | 17¢ | 62 | 76 | J |
| 1960 Dec. 1 | Egret (Scott); Heron (Minkus) | | 3¢ | 74 | 99 | B |
| 1961 Aug. 23 | Moorish Idol | Zanclus canescens | 3¢ | 77 | 83B | C |
| 1961 | Bonnet; Nautilus; Cone | Phalium bandatum; Nautilus (1) | 8¢ | 78 | 84 | A |
| 1961 | Parasol Jellyfish | Dactylometra pacifera | 17¢ | 80 | 86 | J |
| 1965 Oct. 20 | Turtle | Cyclemys flavomarginata | 3¢ | 136 | 165 | H |
| 1966 Jan. 20 | Hawk's Bill Turtle | Eretmochelyl imbricata | 3¢ | 137 | 166 | H |
| 1966 April 20 | Turtle | Geomyda spengleri japonica | 3¢ | 138 | 167 | H |
| 1966 Dec. 20 | Clown Fish | Amphiprion frenatus | 3¢ | 151 | 180 | C |

## RYUKYU ISLANDS - Continued

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| 1967 Jan. 10 | Spotted Box Fish | Ostracion tuberculatus | 3¢ | 152 | 181 | C |
| 1967 April 10 | Forceps Fish | Forcipiger longirostris | 3¢ | 153 | 182 | C |
| 1967 May 10 | Spotted Triggerfish | Balistoides conspicillum | 3¢ | 154 | 183 | C |
| 1967 June 10 | Saddleback Butterflyfish | Chaetodon ephippium | 3¢ | 155 | 184 | C |
| 1967 July 20 | Episcopal Miter | Mitra mitra | 3¢ | 157 | 187 | A |
| 1967 Aug. 15 | Venus Comb Murex | Murex triremis | 3¢ | 158 | 188 | A |
| 1968 Jan. 18 | Spider Conch | Lambis rugosa | 3¢ | 159 | 189 | A |
| 1968 Feb. 20 | Green Turban Snail | Turbo marmoratus | 3¢ | 160 | 190 | A |
| 1968 June 5 | Conch | Strombus bulla | 3¢ | 161 | 191 | A |
| 1968 Oct. 10 | Soldier Crab | Mictyris longicarpus | 3¢ | 173 | 203 | F |
| 1969 Feb. 5 | Fiddler Crab | Uca dubia | 3¢ | 174 | 204 | F |
| 1969 Mar. 5 | Crab | Baptozius vinosus | 3¢ | 175 | 205 | F' |
| 1969 May 15 | Land Crab | Cardisoma carnifex | 3¢ | 176 | 206 | F |
| 1969 June 2 | Ghost Crab | Ocypode ceratophthalma | 3¢ | 177 | 207 | F |
| 1970 May 22 | Underwater Observatory; design includes numerous fish | | 3¢ | 200 | 230 | C |
| 1972 Mar. 30 | Coral reef, with sea star | Linkia laevigata | 5¢ | 225 | 254 | J, G |
| 1972 April 14 | Seashore, sea birds | | 5¢ | 226 | 255 | B |
| | (1) Nautilus pompilius and Conus textile | | | | | |

## ST. HELENA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1961 Dec. 12 | Cunning Fish | Chaetodon sanctaehelenae | 1p | 159 | 154 | C |
| 1961 Dec. 12 | Brittle Star | Ophiothrix roseacaerulans | 2p | 161 | 156 | G |
| 1961 Dec. 12 | Trumpet Fish | Aulostomus strigosus | 7p | 165 | 160 | C |
| 1961 Dec. 12 | Keeled Feather Star | Tropiometra carinata | 10p | 166 | 161 | G |
| 1961 Dec. 12 | Fairy Terns | | 1sh 6p | 168 | 163 | B |
| 1961 Dec. 12 | Orange Sea Star | Narcissia trigonaria helenae | 2sh 6p | 169 | 164 | G |
| 1961 Dec. 12 | Deepwater Bull's-eye | Priacanthus boops | 10sh | 171 | 166 | C |
| 1961 Oct. 12 | Mackerel | Decapterus longimanus | 5¢ + 6p (1) | B2 | 151 | C |
| 1961 Oct. 12 | Stumpnose | Seriolella christophersoni | 7½¢ + 9p (1) | B3 | 152 | C |
| 1961 Oct. 12 | Bluefish | Seriolella antarctica | 10¢ + 1 sh (1) | B4 | 153 | C |
| 1961 Oct. 12 | Tristan Crayfish | Jasus tristani | 2½¢ + 3p (1) | B1 | 150 | F |
| 1965 Jan. 4 | Cunning Fish | Chaetodon sanctaehelenae | 1p (2) | 177 | 171 | C |
| 1965 Jan. 4 | Fairy Tern | | 1sh 6p (2) | 179 | 174 | B |
| 1972 Nov. 20 | St. Helena Plover & White Fairy Tern | | 2p (3) | 271 | 266 | B |
| 1972 Nov. 20 | St. Helena Plover & White Fairy Tern | | 16p (3) | 272 | 267 | B |
| 1975 | shorebird | Aegialitis sanctaehelenae | 12p | | | B |
| 1975 | sculpin | Scorpaenia mellissii | 25p | | | C |

(1) overprinted "St. Helena / Tristan Relief" on stamps of Tristan da Cunha
(2) overprinted "First Local Post / 4th January 1965"
(3) Silver Wedding Issue, featuring Queen Elizabeth II and Prince Philip

## ST. KITTS & NEVIS

| | | | | | | |
|---|---|---|---|---|---|---|
| 1969 Feb. 25 | Tarpon Snook and Coral | Centropomus pectinatus | 6¢ | 195 | 206 | J, C |
| 1969 Feb. 25 | Needlefish | Strongylura sp. | 12¢ | 196 | 207 | C |
| 1969 Feb. 25 | Horse-Eye Jack & Coral | Caranx latus | 40¢ | 197 | 208 | J, C |
| 1969 Feb. 25 | Red Snapper & Coral | Lutjanus campechanus | 50¢ | 198 | 209 | J, C |
| 1972 Nov. 20 | Queen Elizabeth II, Prince Philip and Pelicans | | 20¢ (1) | 257 | 268 | B |
| 1972 Nov. 20 | Queen Elizabeth II, Prince Philip and Pelicans | | 25¢ (1) | 258 | 269 | B |

(1) Silver Wedding issue

## ST. PIERRE AND MIQUELON

Note: The Fulmar Petrel appears on a number of early issues; Scott Nos. 88-103; Minkus 93-99 and 106-114; 1909-30 B
Note: Stylized Pecten in upper corners on Scott Nos. 104-109 and 122-131; Minkus 100-102, 115-117, 134, 135, 139-43 A
Note: Fish appear in border designs of Scott Nos. 136-7, 140-3, 146-7, 149-50, 152-3, 156-7, 159-62, 164, 207, 210 C
1932-34 Minkus Nos. 159-60, 163-66, 167-73, 177-81/ 211, 216-220 C
Note: Gulls appear in border designs of Scott Nos. 138-9, 144-5, 148, 151, 154-5, 158, 163, 208-9, 212-15, 221 B
1932-34 Minkus Nos. 161-2, 167-8, 171, 174, 177-8, 181 B

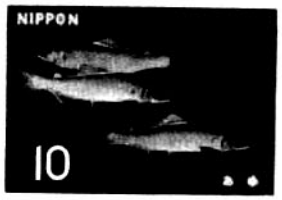
| | | | | | | |
|---|---|---|---|---|---|---|
| 1938 Nov. 17 | Codfish | Gadus morhua | 5¢ to 3fr | J32-41 | 240-49 | C |
| 1942 | Codfish | Gadus morhua | 5¢ to 3fr | J48-67 | 370-79 | C |
| 1947 Oct. 6 | Codfish | Gadus morhua | 60¢ | 328 | 424 | C |
| 1947 Oct. 6 | Codfish | Gadus morhua | 80¢ | 329 | 425 | C |
| 1947 Oct. 6 | Codfish | Gadus morhua | 1fr | 330 | 426 | C |
| 1947 Oct. 6 | Weighing Fish | | 3fr | 334 | 430 | C |
| 1947 Oct. 6 | Weighing Fish | | 3.60fr | 335 | 431 | C |


10


10


NIPPON
10


10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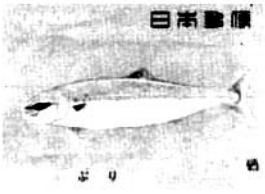
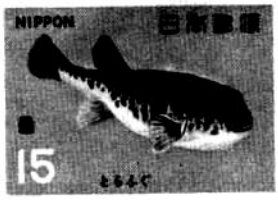

日本郵便


NIPPON
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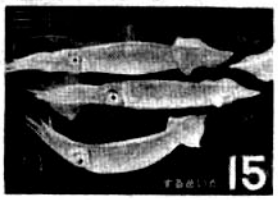
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10
MONGOLIA


REPUBLIQUE
30F
POSTES
Lutjanus goreensis
GABONAISE


REPUBLIQUE
GABONAISE


BUAJA
1966
4,-+0,75
REPUBLIK INDONESIA


PENJU
1966
6,-+1,-
REPUBLIK INDONESIA


REPUBLIQUE
GABONAISE


REPUBLIQUE
120F
POSTES
GABONAISE


Tristan da Cunha
22


Tristan da Cunha
3P

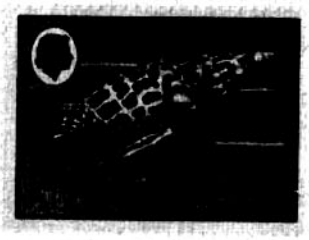

日本郵便


CANADA
15
CENTS


Tristan da Cunha


Tristan da Cunha
20P


AITUTAKI COOK ISLANDS




AITUTAKI COOK ISLANDS


RF
1F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3F


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60
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دبي
60
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TEN DOLLARS
COOK ISLANDS


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GRENADA
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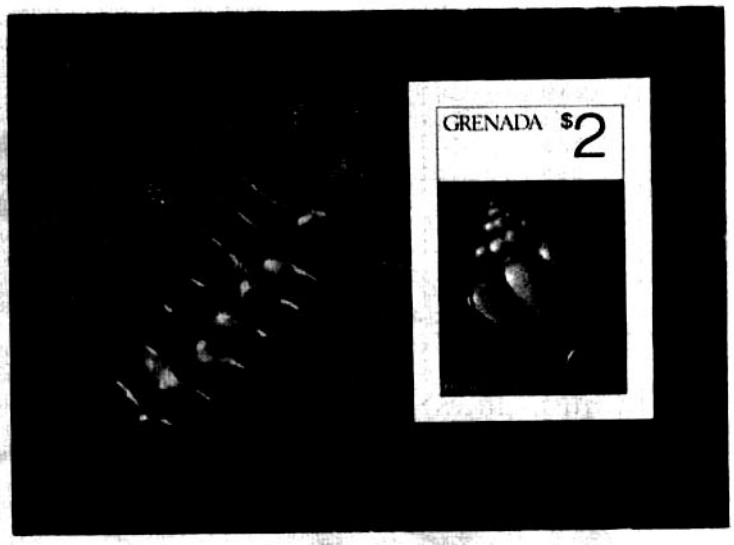
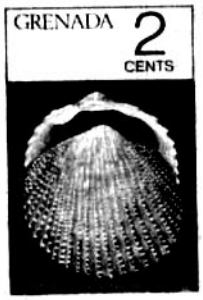
CENT


GRENADA
$2


GRENADA
2
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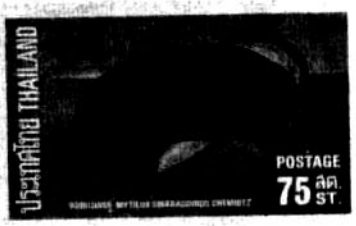
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ประเทศไทย THAILAND
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GRENADA
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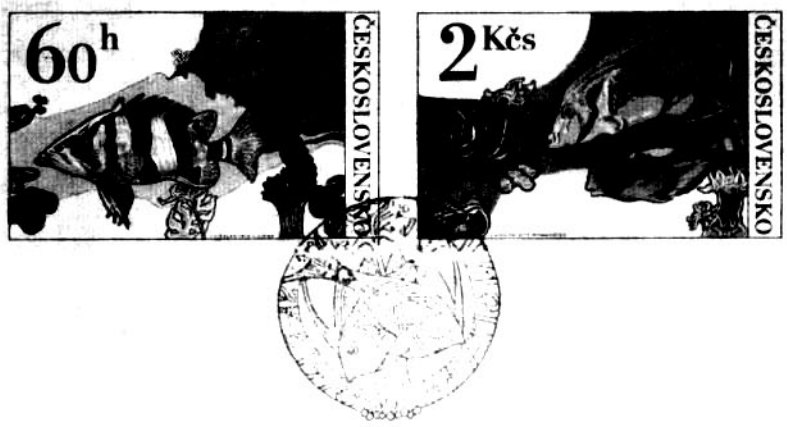
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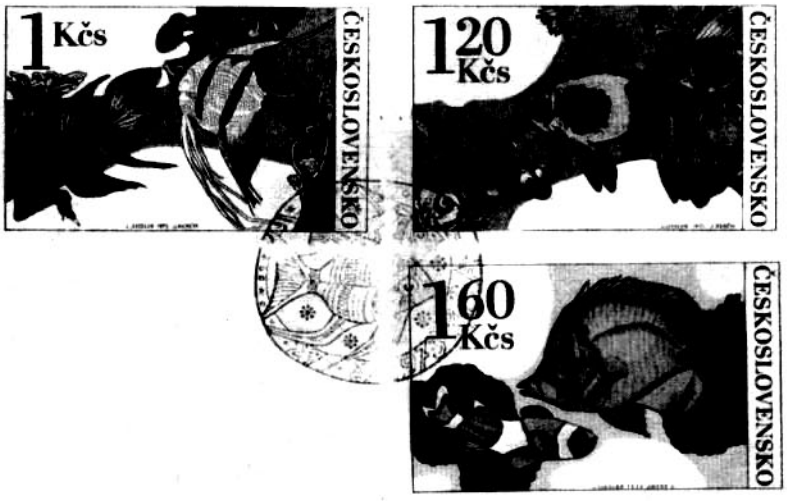
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160
Kčs
ČESKOSLOVENSKO

