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The TEXAS CONCHOLOGIST is the official publication of the Houston Conchology Society, Inc., and is published quarterly at Houston, Texas. It is distributed as part of the dues to all members.

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The TEXAS CONCHOLOGIST accepts contributions for publication from amateurs, students, and professionals, subject to approval by the Editor. Manuscripts should be typed, double spaced and should be in the hands of the Editor the first day of the month preceding publication dates. Photos accompanying such material are welcomed.

Texas Whopper

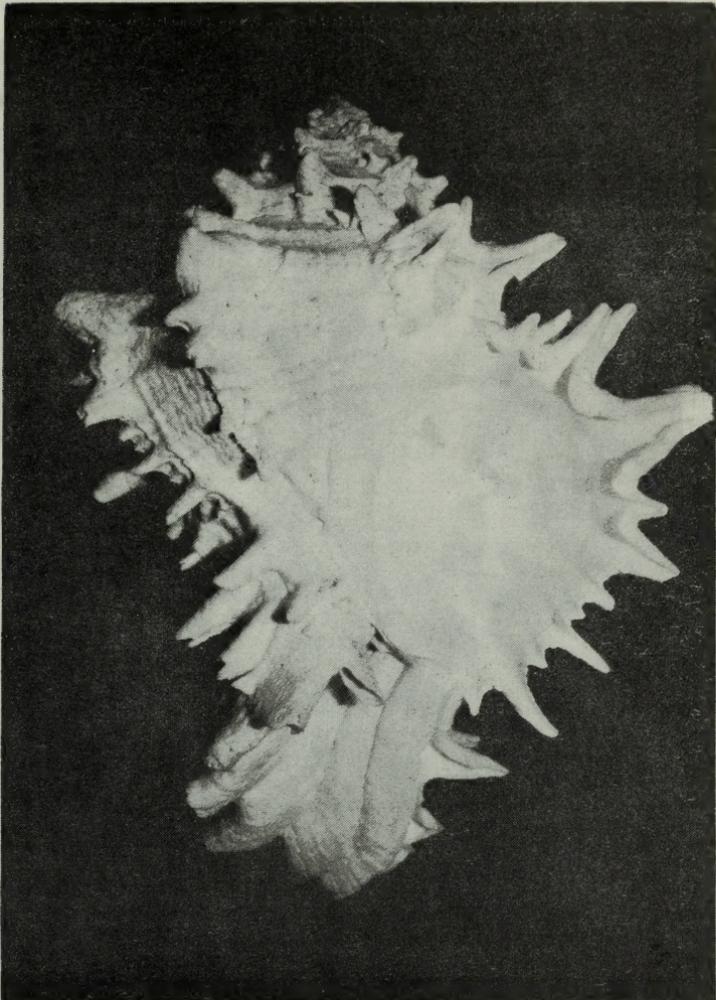


Fig. 1 - Murex fulvescens, 213.5 mm., record size.

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Stylus Whopper

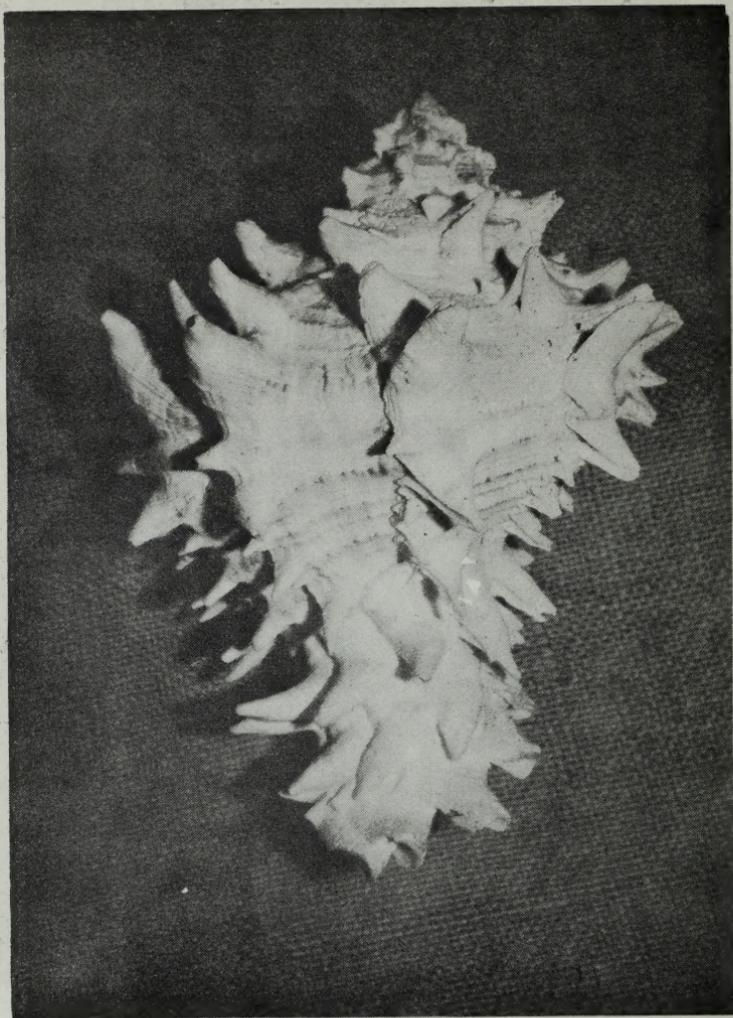


Fig. 2 - Murex fulvescens, another view of The Whopper.

TEXAS WHOPPER

This specimen of Murex fulvescens (Sowerby, 1834) has been officially measured for the record by Dr. T.E. Pulley, malacologist and director of the Houston Museum of Natural Science, for owners Larry and Betty Allen, our members from Port Isabel, Texas. Thus a new record for length of this species is now established. It measures 213.5 mm. or 21.35 cm.

The information has been sent to senior editor Robert J.L. Wagner of Wagner and Abbott's Standard Catalog of Shells who maintains a register of world record sizes of shelled mollusks. There are special requirements for verification of size and identification. These have been fulfilled for this specimen and species. The recorded record for this Murex in the Third Edition, 1977, of the Standard Catalog is 17.70 cm., owned by P. Rosin of the Florida Keys, with 1974 as the date.

It is very fitting that this new record belongs to Betty Allen. Some years ago she obtained a copy of Johnsonia (Vol. 1, 17, "The genus Murex in the western Atlantic" by W