## ST. PIERRE & MIQUELON - Continued

| | | | | | | |
|---|---|---|---|---|---|---|
| 1947 Oct. 6 | Weighing Fish | | 4fr | 336 | 432 | C |
| 1947 Oct. 6 | Trawler, Dinghy & Fish | | 5fr | 337 | 433 | C |
| 1947 Oct. 6 | Trawler, Dinghy & Fish | | 6fr | 338 | 434 | C |
| 1947 Oct. 6 | Trawler, Dinghy & Fish | | 10fr | 339 | 435 | C |
| 1957 Nov. 4 | Codfish | Gadus morhua | 40¢ | 351 | 464 | C |
| 1957 Nov. 4 | Codfish | Gadus morhua | 1fr | 352 | 465 | C |
| 1957 Nov. 4 | Codfish | Gadus morhua | 2fr | 353 | 466 | C |
| 1963 Mar. 4 | Eider Ducks | | 50¢ | 362 | 491 | B |
| 1963 Mar. 4 | Blue-winged Teal (Mallards?) | | 6fr | 365 | 484 | B |
| 1969 Oct. 15 | Ringed Seals | | 1fr | 389 | 526 | E |
| 1969 Oct. 15 | Sperm Whales | | 3fr | 390 | 527 | E |
| 1969 Oct. 15 | Pilot Whales | | 4fr | 391 | 528 | E |
| 1969 Oct. 15 | Common Dolphins | | 6fr | 392 | 529 | E |
| 1972 Mar. 7 | Haddock | Melanogrammus aeglefinus | 2fr | 419 | 561 | C |
| 1972 Mar. 7 | American Plaice | Hippoglossoides platessoides | 3fr | 420 | 562 | C |
| 1972 Mar. 7 | Deepwater Redfish | Sebastes mentalla | 5fr | 421 | 563 | C |
| 1972 Mar. 7 | Atlantic Codfish | Gadus morhua | 10fr | 422 | 564 | C |
| 1973 Jan. 1 | Old Squaws Ducks | | 6¢ | 423 | 566 | B |
| 1973 Jan. 1 | Puffins | Macareux moine | 10¢ | 424 | 567 | B |
| 1973 Jan. 1 | Old Squaws Ducks | | 40¢ | 426 | 569 | B |
| 1973 Jan. 1 | Puffins | Macareux moine | 70¢ | 427 | 570 | B |
| 1974 | Shark, Cod, Guitarfish | | 10¢ | 437 | | C |
| 1975 Aug. 5 | Codfish | Gadus morhua | 4fr | | | C |

## ST. THOMAS

| | | | | | | |
|---|---|---|---|---|---|---|
| 1962 Jan. 18 | Stylized Shark & Fishes | | 20e | 379 | 467 | C |

## ST. VINCENT

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Jan. 21 | Green Heron | | 1¢ | 280 | 262 | B |
| 1971 Aug. 4 | Fish are part of design | | 12¢ | 316 | 298 | C |
| 1971 Aug. 4 | Fish are part of design | | 40¢ | 317 | 299 | C |
| 1975 April 10 | French Angelfish & White Coral | Pomacanthus arcuatus; Acropora | 1¢ | 407 | | J, C |
| 1975 April 10 | Spotfin Butterflyfish & Coral | Chaetodon ocellatus; Acropora | 2¢ | 408 | | J, C |
| 1975 April 10 | Horse-eyed Jack, seaweeds | Caranx latus | 3¢ | 409 | | D, C |
| 1975 April 10 | Mackerel | Scomberomorus maculatus | 4¢ | 410 | | C |
| 1975 April 10 | French Grunt; Acropora Coral | Haemulon flavolineatum | 5¢ | 411 | | J, C |
| 1975 April 10 | Spotted Goatfish; Green Feathery Seaweed | Pseudupeneus maculatus | 6¢ | 412 | | D, C |
| 1975 April 10 | Ballyhoo | Hemirumphus brasiliensis | 8¢ | 413 | | C |
| 1975 April 10 | Sperm Whale & Squid | Physeter catadon | 10¢ | 414 | | E, A |
| 1975 April 10 | Humpback Whale | Megaptera nodosa | 12¢ | 415 | | E |
| 1975 April 10 | Cowfish | Lactophrys quadricornis | 15¢ | 416 | | C |
| 1975 April 10 | Queen Angelfish | Holacanthus ciliaris | 20¢ | 417 | | C |
| 1975 April 10 | Princess Parrotfish | Scarus taeniopterus | 25¢ | 418 | | C |
| 1975 April 10 | Red Hind | Epinephelus guttatus | 35¢ | 419 | | C |
| 1975 April 10 | Atlantic Flying Fish | Exocoetus volitans | 45¢ | 420 | | C |
| 1975 April 10 | Porkfish | Anisatremus virginicus | 50¢ | 421 | | C |
| 1975 April 10 | Queen Triggerfish; Coral | Balistes vetula; Acropora sp. | $1.00 | 422 | | J, C |
| 1975 April 10 | Sailfish | Istiophorus platypterus | $2.50 | 423 | | C |
| 1975 April 10 | Dolphinfish | Coryphaena hippurus | $5.00 | 424 | | C |
| 1975 April 10 | Blue Marlin | Makaira nigricans | $10.00 | 425 | | C19 |

## SALVADOR

| | | | | | | |
|---|---|---|---|---|---|---|
| 1954 June 1 | Stylized fish in left & right borders | | 1¢ | 653 | 1201 | C |
| 1954 June 1 | Stylized fish in left & right borders | | 7¢ | 664 | 1212 | C |
| 1954 June 1 | Stylized fish in left & right borders | | 5¢ | C151 | 1223 | C |
| 1957 Nov. | Stylized fish in left & right borders | | 6¢ on 7¢ | 692 | 1274 | C |
| 1971 April 28 | Tiger Shark | Galeocerado cuvieri | 10¢ | 824 | 1525 | C |
| 1971 April 28 | Swordfish | Xiphias gladius | 40¢ | 825 | 1526 | C |
| 1971 April 28 | Smalltooth Sawfish | Pristis pectinatus | 30¢ | C302 | 1527 | C |
| 1971 April 28 | Atlantic Sailfish | Istiophorus albicans | 1C | C303 | 1528 | C |

## SAMOA - GERMAN OCCUPATION

Note: Stylized Pecten shells on following issues have values: Scott Nos. 66-69, 73; Minkus Nos. 61-64, N67 Dec. 1900 A

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| | | **SAMOA** | | | | |
| 1965 Dec. 29 | Red-tailed Tropic Bird | | 8p | C1 | 179 | B |
| 1965 Dec. 29 | Flying Fish | Cypselurus sp. | 2sh | C2 | 180 | C |
| 1972 Oct. 18 | Bull Conch | Strombus taurus | 1s | 369 | 306 | A |
| 1972 Oct. 18 | Skipjack Tuna | Katsuwonus pelamis | 3s | 371 | 308 | C |
| 1972 Oct. 18 | Painted Crab | Carpilius maculatus | 4s | 372 | 309 | F |
| 1972 Oct. 18 | Tifitifi Fish | Chaetodon trifasciatus | 5s | 373 | 310 | C |
| 1972 Oct. 18 | Triton Shell | Charonia tritonis | 10s | 375 | 312 | A |
| 1972 Oct. 18 | Spiny Lobster | Panulirus penicillatus | 50s | 377 | 314 | F |
| 1973 June 18 | Green Turtle | Chelonia mydas | $2.00 | 378A | | H |
| 1974 | UPU souvenir sheet, stylized pecten design in center | | 50¢ | | | A |
| 1975 Sept. 30 | Native blowing shell trumpet | | 30s | | | A |
| | | **SAMOA - BRITISH - WESTERN SAMOA** | | | | |
| 1914 | German Samoa issues, surcharged - stylized pectens with values | | | 110-113A | 77-80 | A |
| | | **SAN MARINO** | | | | |
| 1960 Jan. 28 | European Kingfisher | 25L | 25L | 452 | 775 | B |
| 1959 Feb. 12 | Sea Gull | | 5L | C101 | 740 | B |
| 1959 Feb. 12 | Mallard | | 15L | C103 | 742 | B |
| 1966 Aug. 27 | Stone Bass | Polyprion americanus | 1L | 643 | 988 | C |
| 1966 Aug. 27 | Cuckoo Wrasse | Labrus ossifagus | 2L | 644 | 989 | C |
| 1966 Aug. 27 | Dolphin | | 3L | 645 | 990 | E |
| 1966 Aug. 27 | John Dory | Zeus faber | 4L | 646 | 991 | C |
| 1966 Aug. 27 | Octopus | Octopus vulgaris | 5L | 647 | 992 | A |
| 1966 Aug. 27 | Orange Scorpionfish | Scorpaena scrofa | 10L | 648 | 993 | C |
| 1966 Aug. 27 | Electric Ray | Torpedo torpedo | 40L | 649 | 994 | C |
| 1966 Aug. 27 | Jellyfish | Pelagia noctiluca | 90L | 650 | 995 | J |
| 1966 Aug. 27 | Seahorse | Hippocampus guttulatus | 115L | 651 | 996 | C |
| 1966 Aug. 27 | Sea Bream | Dentex dentex | 130L | 652 | 997 | C |
| 1970 Feb. 18 | Stylized Crab (sign of Zodiac) | | 4L | 719 | 1064 | F |
| 1970 Feb. 18 | Stylized Fish (sign of Zodiac) | | 180L | 727 | 1072 | C |
| | | **SENEGAL** | | | | |
| 1960 Nov. 19 | Fish Eagle | | 500fr | C30 | 272 | B |
| 1966 Feb. 26 | Tuna | Euthynnus alleteratus | 20fr | 270 | 370 | C |
| 1966 Feb. 26 | Grouper | Epinephelus aeneus | 30fr | 271 | 371 | C |
| 1966 Feb. 26 | Wrasse | Thalassoma pavo | 50fr | 272 | 372 | C |
| 1966 Feb. 26 | Blue Parrotfish | Scarus hoefleri | 100fr | 273 | 373 | C |
| 1967 Oct. 7 | Hippopotamus | | 100fr | 293 | 423 | E |
| 1968 July 13 | Pied Kingfisher | | 5fr | 300 | 437 | B |
| 1968 May 18 | Green Lobster | Panulirus regius | 10fr | 301 | 433 | F |
| 1968 May 18 | Sea Cicada | Scyllarides latus | 20fr | 303 | 434 | F |
| 1968 May 18 | Shrimp | Penaeus duorarum | 35fr | 304 | 435 | F |
| 1968 May 18 | Goose Barnacles | Mitella pollicipes | 100fr | 306 | 436 | F |
| 1968 Dec. 21 | African Jacana | | 15fr | 302 | 447 | B |
| 1968 Dec. 21 | Knob-billed Goose | | 300fr | C56 | 448 | B |
| 1969 April 26 | Snake-neck Bird | Ahinga rufa | 70fr | 305 | 455 | B |
| 1970 Feb. 21 | Bottle-nosed Dolphina | | 50fr | 326 | 479 | E |
| 1972 Nov. 25 | Radiolaria (marine) | Amphicrasoedum murrayanum | 5fr | 375 | 570 | K |
| 1972 Nov. 25 | Protozoa (marine) | Pterocanium tyicolpium | 10fr | 376 | 571 | K |
| 1972 Nov. 25 | Radiolaria (marine) | Ceratospyris polygora | 15fr | 377 | 572 | K |
| 1972 Nov. 25 | Swordfish | Xiphias gladius | 50fr | C115 | 573 | C |
| 1972 Nov. 25 | Common Rorqual Whale | Balaenoptera physalis | 125fr | C118 | 574 | E |
| 1973 July 28 | Marine Radiolaria | Cortiniscus typicus | 20fr | 378 | 590 | K |
| 1973 July 28 | Marine Radiolaria | Theopera cortina | 30fr | 379 | 591 | K |
| 1973 July 28 | Killer Whale | Orcinus orca | 65fr | C116 | 592 | E |
| 1973 July 28 | Whale Shark | Rhincodon typus | 75fr | C117 | 593 | C |
| 1974 Feb. 9 | Grebe Geese | | 1fr | C130 | 608 | B |
| 1974 Feb. 9 | Spoonbills | | 2fr | C131 | 609 | B |
| 1974 Feb. 9 | Crested Cranes | | 3fr | C132 | 610 | B |
| 1974 Feb. 9 | Egrets | | 4fr | C133 | 611 | B |
| 1974 Feb. 9 | Pink Flamingoes | | 250fr | C134 | 612 | B |
| 1974 Feb. 9 | Pink Flamingoes | | 250fr | C135 | 613 | B |

## SEYCHELLES

| | | | | | | |
|---|---|---|---|---|---|---|
| 1952 Mar. 3 | Swordfish | Istiophorus platypterus | 2¢ | 157 | 161 | C |
| 1952 Mar. 3 | Swordfish | Istiophorus platypterus | 40¢ | 164 | 168 | C |
| 1952 Mar. 3 | Swordfish | Istiophorus platypterus | 1r | 171 | 175 | C |
| 1954 Feb. 2 | Swordfish | Istiophorus platypterus | 2¢ | 173 | 177 | C |
| 1954 Feb. 2 | Swordfish | Istiophorus platypterus | 40¢ | 182 | 186 | C |
| 1954 Feb. 2 | Swordfish | Istiophorus platypterus | 10r | 190 | 194 | C |
| 1962 Feb. 21 | Jackfish | Caranx gymnostethoides | 15¢ | 200 | 204 | C |
| 1962 Feb. 21 | Swordfish | Istiophorus platypterus | 70¢ | 206 | 210 | C |
| 1965 April 15 | Swordfish | Istiophorus platypterus | 75¢ on 70¢ | 217 | 222 | C |
| 1967 Dec. 2 | Tiger, Mole & Money Cowries | C. tigris, talpa, moneta | 15¢ | 237 | 244 | A |
| 1967 Dec. 2 | Cones | C. textile, betulinus & virgo | 40¢ | 238 | 245 | A |
| 1967 Dec. 2 | Arthritic Spider Conch | Lambis arthritica | 1r | 239 | 246 | A |
| 1967 Dec. 2 | Triton &.Subulate Auger | Charonia tritonia; Terebra subulata | 2.25r | 240 | 247 | A |
| 1970 April 27 | Gulls part of design | | 20¢ | 272 | 282 | B |
| 1970 April 27 | Flying Fish in design | Cypselurus furcatus | 50¢ | 273 | 283 | C |
| 1970 April 27 | Fishes, Corals in scene of sea bottom | | 3.50r | 275 | 285 | J, C |
| 1972 Nov. 20 | Queen Elizabeth, Prince Philip, | Leaping Sailfish & Tortoise | 95¢ (1) | 309 | 321 | C |
| 1972 Nov. 20 | Queen Elizabeth, Prince Philip, | Leaping Sailfish & Tortoise | 1.50r (1) | 310 | 322 | C |
| 1974 | Soldierfish | Holocentrus seychellensis | 20¢ | 313 | | C |
| 1974 | Filefish | Oxymonacanthus longirostris | 50¢ | 314 | | C |
| 1974 | Butterflyfish | Heniochus acuminatus | 95¢ | 315 | | C |
| 1974 | Oriental Grunt | Gatein orientalis | 1.50r | 316 | | C |

## SHARJAH

| | | | | | | |
|---|---|---|---|---|---|---|
| 1966 May 2 | Butterflyfish; Distorsio | Heniochus acuminatus; Distorsio | 1np | | 196 | C,A |
| 1966 May 2 | Surgeonfish; Harp Shell | Zebrasoma velliferum | 2np | | 197 | C, A |
| 1966 May 2 | Imperial Angelfish | Pomacanthus imperator | 3np | | 198 | C |
| 1966 May 2 | African Mouthbreeder | Tilapia melanopleura | 4np | | 199 | C |
| 1966 May 2 | Orange-stripe Triggerfish | Balistapus undulatus | 5np | | 200 | C |
| 1966 May 2 | Moonfish | Monodactylus argenteus | 15np | | 201 | C |
| 1966 May 2 | Clown Butterflyfish; Coral | Chaetodon ornatissimus | 20np | | 202 | J, C |
| 1966 May 2 | Moorish Idol | Zanclus canescens | 30np | | 203 | C |
| 1966 May 2 | Regal Angelfish | Pygoplites diacanthus | 40np | | 204 | C |
| 1966 May 2 | African Mouthbreeder | Tilapia melanopleura | 50np | | 205 | C |
| 1966 May 2 | Orange-stripe Triggerfish | Balistapus undulatus | 75np | | 206 | C |
| 1966 May 2 | Regal Angelfish | Pugoplites diacanthus | 1r | | 207 | C |
| 1966 May 2 | Moorish Idol | Zanzlus canescens | 2r | | 208 | C |
| 1966 May 2 | Clown Butterflyfish; Coral | Chaetodon ornatissimus | 3r | | 209 | J, C |
| 1966 May 2 | Moonfish | Monodactylys argenteus | 4r | | 210 | C |
| 1966 May 2 | Imperial Angelfish | Pomacanthus imperator | 5r | | 211 | C |
| 1966 May 2 | Butterflyfish & Distorsio | Heniochus acuminatus | 10r | | 212 | C, A |
| NOTE: Above values are also available overprinted with new currency, overprinted in 1967 | | | | | | C |
| 1972 May 20 | Longnose Butterflyfish | Chelmon rostratus | 25dh | | 961 | C |
| 1972 May 20 | Marine Angelfish | Pomacanthodes chrysurus | 35dh | | 962 | C |
| 1972 May 20 | Red-striped Triggerfish | Balistapus undulatus | 50dh | | 963 | C |
| 1972 May 20 | Pennant Coralfish | Heniochus acuminatus | 65dh | | 964 | C |
| 1972 May 20 | Tiger Barb | Barbus tetrazona | 1r | | 965 | C |
| 1972 May 20 | Freshwater Angelfish | Pterophyllum scalare | 3r | | 966 | C |
| 1972 May 20 | sheet containing one each of above six (miniature sheet) | | | | | C |
| 1972 May 20 | Clown Anemone Fish | Amphiprion percula | 1r | | 967 | C |
| 1972 May 20 | Telescope Goldfish | Carassius auratus | 1r | | 968 | C |
| 1972 May 20 | Bubble-eye Goldfish | Carassius auratus | 1r | | 969 | C |
| 1972 May 20 | Golden Butterflyfish | Chaetodon semilarvatus | 1r | | 970 | C |
| 1972 May 20 | miniature sheet, containing one of each of above four designs also issued | | | | | C |

## SINGAPORE

| | | | | | | |
|---|---|---|---|---|---|---|
| 1962 Mar. 21 | Yellow Seahorse | Hippocampus kuda | 2¢ | 53 | 68 | C |
| 1962 Mar. 21 | Tiger Barb | Barbus pentazona hexazona | 4¢ | 54 | 69 | C |
| 1962 Mar. 21 | Clown Anemone Fish | Amphiprion percula | 5¢ | 55 | 70 | J, C |
| 1962 Mar. 21 | Archer Fish | Toxotes jaculatrix | 6¢ | 56 | 71 | C |
| 1962 Mar. 21 | Red Rasbora | Rasbora heteromorpha | 10¢ | 57 | 73 | C |
| 1962 Mar. 21 | Longnose Butterflyfish | Chelmon rostratus | 20¢ | 58 | 74 | C |
| 1962 Mar. 21 | Three-spot Gourami | Trichogaster trichopterus | 25¢ | 59 | 75 | C |
| 1963 Mar. 10 | White-breasted Kingfisher | | $1.00 | 67 | 79 | B |
| 1963 Mar. 10 | White-bellied Sea Eagle | | $5.00 | 69 | 81 | B |
| 1970 Mar. 15 | Various Shells; Red Algae, Rock Barnacles (1) | | 15¢ | 112 | 134 | D, F, J, A |

(1) shells include: Tridacna gigas; Green Mussel, Perna viridis; Jacknife Clam, Solen grandis

## SINGAPORE - Continued

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| 1970 Mar. 15 | Fantail Guppy | Poecilia reticulata | 30¢ | 113 | 135 | C |
| 1970 Mar. 15 | Flamingo & Crested Crane | | 75¢ | 114 | 136 | B |
| 1970 Mar. 15 | souvenir sheet with above three stamps included | | | 115A | 138 | A, B, C |
| 1974 | Fantail Guppies | Poecilia reticulata | 5¢ | 206 | | C |
| 1974 | Fantail Guppies | Poecilia reticulata | 10¢ | 207 | | C |
| 1974 | Fantail Guppies | Poecilia reticulata | 35¢ | 208 | | C |
| 1974 | Fantail Guppies | Poecilia reticulata | $1.00 | 209 | | C |

## SOAY

| | | | | | | |
|---|---|---|---|---|---|---|
| 1967 | Blue Mussel | Mytilus edulis | 6p | 43* | | A |
| 1967 | Cockle Shell | Trachycardium species | 6p | 44* | | A |
| 1967 | Whelk Shell | Buccinum species | 1sh 9p | 45* | | A |
| 1967 | Oyster | Ostrea species | 2sh 6p | 46* | | A |
| 1967 | above issues in miniature sheet and overprinted, in red, "Europa" | | 5sh | 47* | | A |
| 1967 | above issues in imperforate miniature sheet; red overprint "Europa" | | 5sh | 48* | | A |
| 1967 | above issues in a deluxe miniature sheet | | | 49* | | A |

* officially these are bogus issues; numbers are from Gerald Rosen English Local Issues Catalog

## SOMALIA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1932 | Hippopotamus | | 10L | 153 | 279 | E |
| 1934 | Hippopotamus issue, overprinted "Onoranze Al Duca Decli Abruzzi" | | | 161 | 287 | E |
| 1959 Sept. 4 | White Stork | Ciconia ciconia | 5¢ | 230 | 488 | B |
| 1959 Sept. 4 | Saddle-billed Stork | Ephippiorynchus senegalensis | 10¢ | 231 | 489 | B |
| 1959 Sept. 4 | Sacred Ibis | Treskiornis aethiopicus | 15¢ | 232 | 490 | B |
| 1959 Sept. 4 | Pink-backed Pelican | Pelicanus rufescens | 25¢ | 233 | 491 | B |
| 1959 Sept. 4 | Marabou Stork | Leptiptilos crumeniferus | 1.20sh | C61 | 492 | B |
| 1959 Sept. 4 | Great Egret | Casmerodius albus | 2sh | C62 | 493 | B |
| 1960 April 7 | Stork in flight | | 1.50sh | C67 | 506 | B |
| 1962 April 26 | Blue Angelfish | Pomacanthus semicirculatus | 25¢ | 261 | 542 | C |
| 1962 April 26 | Razor Fish | Novaculichthys taeniourus | 40¢ | 262 | 543 | C |
| 1962 April 26 | Emperor Snapper | Lutianus sebae | 2.70sh | C84 | 544 | C |
| 1966 Dec. 1 | Crocodile | | 25¢ | 295 | 603 | H |
| 1967 Nov. 15 | Sweetlips Grunt | Gaterin gaterinus | 35¢ | 316 | 625 | C |
| 1967 Nov. 15 | Golden Butterflyfish | Chaetodon semilarvatus | 50¢ | 317 | 626 | C |
| 1967 Nov. 15 | Dusky-finned Bigeye | Priacanthus hamrur | 1sh | 318 | 627 | C |
| 1967 Nov. 15 | Grouper | Epinephelus summana | 1.80sh | 319 | 628 | C |
| 1968 Nov. 1 | Egret (Heron?) | | 35¢ | C104 | 650 | B |
| 1969 Mar. 25 | Storks are part of design | | 1.80sh | 346 | 660 | B |

## SOMALI COAST

| | | | | | | |
|---|---|---|---|---|---|---|
| 1915-1933 | Value is printed in a scallop shell | | | 85-110 | 171-80,185-200 | A |
| 1922-1927 | above issues with new values overprinted | | | 120-128 | 217-224 | A |
| 1943 | several of above values, overprinted "France Libre" | | | 187-190 | 326-330 | A |
| 1959 Nov. 23 | Blue Parrotfish | Scarus guttatus | 1fr | 275 | 465 | C |
| 1959 Nov. 23 | Longfinned Butterflyfish | Heniochus acuminatus | 2fr | 276 | 466 | C |
| 1959 Nov. 23 | Marlin | Makaira nigricans | 3fr | 277 | 467 | C |
| 1959 Nov. 23 | Spotted Trunkfish | Ostracion tuberculatus | 4fr | 278 | 468 | C |
| 1959 Nov. 23 | African Eagle Ray | Myliobatis cervus | 5fr | 279 | 469 | C |
| 1959 Nov. 23 | Undulate Triggerfish | Balistapus undulatus | 20fr | 280 | 473 | C |
| 1959 Nov. 23 | Yellow-edge Triggerfish | Pseudobalistes flavomarginatus | 25fr | 281 | 474 | C |
| 1959 Nov. 23 | Smooth Hammerhead Shark | Sphyrna zygaena | 60fr | 282 | 477 | C |
| 1960 Oct. 24 | Flamingo | | 10fr | 283 | 471 | B |
| 1960 Oct. 24 | Sacred Ibis | | 30fr | 285 | 475 | B |
| 1960 Oct. 24 | Pink-backed Pelican | | 75fr | 286 | 478 | B |
| 1962 Mar. 24 | Great Carangue | Caranx ignobilis | 6fr | 289 | 470 | C |
| 1962 Dec. 24 | Black-lipped Pearl Shell | Pinctada margaritifera | 8fr | 293 | 493 | A |
| 1962 Dec. 24 | Fluted Giant Clam | Tridacna squamosa | 10fr | 294 | 494 | A |
| 1962 Dec. 24 | Three-Horned Conch | Strombus tricornis | 25fr | 295 | 495 | A |
| 1962 Dec. 24 | Knobbed Top | Trochus dentatus | 30fr | 296 | 496 | A |
| 1962 Dec. 24 | Arabian Tibia | Tibia insulaechorab | 60fr | C28 | 500 | A |
| 1962 Dec. 24 | Spider Conch | Lambis lambis | 100fr | C29 | 501 | A |
| 1963 Nov. 30 | Star & Stony Corals | Montastrea sp.; Madrepora sp. | 5fr | 298 | 491 | J |
| 1963 Nov. 30 | Organ-pipe Coral; Red Sea Star | Tubipora species | 6fr | 299 | 492 | G, J |
| 1963 Nov. 30 | Stinging Coral; Red Sea Stars | Millepora species | 40fr | C26 | 498 | G, J |

## SOMALI COAST - Continued

| | | | | | | |
|---|---|---|---|---|---|---|
| 1963 Nov. 30 | Brain Coral | Meandrina meandrites | 55fr | C27 | 499 | J |
| 1963 Nov. 30 | Branch Coral | Polypier rameux | 200fr | C30 | 502 | J |
| 1966 May 26 | Feather Star & Stinging Coral | Antedon spinifera; Millepora sp. | 8fr | C42 | 527 | J, G |
| 1966 May 26 | Regal Angelfish; Red Coral | Pygoplites diacanthus (1) | 25fr | C43 | 528 | J, C |
| 1966 May 26 | Angelfish & Soft Coral | Pomacanthus filamentosus | 40fr | C44 | 529 | J, C |
| 1966 May 26 | Tomato Clown; Finger Coral | Amphiprion ephippium; Porites sp. | 50fr | C45 | 530 | J, C |
| 1966 May 26 | Spined Squirrelfish | Holocentrus spinifer | 70fr | C46 | 531 | C |
| 1966 May 26 | Surgeonfish; Hard Coral | Acanthurus sohal; Acropora sp. | 80fr | C47 | 532 | J, C |
| 1966 May 26 | Lionfish & Hard Coral | Pterois lunulata; Acropora sp. | 100fr | C48 | 533 | J, C |

(1) Corallium rubrum

## SOUTH AFRICA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1974 | "Jaljoen" | Coracinus capensis | 6¢ | 413 | | C |
| 1974 | Zebrafish | Diplodus trifasciatus | 7¢ | 414 | | C |
| 1974 | Batfish | Platax pinnatus | 9¢ | 415 | | C |
| 1974 | Moorish Idol | Zanclus canescens | 10¢ | 416 | | C |
| 1974 | Sea Bream | Chrysoblephus laticeps | 14¢ | 417 | | C |

## SOUTH GEORGIA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1963 July 17 | Sperm Whale & Giant Squid | Architeuthis harveyi (squid) | 2p | 3 | 3 | E, A |
| 1963 July 17 | Penguins | | 2½p | 4 | 4 | B |
| 1963 July 17 | Fur Seals | | 3p | 5 | 5 | E |
| 1963 July 17 | Finback Whale | | 4p | 6 | 6 | E |
| 1963 July 17 | Elephant Seals | | 5½p | 7 | 7 | E |
| 1963 July 17 | Sooty Albatross | | 6p | 8 | 8 | B |
| 1963 July 17 | Leopard Seal | | 1sh | 10 | 10 | E |
| 1963 July 17 | Wandering Albatross | | 2sh 6p | 12 | 12 | B |
| 1963 July 17 | Elephant & Fur Seals | | 5sh | 13 | 13 | E |
| 1963 July 17 | Plankton & Krill | Euphausia superba (krill) | 10sh | 14 | 14 | K, F |
| 1963 July 17 | Blue Whale | | 1 pound | 15 | 15 | E |
| 1971 Feb.15 | Sperm Whale & Giant Squid | Architeuthis harveyi (squid) | 2¢ on 2p | 20 | 20 | E, A |
| 1971 Feb. 15 | Penguins | | 2½¢ on 2½p | 21 | 21 | B |
| 1971 Feb. 15 | Fur Seals | | 3¢ on 3p | 22 | 22 | E |
| 1971 Feb. 15 | Finback Whale | | 4¢ on 4p | 23 | 23 | E |
| 1971 Feb. 15 | Elephant Seals | | 1½¢ on 5½p | 19 | 19 | E |
| 1971 Feb. 15 | Sooty Albatross | | 5¢ on 6p | 24 | 24 | B |
| 1971 Feb. 15 | Leopard Seal | | 7½¢ on 1sh | 26 | 26 | E |
| 1971 Feb. 15 | Wandering Albatross | | 15¢ on 2sh 6p | 28 | 28 | B |
| 1971 Feb. 15 | Elephant & Fur Seals | | 25¢ on 5sh | 29 | 29 | E |
| 1971 Feb. 15 | Plankton & Krill | Euphausia superba (krill) | 50¢ on 10sh | 30 | 30 | K, F |
| 1972 Nov. 20 | Queen Elizabeth II, Prince Philip, Elephant Seal & King Penguin | | 5p (1) | 35 | 35 | E, B |
| 1972 Nov. 20 | | | 10p (1) | 36 | 36 | E, B |

(1) Silver Wedding issues

## SOUTH MOLUCCAS

NOTE: These issues are not considered more than mere labels as they were never used for authorised postal purposes

| | | | | |
|---|---|---|---|---|
| 1954 | Yellow Seahorse | Hippocampus kuda | 1k | C |
| 1954 | Cherry Barb | Barbus titteya | 2k | C |
| 1954 | Sumatra Barb | Barbus tetrazona tetrazona | 2½k | C |
| 1954 | Maroon Anemone Fish | Premnas biaculeatus | 3k | C |
| 1954 | Spotted Scat | Scatophagus argus | 4k | C |
| 1954 | Siamese Fighting Fish | Betta splendens | 5k | C |
| 1954 | Dwarf Gourami | Colisa lalia | 7½k | C |
| 1954 | Firemouth | Epiplatys dageti | 10k | C |
| 1954 | Longfinned Butterflyfish | Heniochus acuminatus | 12½k | C |
| 1954 | Sumatra Barb | Barbus tetrazona tetrazona | 15k | C |
| 1954 | Lionfish, Turkeyfish | Pterois volitans | 17½k | C |
| 1954 | Yellow Seahorse | Hippocampus kuda | 20k | C |
| 1954 | Longfinned Butterflyfish | Heniochus acuminatus | 22½k | C |
| 1954 | Lionfish, Turkeyfish | Pterois volitans | 25k | C |
| 1954 | Dwarf Gourami | Colisa lalia | 30k | C |
| 1954 | Firemouth | Epiplatys dageti | 35k | C |

We appreciate hearing of any issues we may have missed, please write: P.O. Box 33; Port Gamble, Washington U.S.A. 98364!

## SOUTH WEST AFRICA - GERMAN

| Year, Month, Day | Subject | Scientific Name | Value | Scott's No. | Minkus No. | Cat. |
|---|---|---|---|---|---|---|
| 1900 | Stylized scallops in bottom corners with values, 4 issues | | | 22-25 | | A |
| 1906 | Stylized scallops in bottom corners with values, 1 issue | | | 34 | | A |
| 1911 | Stylized scallops in bottom corners with values, 1 issue | | | 32 | | A |
| 1912 | Stylized scallops in bottom corners with values, 1 issue | | | 31 | | A |
| 1919 | Stylized scallops in bottom corners with values, 1 issue | | | 33 | | A |

## SOUTH-WEST AFRICA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1961 Feb. 14 | Spotted Pilchard | Sardinops ocellata | 3½¢ | 272 | 256 | C |
| 1967 | Spotted Pilchard | Sardinops ocellata | 3½¢ | 307 | 276 | C |

## SPAIN

| | | | | | | |
|---|---|---|---|---|---|---|
| 1937 Aug. 1 | Scallop shells in upper corners | | 30¢ | 636 | 896 | A |
| 1937 Aug. 1 | Scallop shells in upper corners | | 1p | 637 | 897 | A |
| 1965 July 25 | Scallop shells on pilgrim's hat | | 1p | 1310 | 1713 | A |
| 1965 July 25 | Scallop shells on pilgrim's hat | | 2p | 1311 | 1714 | A |
| 1971 Jan. 4 | Scallop shell somewhere in design of each issue, Holy Year Compostela | | | 1642-1662 | 2052-2057 and 2091-2097 | A |
| 1975 July 9 | Salamander | Salamandra salamandra | 1pta | | | H |
| 1975 July 9 | Triton | Triturus mormoratus | 2pta | | | H |
| 1975 July 9 | Tree Frog | Hyla arborea | 3pta | | | H |
| 1975 July 9 | Toad | Alytes obstetricans | 6pta | | | H |
| 1975 July 9 | Leap Frog | Rana temporaria | 7pta | | | H |
| 1972 Sept. 14 | Aquatic Mole | | 1p | 1729 | 2146 | E |
| 1973 July 3 | Black Stork | Ciconia nigra | 2p | 1762 | 2179 | B |
| 1973 Sept. 12 | Fish in net | | 2p | 1771 | 2188 | C |

## SPANISH GUINEA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1952 Nov. 23 | Hornbills | | 5¢ + 5¢ | B22 | 386 | B |
| 1952 Nov. 23 | Hornbills | | 10¢ + 5¢ | B23 | 387 | B |
| 1952 Nov. 23 | Hornbills | | 60¢ + 15¢ | B24 | 388 | B |
| 1954 Nov. 23 | Swimming Turtle | Chelonia mydas | 15¢ | 335 | 408 | H |
| 1954 Nov. 23 | Smith's Congo Shark | Leptocharias smithi | 60¢ | 336 | 409 | C |
| 1954 Nov. 23 | Turtle | Chelonia mydas | 5¢ + 5¢ | B31 | 406 | H |
| 1954 Nov. 23 | Smith's Congo Shark | Leptocharias smithi | 10¢ + 5¢ | B32 | 407 | C |

## SPANISH SAHARA

| | | | | | | |
|---|---|---|---|---|---|---|
| 1953 Nov. 23 | Orange Scorpionfish | Scorpaena scrofa | 5¢ + 5¢ | B27 | 108 | C |
| 1953 Nov. 23 | Banded Sargo | Diplodus trifasciatus | 10¢ + 5¢ | B28 | 109 | C |
| 1953 Nov. 23 | Orange Scorpionfish | Scorpaena scrofa | 15¢ | 70 | 110 | C |
| 1953 Nov. 23 | Banded Sargo | Diplodus trifasciatus | 60¢ | 71 | 111 | C |
| 1954 Nov. 23 | Blotchwing Flyingfish | Cypselurus heterurus | 5¢ + 5¢ | B31 | 116 | C |
| 1954 Nov. 23 | Gilthead | Sparus auratus | 10¢ + 5¢ | B32 | 117 | C |
| 1954 Nov. 23 | Blotchwing Flyingfish | Cypselurus heterurus | 15¢ | 74 | 118 | C |
| 1954 Nov. 23 | Gilthead | Sparus auratus | 60¢ | 75 | 119 | C |
| 1957 June | Madagascar Sea Eagle | | 15¢ + 5¢ | B42 | 140 | B |
| 1958 Mar. 6 | Stork and Arms of Valencia | | 10¢ + 5¢ | B45 | 146 | B |
| 1958 Mar. 6 | Stork and Arms of Valencia | | 15¢ + 10¢ | B46 | 147 | B |
| 1958 Mar. 6 | Stork and Arms of Valencia | | 50¢ + 10¢ | B47 | 148 | B |
| 1959 Oct. 15 | Gray Heron | | 25¢ | 94 | 160 | B |
| 1959 Oct. 15 | Seagull | | 75¢ | 96 | 162 | B |
| 1959 Oct. 15 | Gray Heron | | 1p | 97 | 163 | B |
| 1959 Oct. 15 | Seagull | | 2p | 99 | 164 | B |
| 1959 Oct. 15 | Gray Heron | | 3p | 100 | 166 | B |
| 1959 Oct. 15 | Seagull | | 10p | 102 | 168 | B |
| 1962 April 10 | Clock Fish and Ruby Coral | Chaetodipterus goreensis (1) | 25¢ | 126 | 209 | J, C |
| 1962 April 10 | Avia or Sea Perch | Epinephelus goreensis | 50¢ | 127 | 210 | C |
| 1962 April 10 | Clock Fish and Ruby Coral | Chaetodipterus goreensis (1) | 1p | 128 | 211 | J, C |
| 1964 Mar. 6 | John Dory | Zeus faber | 25¢ | 139 | 222 | C |
| 1964 Mar. 6 | Plain Bonito | Orcynopsis unicolor | 50¢ | 140 | 223 | C |
| 1964 Mar. 6 | John Dory | Zeus faber | 1p | 141 | 224 | C |
| 1966 Nov. 23 | Long-finned Tuna | Parathynnus obesus | 10¢ | 169 | 252 | C |

(1) coral: Corallium rubrum

(To be continued)

# An ABC System for the Recent Gastropoda

By HANS-HELLMUT STEIN

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Conomitra | A3 o3 o2 | Coudylicia | A2 o4 o3 | Cryptoconus | A3 o4 o1 | . cyclopoma | A2 o1 o1 |
| Conomurex | A2 1o o3 | Coulboisia | A2 o5 16 | . cryptoctenidia | A1 o2 o3 | . cycloprocta | B4 o1 o2 |
| Conophora | B3 o5 o1 | Couthouyella | A2 o7 o1 | Cryptogemma | A3 o4 o1 | . cyclops | A3 o2 o4 |
| Conopleura | A3 o4 o4 | Couthouyia | A2 o8 o1 | Cryptogirasia | B3 12 o4 | Cycloryx | A2 o1 o5 |
| Conorbis | A3 o4 o4 | Coxia | B3 12 o1 | . cryptomitra | A3 o4 o4 | Cycloscala | A2 o6 o1 |
| Conotalopia | A1 o3 o1 | Coxiella | A2 o4 o4 | . cryptomphalus | B2 o3 o2 | . cyclostoma Drap. | A2 o3 o3 |
| Conotrochus | A1 o3 o1 | Cranopsis | A1 o1 o4 | Cryptomphalus | B3 14 o5 | . cyclostoma Lam. | A2 o6 o1 |
| . conovulus | B2 o4 o1 | . craspedaria | B3 14 o5 | Cryptonatica | A2 13 o1 | Cyclostrema | A1 o3 o6 |
| Conradia | A2 o8 o1 ? | Craspedoma | A2 o1 o4 | Cryptophthalmus | B1 o2 o2 | Cyclostremella | A2 o4 18 |
| Constantia | A2 o6 o1 | .craspedotriton | A3 o1 o1 | Cryptosemelus | B3 12 o4 | Cyclostremiscus | A2 o4 18 |
| . contorta | B3 14 o5 | Craspedotropis | A2 o1 o1 | Cryptospira | A3 o3 o7 | Cyclosurus | A2 o1 o1 |
| Contraconus | A3 o4 o2 | Craspedotus | A1 o3 o1 | . cryptostoma Theo. | B3 12 o4 | Cyclothyca | A2 o9 o2 |
| Contumax | A2 o5 11 | Crassiclava | A3 o4 o1 | .cryptostoma Blain. | A2 13 o1 | Cyclotopsis | A2 o3 o3 |
| Conualevia | B8 o2 o2 | Crassilabrum | A3 o1 o1 | Cryptostracon | B3 14 o4 | Cyclotropis | A2 o4 o6 |
| Conuber | A2 13 o1 | Crassispira | A3 o4 o1 | . cryptothyra | A2 11 o4 | Cyclotus | A2 o1 o1 |
| Conuginella | A3 o3 o7 | Crassispirella | A3 o4 o1 | Cryptozona | B3 12 o4 | Cyerce | B6 o3 o2 |
| Conugulella | B3 o8 o1 | Crassopleura | A3 o4 o1 | Crystallopsis | B3 14 o2 | Cylichna | B1 o3 o1 |
| . conulema | B3 12 o4 | Cratena | B8 11 o2 | . crystallus | B3 11 o2 | Cylichnatys | B1 o2 o1 |
| Conulinus | B3 o3 o6 | Crawfordia | A3 o3 o6 | Crytaustenia | B3 12 o4 | Cylichnella | B1 o3 o1 |
| Conulopolita | B3 11 o2 | Cremides | A1 o1 o4 | Ctenocolpus | A2 o5 o1 | Cylichnidia | B3 o7 o1 |
| . conulus Fitz. | B3 12 o2 | . cremnobates Blanf. | A2 o3 o2 | Ctenodoris | B8 o2 o2 | Cylichnina | B1 o2 o5 |
| . conulus Nardo | A1 o3 o1 | .cremnobates Swain. | B2 o4 o1 | Ctenoglypta | B3 12 o2 | Cylichnium | B1 o2 o2 |
| Conus | A3 o4 o2 | Cremnoconchus | A2 o3 o2 | Ctenophila | B3 12 o2 | Cylinder | A3 o4 o2 |
| Cookia | A1 o3 o4 | . cremula | B1 o6 o1 | . ctenopoma | A2 o3 o4 | Cylindra | A3 o3 o2 |
| . coptacis | A3 o2 o2 | . crenea | B3 14 o5 | Ctenosculum | A2 11 o8 | . cylindrella Swain. part. | A3 o4 o2 |
| . coptocheilus | A2 o1 o6 | Crenisclava | B3 o6 o2 | Ctiloceras | A2 o5 o6 | | B1 o3 o1 |
| Coralastele | A1 o3 o1 | Crenilabium | B1 o1 o1 | Ctilopsis | B8 o6 1o | . cylindrella Pfeif. | B3 o9 o5 |
| . corallina | A3 o1 o1 | Crepidula | A2 o9 o3 | Cubaedomus | A2 o5 13 | . cylindrina | B3 o7 o2 |
| Coralliobia | A3 o1 o2 | . crepimarginula | A1 o1 o4 | Cubaviana | A1 o4 o6 | Cylindrscala | A2 o6 o1 |
| Coralliofusus | A3 o1 o2 | Crepipatella | A2 o9 o3 | . cufea | B8 o3 o3 | Cylindrobulla | B1 o5 o1 |
| Coralliophila | A3 o1 o2 | Creseis | B1 o7 o2 | . culmenella | B2 o3 o2 | . cylindrocaulis | B4 o1 o2 |
| Corambe | B8 o4 o3 | . cressa Westl. | B3 14 o5 | . cuma | A3 o1 o1 | . cylindrocaulus | B4 o1 o1 |
| Corambella | B8 o4 o3 | Cretica | B3 o6 o2 | Cumanotus | B8 11 o1 | Cylindromitra | A3 o3 o2 |
| Corasia | B3 14 o3 | . cretozonites | B3 11 o2 | Cumia | A3 o2 o2 | Cylindropalaina | A2 o1 o4 |
| . cordieria | A3 o4 o4 | Cribraria | A2 11 o1 | . cumingia | B2 o3 o4 | Cylindrophaedusa | B3 o6 o2 |
| Corena | A2 o4 o3 | Cricophorus | A2 o1 o1 | . cumopsis | A3 o1 o1 | Cylindrotis | B2 o4 o1 |
| . coretus | B2 o3 o2 | Crimora | B8 o3 o3 | Cupidoliva | A3 o2 o1 | Cylindrovertilla | B3 o3 o1 |
| Coriandria | A2 o4 o3 | . cristaria | B3 o6 o2 | Cupulella | B3 o7 o2 | Cylindrus | B3 14 o4 |
| Corilla | B3 o6 o4 | Cristataria | B3 o6 o2 | . currus | A2 14 o2 | Cyllene | A3 o2 o4 |
| Coriocella | A2 11 o4 | Cristigibba | B3 14 o2 | . curticaulis | B4 o1 o2 | Cylotropis | A2 o4 o6 |
| . corneola part. | B3 14 o5 | Crithe | A3 o3 o7 | Curvella | B3 o7 o2 | Cymakra | A3 o4 o1 |
| Corolla | B1 o8 o3 | Crocidopoma | A2 o1 o1 | Curveulima | A2 o7 o1 | Cymatiella | A2 14 o2 |
| . corona | A1 o4 o1 | Cronia | A3 o1 o1 | Cuspeulima | A2 o7 o1 | Cymatium | A2 14 o2 |
| Corona | B3 o9 o3 | Crossata | A2 14 o3 | . custiphorus | B6 o3 o3 | Cymatoma | A2 14 o2 |
| . coronaria | B3 14 o5 | Crossea | A1 o3 o7 | Cuthona | B8 11 o2 | Cymatophos | A3 o2 o2 |
| . coronaxis | A3 o4 o2 | Crossilla | A2 o4 o6 | Cuthonella | B8 11 o2 | Cymatopteryx | A2 o4 18 |
| Coroniscala | A2 o6 o1 | Crosslandia | B8 o6 o4 | . cuvieria | B1 o7 o2 | Cymatosyrinx | A3 o4 o1 |
| Corrugata | B3 o6 o2 | Crossopoma | A2 o1 o1 | . cuvierina | B1 o7 o2 | Cymatriton | A2 14 o2 |
| . corus | B3 o6 o6 | Crossostephanus | B3 o9 o5 | Cyana | A1 o4 o8 | Cymba | A3 o3 o5 |
| Coryda | B3 14 o1 | Crucibulum | A2 o9 o3 | . cyanogaster | B7 o1 o2 | . cymbancilla | A3 o3 o1 |
| . coryna | B3 o3 o4 | . crucita | B3 o6 o2 | Cyathopoma | A2 o1 o1 | Cymbiola | A3 o3 o5 |
| Coryphella | B8 12 o2 | Cruciturricula | A3 o4 o1 | Cyclamastra | B3 o2 o2 | Cymbiolacca | A3 o3 o5 |
| Coryphellina | B8 12 o2 | . cryotritonium | A2 14 o2 | Cyclauchen | B3 o9 o5 | Cymbiolena | A3 o3 o5 |
| Cosmetalepas | A1 o1 o4 | . crypta | A2 o9 o3 | . cyclina | B1 o3 o1 | Cymbiolista | A3 o3 o5 |
| Cosmioconcha | A3 o2 o1 | Cryptaegis | B3 14 o2 | . cycliscus | B3 12 o3 | Cymbium | A3 o3 o5 |
| Cossmannica | B1 o6 o1 | . cryptaulus | A2 o1 o1 | Cyclocantha | A1 o3 o4 | Cymbula | A1 o2 o1 |
| . costaea | B8 11 o6 | Cryptaustenia | B3 12 o3 | . cyclodoma | B3 13 o3 | Cymbulia | B1 o8 o3 |
| Costalynia | A2 o4 o3 | . cryptaxis Jef. | B1 o3 o1 | Cyclodontina | B3 o8 o2 | . cymbuliopsis | B1 o8 o3 |
| Costatella | B2 o3 o1 | . cryptaxis Lowe | B3 14 o5 | Cyclohelix | A2 o1 o1 | Cymia | A3 o1 o1 |
| Costellaria | A3 o3 o2 | Cryptazeca | B3 o7 o1 | Cyclolimnaea | B2 o2 o4 | . cymostyla | A1 o4 o1 |
| Costigo | B3 o3 o1 | Cryptelasmus | B3 o7 o2 | Cyclomorpha | A2 o4 o6 | . cymotropis | B3 14 o2 |
| Costigulella | B3 o8 o1 | . cryptella | B3 11 o3 | Cyclonassa | A3 o2 o4 | Cynisca | A1 o3 o4 |
| Costoanachis | A3 o2 o1 | . cryptibycus | B3 12 o4 | Cyclope | A3 o2 o4 | . cynodonta | A3 o3 o3 |
| Costolimnaea | B2 o2 o4 | Cryptobia | A2 o5 o4 | Cyclophoridae | A2 o1 o1 | Cyphoma | A2 11 o2 |
| Cotonopsis | A3 o2 o1 | Cryptobranchia | A1 o2 o3 | Cyclophorinae | A2 o1 o1 | Cyphonochellus | A3 o1 o1 |
| Costorbis | B2 o3 o3 | Cryptocella | A2 11 o4 | . cyclophoropsis | A2 o1 o1 | Cypraea | A2 11 o1 |
| Cottonia | A3 o3 o5 | Cryptocharopa | B3 1o o1 | Cyclophorus | A2 o1 o1 | Cypraecassis | A2 14 o1 |

Cypraella A2 11 o2
Cypraeolina A3 o3 o7
Cypraeovula A2 11 o2
. cypria B3 1o o3
. cypriarius A2 11 o1
Cyrnotheba B3 14 o5
Cyrtotoma A2 o1 o1
Cyrtulus A3 o2 o5
Cysticopsis B3 14 o1
Cysticus A3 o3 o7
Cystopelta B3 12 o1
Cythara A3 o4 o4
Cytharomorula A3 o1 o1
Cytharopsis A3 o4 o4
Cythnia A2 o7 o3
Cytora A2 o1 o1

. dacrystoma A2 o1 o1
Dactylidella A3 o3 o1
Dactylidia A3 o3 o1
Dactylochlamys A2 o1 o2
. dactylopus B8 o6 1o
. dactylus Klein A3 o3 o1
. dactylus Schum. B1 o1 o1
. dadone B8 1o o4
. daedalocheila B3 13 o3
Daedalochila B3 13 o3
Dalainoria A2 o4 o1
Dalingia B3 12 o2
Dallum A2 14 o1
. dallia A1 o5 o1
Dallspira A3 o4 o1
Dalmatica B3 o6 o2
Damayantia B3 12 o4
Damoniella B3 o3 o1
Danilia A1 o3 o1
Daphnellopsis A3 o4 o4
. dardania Hutton A2 o4 o3
. dardanula A2 o4 o3
Darioconus A3 o4 o2
Daronia A1 o3 o7
. dasystherion A2 o1 o1
Dauciconus A3 o4 o2
Daudebardia B3 11 o2
Daudebardiella A2 o2 o1
Dautzenbergiella B3 o6 o2
Decipifus A3 o2 o1
Decollidrillia A3 o4 o1
Decorifer B1 o3 o1
Decorihastula A3 o4 o3
Decussiscala A2 o6 o1
. defrancia Mil. A3 o4 o4
. dekhania B3 12 o4
Delavaya A2 o4 o1
. delevieleusia B3 11 o3
Delima B3 o6 o2
. delomphalus B3 1o o1
. deloplecta B3 o3 o3
Delos B3 o8 o4
Delphinatia B3 14 o5
. dephinoidea A1 o3 o7
. delphinula A1 o3 o3
. delphinulopsis A1 o3 o3
. demoulia A3 o2 o4
. delpmphalus B3 1o o1
Dendrocochlis B3 14 o2
Dendroconus A3 o4 o2
Dendrodoris B8 o5 o2
Dendrolamellaria A3 12 o4
Dendrolimax B3 12 o5
Dendronotus B8 o6 o6
Dendrotrochus B3 12 o1
Dentarene A1 o3 o4
Dentaxis B3 o9 o1
. dentellaria B3 14 o2
Denticularia B3 o6 o2
Denticuloglabella A3 o3 o7
Dentiginella A3 o3 o7
Dentimargo A3 o3 o7
. dentiora A2 11 o3
Dentiscala A2 o6 o1
. dentistomus B3 o3 o6
Dentistyla A1 o3 o1
Dentocenebra A3 o1 o1
Depressiscala A2 o6 o1
Derjuginella B1 o6 o1
Dermatobranchus B8 o7 o1
. dermatoceras A2 o1 o1
Dermomurex A3 o1 o1
. deroceras B3 1o o3
Deserticola B3 14 o5
Desmocaulis B4 o2 o1
Desmopterus B1 o8 o4
Desmoulea A3 o2 o4
. desmoulinsia A3 o2 o4
. despoena A1 o4 o6
Detracia B2 o4 o1
Deviginella A3 o3 o7
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to be continued

# A New Experience

By NEIL M. HEPLER *

While on Sanibel Island during the Shell Fair, Laura and I got in some beachcombing after a storm. Laura came across a single valve of Mercenaria mercenaria L., in which an octopus had attached some 60 to 90 eggs. I was elated, as this was the first time I had actually seen these taken. We placed them in a container of sea water and proceeded to look for more. It wasn't long before we had found 6 or 8 of this shell loaded with eggs. All the time we hoped to come across an octopus to add to the collection.

My wish was granted in short order, for there in the debris, squirming about, was a beautiful specimen of an octopus. I placed her with the eggs and she immediately took her cue - changing color, darting back and forth with great speed, but since she had a very small audience she soon retreated and tried to hide behind the shells. Elated with my find we gave up shelling for the time and headed back to our cottage and placed the octopus in a large glass jar containing sea water and one of the valves with eggs. With this new change she went into another of her acts - again retreating, in the end, behind the shells. I placed screening tightly over the jar so she could not escape.

The specimen was identified as Octopus joubini Robson, 1929. Its body measures 2 inches across and the tentacles are 4½ inches from tip to base.

Next morning, on checking and changing the water, I noted that the octopus had eaten all the eggs. This seemed off to me as I have read that the female's devotion to her eggs in such that her health often suffers and, quite frequently, when her maternal duties are finished, she dies. Could these have been another female's eggs? This species of octopus lays fewer eggs and usually in single layers, while other species lay great numbers of eggs in clusters.

The eggs, when first found, were like grains of rice, white and opalescent and about 3/8 inch in length. They were individually attached to the shell by a fine stem. The next day, when we arrived home, the octopus had died. I placed her in formalin and placed the remaining eggs in tap water, with the thought to later detach them and preserve them. Four days passed and the eggs were larger, swollen and translucent. Upon closer examination I noticed that a number of the eggs contained a minute octopus, still attached to the yolk. I could make out eyes, tentacles and body of the perfectly-formed young. There was no life evident so these were placed in formalin where the eggs soon wrinkled and turned cloudy. Others which were placed in formalin became very clear and translucent helping to show the young specimens. Excluding the yolk, these young measured 3mm.

*Deerfield Beach, Florida

If only I had been aware of the following by Gilbert L. Voss, "The eggs need to be placed in an aquarium directly under the water jet so that they are thoroughly agitated and oxygenated, they will hatch out rather easily and nearly every egg will live". On the other hand, if I had all of those 600 eggs hatch out things might have been a bit cramped in our mobile home - imagine feeding 600 baby octopus!

Oh yes, I did continue shelling and, among other shells, found another real "find". A beautiful specimen of Oliva sayana citrina Johnson, 1911, 30mm, small, but yellow and beautiful.

# Alligator Alley

By CORINNE E. EDWARDS

Maybe you have heard and read of the road running across the Everglades from Fort Lauderdale to Naples and of the digging and blasting as the narrow alley is being built out into the bird and alligator country and through an Indian reservation - with the Tamiami Trail just a few miles further south. Maybe you wished you could get past the barriers and go a-fossiling out there. Well, we tried!

Louise Futch of Miami did some reconnaissance and got permission to get by the armed guard (to keep out alligator poachers and others) at the Route 27, Andytown entrance. We (in three fully loaded cars) stopped at the first few miles of spoil rising up beside the paved road (the shoulders were already green with grass or covered with rich-looking muck soil). We slowed down and looked at many more yellow calcited heaps of broken rock. We drove on and on for over ten miles and all the shells we collected were Pomacea paludosa Say -- a big round brown shining freshwater snail shell found at the canal edge on the bank.

These may be called "Apple Snails", but the word for apple is pomum. Pomacea means cover, cap or pot lid and that is as good a name for the tightly-fitting and nicely-shaped operculum which lies neatly beside or still in the aperture of these empty, but freshly-dead shells. These are egg-laying freshwater snails and they grow fat at night feeding on the water plants in the canals. "They" say these snails are the major food item of our rare and beautiful birds, the Everglades Kite and the Limpkin, so we never take or need to take, live ones.

When the black-top ran out we drove on for five miles until we were faced with a sea of mud, and the heavy equipment was at work just a short ways beyond -- so we turned back! John, Ellen and I spread the word about the Apple Snail and the others gathered a few to add to their shell collections. No fossil shells, gleaming white and 16 miles back to Route 27,

Continued on page 216, column one

# Puzzler

Contributed by R. TUCKER ABBOTT

1. There are five conchologists, each of different nationality, each collecting in a different habitat, using different equipment, and consulting different shell books. They all collected a different shell.
2. The American collects on a rock jetty.
3. The Australian uses a sieve.
4. The Textile Cone was found on the coral reef.
5. The Japanese collected the Slit Shell.
6. The Coral Reef is just north of the mangroves.
7. The subscriber to Indo-Pacific Mollusca uses a dredge.
8. Seashells of the World is consulted by the eelgrass investigator.
9. The Zebra Nerite was found in the habitat in the middle of the five collecting areas.
10. The Italian collects in the most southerly collecting area.
11. The collector who uses Caribbean Seashells collects in the area next to the person who uses traps.
12. Seashells of the World is used in the collecting area next to the area where the sieve is used.
13. The American Seashells user collected the Spotted Auger.
14. Only the Indonesian reads the Kingdom of the Seashell.
15. The Italian collects in a habitat next to the eelgrass beds.

Now, who collected the Golden Cowrie? And who collected with a net?

(Answers in our next issue.)

# DWARF MELONGENA

By BEATRICE E. WINNER

(Juno, Florida)

In November of 1974, I went ot Marco Island with the Palm Beach County Shell Club. I picked up nine dwarf Melongena corona (Gmelin, 1791), all alive. I put them in a tank with some other gastropods, but three died, one by crawling out of the tank. I then cleared the tank and left the six remaining by themselves. They were fed shrimp and, occasionally, clams.

Sometime in July of 1975, I went to clean my tank of algae and noticed that there were egg capsules on the side of the tank. I took the tank out of the garage and put it on my kitchen table where it could be observed frequently. I was rewarded, for in the beginning of August, I noticed more egg capsules.

On August 6th, and on several other days In August, I was fortunate to observe the female laying egg capsules. Each capsule was cemented separately to the side of the tank and not in strands like some species. The female is smaller than the male. When the female laid the capsules the male most always climbed upon her. I observed that he extended his radula all the way around each side of her, then over each egg capsule, starting with the one farthest from him. When he reached the one that she was in the process of expelling, he pushed his radula behind the capsule which was partially extended and pushed it outward so that he helped her in releasing it. They then both fell to the bottom of the tank. This happened almost every time the last capsule in the group was being released.

It proved to me that the male takes a part in assisting the female in laying the capsules. His twisting and pressing movements on the female aided her in releasing the capsules.

The capsules were generally laid in groups of from four to seven. It took an average of one hour to expell each capsule. They are almost round, whitish, smooth, transparent and somewhat flat. The average measurement was 8mm. Movement was noted in the capsules. There generally were 18 to 30 Melongena in each capsule. On taking several apart, there was a thick gelatinous fluid within, so that the eggs floated. There is an escape hatch.

The eggs have not survived.

Conclusions:

1. In this species the female is smaller than the male.

2. Egg capsules are separately cemented to an object and not laid in strings.

3. Female is aided in laying capsules by the male in two ways.
   (a) The male using his radula to help expell the capsules.
   (b) By his twisting and pressing motion on the female while she is in the process of laying the egg capsules.



SOUNDING OFF, Continued from page 222

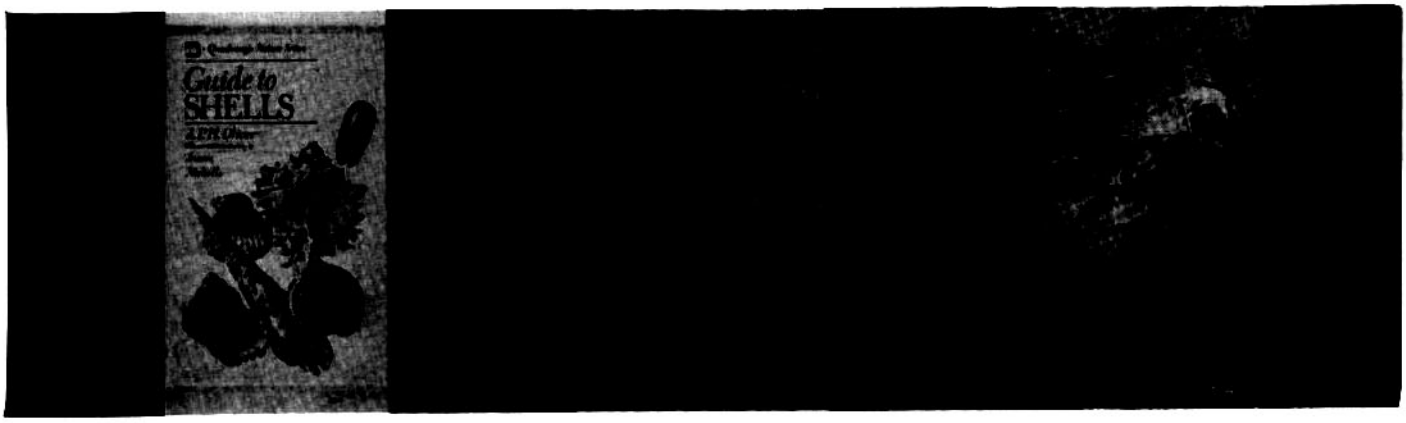
that I simply HAD to have Conus abbas Hwass. A "reputable" dealer in the Philippines was offering it. When the specimen arrived, I examined it, and immediately doubted the identity. But, after all, I had paid an "abbas" price, and the dealer well-known, so I decided to call it abbas. What do I know, anyhow. I'm no expert. Since then, I have learned that C. abbas does not occur in the Philippines, and my specimen is merely a color form of Conus textile Linne.

Many shell dealers ask for payment before shipping shells. I believe the consumer has the absolute right to inspect a commodity as variable in quality as shells before putting out his dollars. These same dealers ask you to include a sum for postage, such as $1.00 for a small parcel, $2.00 for a medium-sized parcel, and $2.50 for a larger parcel. That is an absolute racket. When I've sent $2.00 for postage, the parcel has arrived, and on checking, I've found the postage was 95¢. The $1.05 excess is then pocketed by the dealer. I could buy my long-wanted specimen of Voluta bednalli Brazier, with the money I have lost on postage.

Some shell dealers make it a practice of being "out-of-stock" on at least one species ordered. Rather than refunding the excess money their either "credit your account" for x dollars, or they send script which is applicable to your next order. This practice forces the collector to either order again from that dealer or to lose his money. I have a credit with dealers who are now out of business.

Then there's the matter of the dealer's "want list" files. If they happen to be out of the spe-

Continued on page 256, column 3




# In Review

GUIDE TO SHELLS
A. P. H. Oliver 1975
New York Times Book Co., N.Y. $9.95

4½ x 7½", 320pp. 153 pages of color illustrations, showing more than 1,000 species. An easy to use introductory guide to shells and shell collecting. The color drawings illustrating this compact volume are very good and the text provides something other similar volumes do not - the dates of description following the name of the originator of each species. The shore, concise descriptions are to=the-point and should enable the user to quickly identify the more common mollusks. Only six of the plates deal with bivalves, the four smaller Classes get a single plate and the Gastropoda cover the remaining, probably an accurate estimation of the interest in the various groups by the average collector. Only marine species are covered. A good beginner's identification guide.

COWRIES
John Taylor & Jerry G. Walls 1975
T.F.H. Publications, N.J. $14.95

288 pages, 5½ x 8½", more than 400 color illustrations. An interesting addition to this new volume is the inclusion of an "Identichart" with a repeat of the color illustrations in the book (albeit reduced and only the dorsal views included) to hang on the wall and use for quick i.d. work. The color photographs are fairly good and each of the 187 species considered valid by the authors are shown in both ventral and dorsal views, with text and illustration occurring on the same page. Twenty four plates are living cowries, four uses for the shells, ten illustrate allied cowries, not covered in the text. I have heard a number of criticisms of the book, such as a few species which should have been included and criticism of the color photographs - but I have the feeling this is a volume that will prove very useful to a great many collectors.

Above reviews by TOM RICE

# New on the shelf ...

THE HANDBOOK FOR BEACH STROLLERS FROM MAINE TO CAPE HATTERAS
Donald J. Zinn 1975
The Pequot Press, Chester, CT. $3.50

5½ x 9", 128 pages, illustrated with line drawings. This small volume will provide some fascinating information to you, even if you never venture out onto the beach in the area the title mentions. Not only does Dr. Zinn cover the biological facts concerning the species discussed, but he gives ideas on how to prepare the "critters" for the table. Covering such diverse animals as sponges, worms, clams, crabs and snails, this book should be in your library and/or your kitchen. TOM RICE

FULL FATHOM FIVE - WRECKS OF THE SPANISH ARMADA
Colin Martin 1975
Viking Press, N.Y. $12.50

Another diving book? Or one on the Spanish Armada? Full Fathom Five isn't just another diving book on some ships -- author Colin Martin has approached marine archaeology from a scientific and practical angle, blending superb historical data with a factual account of some darn hard days of fighting the real world of currents, extremely cold water, surface winds, poor underwater visibility and fatigue. This book tells it like it is -- marine archaeology is rewarding, but not always in gold.

The knowledge gained by these historical sleuths in marine architecture and armament of the Armada is fascinating - answering the age-old question as to why the Spanish Armada, for all appearances of strength, failed? The appendix has a complete list of Armada ships, their sizes, armament, crew size and their date.

This book is strongly recommended for the serious maritime history buff as well as the general reader.

JERRY WARD

Authors: if you wish your books reviewed here please send a review copy to OS&S.

THE CORAL REEF
Jerry and Idaz Greenberg 1976
Seahawk Press, Miami, Florida $3.95

This condensed version of the Greenberg's "The Living Reef" is 66 pages, 6 by 9 inches, has more than 65 color illustrations. The beautiful color illustrations can bring back memories of your last dive in the underwater world of the warm tropics. Covers the most common fish and corals of Florida, Bermuda, the Bahamas and the Caribbean. TOM RICE

IN SEARCH OF LAKE MONSTERS
Peter Costello 1975
Berkley Publishing Corp., N.Y. $1.75

vi + 308pp., 29 photos, 40 illus. To those who are interested in the possibility of undiscovered animals, this book is a compilation of the many reported sightings of "lake monsters" of the various lakes of the world. Indications are that these animals may not be so uncommon as believed.

Starting with the now-famous Loc Ness of Scotland, the author goes into the history of the Loc, of the sightings reported, and the photographs taken of the creature and examined, and of the research which was done and is being done to find and identify this famous unknown animal.

Mr. Costello relates other reports of lake monsters in the locs of Scotland; of the Piast in the lakes of Ireland; of the Soe - Orm of the Scandinavian lakes; and other rumors of them in South Africa, western Asia and Australia.

Of special interest to those in North America are the many lakes of Idaho, Wisconsin, Nebraska, Indiana, Minnesota and Vermont, where sightings of these animals goes back more than two centuries. Also mentioned are the Ogopogos of Canada.
As to the identity of these animals, the author proposes that they may be a species of long neck seals. The author ends with a brief summary of sightings of sea serpents.

GARY S. MANGIACOPRA

## NEW ON THE SHELF

Continued from page 253

OUR MAGNIFICENT WILDERNESS
Readers' Digest Books 1975
W.W. Norton & Co., Inc. N.Y. $15.95

8½ x 11 inches, 352 pages. The sumptuously illustrated first 288 pages of this beautiful volume chronicals the natural history of many of the endangered species of animals. Included are charts showing declining populations; the amount of food needed by carnivorous species. Efforts to save each of the species are also discussed. The beautiful color illustrations compliment the informative text. A fifty-six page section of the book entitled "A Guide to Enjoying and Preserving Our Wildlife Heritage" gives the reader ideas on how to better observe and enjoy wildlife in your own area and also lists worldwide wildlife parks and refuges where the traveler can view exotic species in their native habitat - the listing also includes a list of the animals you can expect to see in each of the parks. A beautiful book that will give you a sense of awe and maybe even some sense of hope for these wild animals. TOM RICE

## Exchanges Wanted

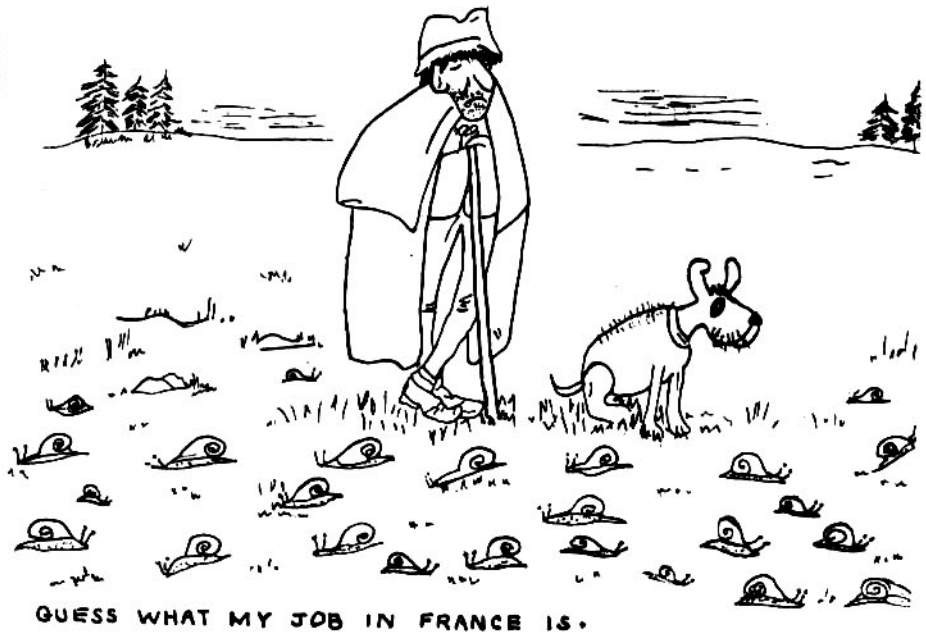
I am interested in all worldwide marine shells I accept only mature specimens. Common or otherwise, I have in exchange Florida marine shells all of specimen quality along with accurate data, all of my shells are self collected. Please write to MRS. VITO BOVE; 4731 N.E. 22nd Ave.; Lighthouse Point, Florida 33064. Would like specimens of world wide Melongena.

Would like to exchange worldwide for marine gastropods and bivalves from the Atlantic coast for similar specimens from your area. Would like especially species from Indian Ocean, Arabian Sea and Africa. MRS. RUTH ROSSER-BING; P.O. Box 2612; Plainfield New Jersey, 07060 USA.

I have a very large number of land, marine & freshwater shells from the British Isles, both Recent and fossil, which I would like to exchange with other collectors for marine shells from their part of the world. Please write, giving preferences and exchange list, to MICHAEL BRISCO; 3 Dunboyne Park, Larne, Co. Anbrim BT40 1PT, Northern Ireland. All letters answered.

Would like to exchange six different Florida bivalves for six different worldwide species that are colorful or attractively patterned. Will send data and all shells are live collected including pectens, Barnea costata, Macrocallistoma, and others. Either send now or write. JACQUELINE TONTRUP; 2330 Edward Road; Lake Park, Florida 33410.

Interested in exchanging, send your wants to OS&S and we'll run your announcement in our next issue - there is no charge (no dealers).



GUESS WHAT MY JOB IN FRANCE IS.

Dear Editor:

We have a friend who recently went to France to stimulate interest in a certain line of manufacturing. He found business somewhat slow, and being interested in mollusks, both conchologically and gastronomically, he sent us this original cartoon which we wish to share with your readers

R. TUCKER ABBOTT

## Conchologists of America

The Conchologists of America will hold their annual convention in Portland, Oregon in 1976. June 16 through 20th will see collectors gathered from around the United States at the Thunderbird Motor Inn, Jantzen Beach, on the bank of the mighty Columbia River.

Unlike some conventions the C.O.A. affairs are lively and certain to add to your knowledge as well as be fun. Convention Chairman R. Wayne Stevens and the hosting Oregon Society of Conchologists have outlined a really great convention. In addition to the lectures on shells, shelling trips, etc. we'll have a boat trip up river and a beach party out on the magnificent Oregon Coast. The C.O.A. was formed out of the need for a national organization oriented to the amateur shell collector who, although interested in the scientific aspect of his hobby, was equally interested in shells for their beauty and esthetic appeal. C.O.A. membership includes scientists, advanced amateurs, beginning shell collectors, shell dealers and should include you! See you in the City of Roses on June 16th.

1976 President of C.O.A., Bill Bledsoe has urged all C.O.A. members to attend our 1976 Convention. For further information on the convention or on membership in C.O.A. write the Secretary/Treasurer Kathy Daniels; 121 Stephens Lane; Varona, PA. 15147. Your $3.00 membership will bring you the quarterly newsletter, membership card and more.

## NEW CLUBS

A new club has been formed in Japan. The Shikoku Conchological Club plans to have a bi-annual magazine in 1976, written in English. Membership is $5.00 US. Further information can be obtained by contacting the club secretary, c/o Coral Museum, Tatsukushi, Tosa-Shimizu City, Kochi Pref., Japan 787-04

The Minnesota Society of Conchologists meets the first Thursday evening each month. Dr. John Haas is President. For information phone the membership secretary: Mrs. Dorothy Pardun at 483-8996; or the Tidepool Gallery II, at 926-1351.

# FOUR WAYS OF COLLECTING

By NORMA CARLSON*

Perhaps you were fascinated by the shells you saw in a museum, or at a shell show, or those shown to you by a collector. Your questions began with, "where do you get them? What do you do with them? How much are they worth?" No one can answer these questions fully - only in a general sense. Shells that are self-collected are far more valuable to the collector than to anyone else. The value of a shell is not always in terms of money. A shell may be collected while at a special occasion with dear friends, where happiness and good company mean more than money can buy.

More and more people are joining the ranks of collectors - partly because of the general reaction of man to city life and the pressures of our industrial civilization. Collecting is also one of man's most primitive instincts, dating back to ancient times when the accumulation of objects necessary for survival was vital. Today we horde material goods, but still have a strong instinct to collect things of nature.

Shells can be acquired in four ways. The first, and probably most important, is to collect them yourself. A visit to a beach may be the beginning of a lifelong interest in this challenging hobby. A good place to start might also be in ones' own backyard, where, if you look carefully, you can find four or five species of land snails.

At the beach search the high tide lines and concentrate on living shells to be found near the low tide mark, or in rock pools, under the stones and amongst seaweeds. Don't forget to return the rocks to the positions in which you found them - for many living creatures live on and under them and they will die if left exposed. Do not take young, immature, damaged or deformed shells - left alone these can grow, breed and contribute to future generations.

Under and around the rocks you can find shells occupied by hermit crabs - not the true builder of the shell. These shells are "fair game" and often come from deeper waters not usually available to the seaside collector. If the shell is not broken, the crab may be removed and the shell added to the collection.

Another way of self-collecting shells is by skin or scuba diving. A boat is a must, also other special equipment. The rewards are greater, but the collecting is more difficult and more expensive. By being able to collect in this manner, more uncommon and rare species are found and most live collected shells are more desirable for showing and trading.

Trading with other collectors is the second way to obtain shells. If you are a member of a shell club, contacts can be made with other collectors. Collectors the world over are anxious to exchange with you for good specimens of your local shells. The secret of success is complete honesty. Always give correct locality information with each shell and always made sure that the shells you send in exchange are at least the equal in number and quality of those you receive. Most collectors want shells of scientific value and that requires exact information concerning the locality from which they came.

The third way to get shells is to buy them. There are many shell dealers throughout the world. Prices vary among dealers, and vary with rarity and popularity of the shell. While buying shells is a way of acquiring them from distant countries or areas you cannot collect locally, it is not as satisfying to some people as is the joy of self collecting on the beach or on coral reefs. A worthwhile source of shells is from fishing boats that dredge for shrimp or scallops, or from lobster fishermen, who, for the most part, pick up shells incidentally. This is often a source for deep water species.

Derdging, or trawling, is a fourth source of shells. There are commercial dredgers who operate with expensive boats and equipment in deep water where often the rarest of species are found. The dredge material can be brought in varying amounts from cupsfull to bushels at varying prices. It is also quite easy to make your own dredge; or you can purchase a ready made model - a small one that tows behind your boat at a very slow speed. Working your own dredge has great rewards and compensates for the messy task of sorting the sea bottom material. Many loads hauled aboard will not contain anything desirable and all must be returned to the sea where the animals contained can continue to live. When a rare specimen shell is found in the dredge material you'll forget the hard work and search enthusiastically through the next load.

Having acquired some live shells it is necessary to clean them, and should be done soon after collecting. The animals can be removed from the shells by first placing them in cold water which should be brought slowly to a boil. Simmer gently and allow to cool slowly. Then remove the animal with a piece of wire or a bent pin - catching it under the operculum where the muscle is quite tough. A backwards, spiralling, gentle twist is used. Bivalves may be heated in water and the animal removed with a thin knife blade when the shell valves gape. Careful removal of the animal will keep the hinge together in most bivalves. Crabs in shells can be removed by boiling the shells and a hard shaking or rinsing under a stream of water will dislodge the crab. Always keep the operculum of a shell and keep it with that particular shell. Gastropods that have operculums (some don't) are better shown complete with its "perc".

Shells may also be left in water until the animal rots, provided that the water is changed regularly, once or twice a day. However, decomposing tissue may damage the shell, also the operculum may be accidentally thrown away when changing the water. The animals of land snails will die and shake out easily if shells are left in 50% alcohol for four or five days.

Shells buried in clean dry sand, aperture down, will decompose in a couple of weeks and the liquified matter will run out of the aperture. Color and polish will not be affected if not exposed to water and light. Loose growths can be removed from the outside of the shell with a stiff brush or knife. Some scraping or picking with a pointed object may be necessary. The periostracum may or may not be removed as the collector wishes. Household bleach, one part to ten parts of water, may be used to soften and loosen coral and other marine growths. The shells may stay in the solution several days without damage. Never use full strength bleach. For scientific purposes shells should be left in their natural state, never polished, never treated with acids or lacquered.

When shells are collected and cannot be cleaned the same day, they may be placed in vials or bottles of Isopropyl alcohol (70%) and kept there indefinitely. Of course it would be impossible to do this with very large shells such as Strombus gigas or Pleuroploca gigantea. Another way to keep uncleaned shells, especially while on a collecting trip by boat, and miles from home, is to wrap them in a fair amount of newspaper and store them in a tightly covered container such as a thirty gallon plastic garbage can. Within a week, the generated heat within the can will decompose the animal and it will pour out of the shells when umwrapped. Do this outdoors in the yard with a garden hose handy, and don't expect a pleasant odor! But the shells do clean easily and large buckets and tubs for boiling the big specimens are unnecessary.

Some shells with tightly coiled apical whorls hold their animal parts. To avoid unpleasant smells, place the shell upside-down and pour in a fluid of shellac or liquid quick-drying glue. This penetrates the animal remains and seals them in, preventing further decomposition. Fill up the remainder of the aperture with tissue paper or cotton and glue on the operculum in its proper position.

Shell collecting now moves from a healthy outdoor activity to a satisfying hobby of stimulating mental exercise. Naming your shells is necessary. Study carefully to sort out the different kinds and then delve into the literature to correctly identify them.

*Leisure City, Florida

# 1976 *of Sea and Shore* TOURS

Our 1976 Australia tour is already one-third booked - so if you're planning to come along get your $100 per seat deposit to us as soon as possible! The tour starts in Honolulu and will allow you to spend a couple days in that island paradise before departing "down under".

In Australia you'll have a number of options offerred: camping on an island of the Great Barrier Reef; trawling, diving and dredging for shells with one of Australia's most famous collectors; or staying at a luxurious resort and journey out each day to a different reef. Taking advantage of the year's lowest tides.

Our 1976 tour reverses the order of areas we visited in 1975. We start out in Yeppoon, then to Mackay and ending up in the Cairns area. You can choose a three or four week tour.

Mainland shore collecting, trips to the Great Barrier Reef, dredging and meeting with local shellers will occupy the greater portion of our time. Dunk Island will be visited at the end of the tour for relaxing, cleaning up your "catch" and getting ready for the long trip back home. A final stop in Brisbane to visit Lone Pine Sanctuary and you're headed home.

A tour to remember - why not join us this year? Box 33; Port Gamble, WA. 98364.

July Australia

**$ 2500** 4 WEEKS, INCLUS. PER PERSON, double occupancy

$2250 21 days

# 1976 FLORIDA SHOWS

January through March is shell show time in Florida and this year brings a bumper crop of shows to attend. The following list gives dates, places and addresses for you to write should you be interested in entering or attending and want more information.

January 15th through 18th
Southwest Florida Conchologist Society, Inc.
Exhibition Hall, Edwards Drive; Fort Myers.
Chairman: Charles F. Conniff; P.O. Box 896; Ft. Myers, FL. 33902; Phone (813) 936-7793.

January 30th through February 1st
South Florida Shell Club, Inc.
Museum of Science; 3280 S. Miami Avenue; Miami, Florida
Chairman: Gerrit de Graaff; 10915 SW 55th St.; Miami, FL. 33165; (305) 271-1383

February 6th through 8th
Broward Shell Club
International Swimming Hall of Fame Auditorium
Fort Lauderdale, Florida; 501 Seabreeze Ave.
Chairperson: Mrs. Georgia Lustig; 1551 NW 62nd Terr.; Sunrise, FL. 33313. (305) 735-5865.

February 9th through 14th
The Fort Myers Shell Club
Contact chairperson for exact locality.
Chairperson: Mrs. Etta Greene; 6203 St. Andrews Circle; Ft. Myers, FL. 33901.
Phone (813) 936-0741.

February 13th through 15th
Palm Beach County Shell Club
YWCA, 901 S. Olive Avenue; West Palm Beach, Florida.
Chairman: Dr. Marvin R. Glickstein; 504 Greenway Dr.; N. Palm Beach, FL. 33408.
Phone (305) 626-5987.

February 13th through 15th
The Sarasota Shell Club
Exhibition Hall; 801 N. Tamiami Trail
Chairperson: Mrs. Violet Hertweck; 637 Sheridan Dr.; Venice, FL. 33595; (813) 485-7426

February 20th through 22nd
Naples Shell Club
Central Mall, Goodletter Rd., Naples, Florida
Chairman: Sherman L. Clark; Rt. 10, 10 Palm Dr.; Ft. Myers, FL. 33901. (813) 481-2192

February 26th through 29th
St. Petersburg Shell Club
Treasure Island Auditorium; 120 108th Ave.
St. Petersburg, Florida.
Chairperson: Mrs. Selma R. Lawson; P.O. Box 46722; Pass-A-Grille Beach, FL. 33741.
Phone (813) 360-5453.

March 4th through 6th
The Sanibel Shell Fair
Sanibel Community Center; Periwinkle Way, Sanibel Island, Florida.
Chairperson: Mrs. Robert Dugger; 2902 Gulf Dr.; Sanibel Id., FL. 33957; (813) 472-1181

March 26th through 28th
The Central Florida Shell Club
John Young Museum & Planetarium; 810 East Rollins; Orlando, Florida.
Chairperson: Mrs. Ione Reed; 2915 Nela Ave.; Orlando, FL. 32809; (305) 855-2684.

And then a summer show:

July 31st through August 1st
The Jacksonville Shell Club
Jacksonville Beach Municipal Auditorium (Bi-Centennial Flag Pavilion); Jacksonville Beach
Chairman: Donald C. Campbell; 3895 DuPont Circle; Jacksonville, FL. 32205. Phone: (904) 388-8340.

# Seattle Show

The PACIFIC NORTHWEST SHELL CLUB will hold its 1976 shell show, April 10th and 11th at the Eames Theater of the Pacific Science Center, Seattle, Washington. These of the show is the U.S. Bicentennial. More info and entry information can be obtained from the Corresponding Secretary: Wilma Young; P.O. Box 1931; Seattle, Washington 98111.

## SOUNDING OFF

Continued from page 252

cies I've ordered, they place my name on the "want-list" for the species. I am on "wanted lists" throughout the USA. I have nightmares about that. I dream that all the dealers who have my name on the waiting lists will discover it at the same moment, and send the shells by C.O.D. I'll owe a thousand dollars. Never mind that I got the species long ago from some competitor.

There is another problem with the dealers. I recently received a price list from a dealer who stated in the introductory remarks that he deals only in rare shells, because you can get the common ones anywhere. I ask you where? Look at the ads in Of Sea and Shore. Everybody's selling rarities. Conus barthlemeyi Bernardi is seen far more frequently on lists than Melongena corona Gmelin. Now I admit there are exceptions. One dealer actually sells common Panamic species. Admittedly, the prices are high, but you can actually buy species of Nerita, Thais, and Littorina.

I'm not only hooked, but I specialize in chitons. What could be more dumb? I've tried getting chitons from dealers. With one notable exception, my experience has been a total disaster. Do you know what you get when you order a chiton from a dealer? You get a disarticulated, and eroded lump, which, if you're lucky will be correctly identified.

Almost every shell dealer in the USA, and I've tried them all, has made a fool of me by one or more of these methods. I just keep going back for more. Let's face it. I'm hooked.

Inlanders should never become shell collectors. It's a no-no.

# INDEX TO VOLUME SIX

## ARTICLES

## AUTHORS



## ILLUSTRATIONS, Arranged by species



Continued bottom next page

# CLASSIFIED

(RATES: 25¢ per word one insert, 20¢ per word two or more inserts same ad, minimum 10 words)

## SHELLS FOR SALE

Dealer in Japanese specimen shells. Lists. SAICHIRO AKITA; 375 Sakae-cho, Kawara-machi-Dori, Imadegawa-Sagaru, Kami-Kyoku, Kyoto, Japan.

World wide sea shells for collectors. Free price list. SEA GEMS; 2002 Margaret Dr.; Wichita Falls, Texas 76306.

2.10" diam. and 2.4" diam. Xancus pyrum (full-sized) fished in Palk Bay and Gulf of Mannar, off Madras Coast, available in 1000's Contact: JAMALIAH CHANK INDUSTRIES; 154 East St.; Kilakarai, Ramanathapuram, South India.

Common West Pacific specimen seashells, good data. No wholesale, no overseas. Our business suspended until further notice. Watch for new address. W. M. AMES.

Gorgeous Everglades tree snails; live too! List: send stamp. Many specials! MARKER'S 25 Amaryllis; Key West, Florida 33040.

Free worldwide catalog featuring popular, top quality shells for non-scientific collectors in North America. (Established 1932). JAVO; Box 13288; Tampa, Florida 33611.

Shells, shells, shells! From Conus textile to C. gloriamaris, we are pleased to serve you. Choice worldwide specimens. Shells for the jeweler. Wholesale commercial shells and coral also. Free lists. JOEL GREENE, LTD.; P. O. Box 99331; San Francisco, CA. 94109

Tree snails of the world, bought and sold. Three beautiful Florida snails, $2.00. Free price list. RAY LYLES; 218 NE 1st Ave.; Miami, Florida 33132.

JAMALIAH CHANK INDUSTRIES; 154 East St.; Kilakarai (Ramanathapuram Dist.) South India. Dealers in sea shells, shellcrafts, marine products. Ask for free list of commercial shells and specimen grade shells.

SEAWORLD INTERNATIONAL LTD.; 299 Ellis St.; San Francisco, CA. 94102. USA. Direct supplier fine Philippine sea shells, exotic corals and various marine products. Import - Export. Wholesale - Retail.

HAWAIIAN DIVERS, SLIGHTLY LIMITED. Hawaiian specialists in Cypraea, Conus, Mitra, Murex and Terebra. We currently have a large supply of C. tesselata, C. gaskoini, C. sulci-dentata and Murex pele color variations. We can fill your order from stock or will get it for you. 2843 Westwood Dr. N.W.; Olympia, Washington 98502.

Finest large live-collected Conus bullatus, Conus floccatus, Cypraea mariae, for sale to private collectors. Below Australian prices. Write GEOFF DENNIS; Postal Agency; Santa Ana Island, Solomon Islands.

California, Hawaiian and Philippine shells. Write for price list. MIKE FREIN; P.O. Box 1538; Cambria, California 93428.

## SHELLS WANTED

Still buying any unusual Pecten, also needed, about 125 species of Conus, including: aureolus, comatosa, deburgiae, eldredi, elisae, flavescens, howelli, ichinoseana, profundorum, ustickel. AL ZENKER; 7829 73rd Place; Glendale, New York 11227.

Specimen and commercial shells wanted. Also fossils & minerals. Quote wholesale prices. BOARDWALK ROCK & SHELL SHOP; 1409 Boardwalk; Atlantic City, N.J. 08401. Free list. Established for 25 years.

Specimen and commercial shells wanted. Large quantities; submit wholesale prices. EXOTIC SHELLS, INC.; 94-070 Leokane Street; Waipahu, Hawaii 96797.

Commercial and specimen shells - Marine live wanted. Submit wholesale prices. DIANA PIERRE. Nieuwstraat, 29. Ostend, B-8400, Belgium.

## ACCOMODATIONS

Shelling and fishing from Marco Island. Reasonable rates and good accomodations. PINK HOUSE EFFICIENCY MOTEL; Goodland, Florida 33933 - Box 235 - Tel. 39-4-3498 Bob Bianchi, proprietor and guide.

Beautifully furnished, new, 1 Br. Apt. sleeps 4, A/C, on canal, easy access to Atlantic or Gulf. Excellent shelling area by walking or snorkeling. Shelling guide and trips to Looe Key. By week, month or season. TONI WOOD Rt. 1, Box 283; Big Pine Key, FL. 33043 Phone: (305) 872 - 2139.

## SHOPS

GUTIERREZ GIFT SHOP; 230 Escolta, Manila, Philippines. Top quality specimen shells, shell products, Philippine handicrafts, wood carvings, etc.

DRIFTWOOD SHOP; on Highway 101, 1 mile north of Hoodsport. Rt. 1 Box 34; Hoodsport, Washington 98548. World - wide specimen seashells, sealife museum & unique gifts. Open every day June to September and by appointment. Free price lists -- we specialize in Cypraea.

## BOOKS

Books located for you. Out-of-print, fiction, non-fiction, any title, subject or author. Free searching. No obligation to buy. Write today. BRAINARD BOOK COMPANY; Box 444 OSS; La Grange, Illinois 60525.

Natural History Books - Shells, birds, plants, mammals & insects. New, out-of-print & rare books. Free book search. We buy good used books. Catalogues issued. Write, TOLLIVER'S BOOKS; 1634-SS; Stearns Dr.; Los Angeles, California 90035, U.S.A.

## FOSSILS

Fossils. New illustrated catalog #21 featuri ng 10,000 items now ready: $3.00. Starter collection offer: 40 different, identified fossils plus catalog, $15.00 net. Excellent gift. Buying collections, top-grade materials. MALICK'S FOSSILS INC.; 5514 Plymouth Road; Baltimore, Maryland 21314.

Fossil list free. J. F. RAY'S FOSSILS; Box 1364; Ocala, Florida 32670. Mail orders only. Dealer inquiries invited. Also buy fossils.

## MISCELLANEOUS FOR SALE

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A-116 Seashell Collectors' Handbook & Identifer, S.B. Murray 240 pages, 300+ color illus. $6.95

A-117 Guide to Shells, A.P.H. Oliver (1975), 320pp. $9.95

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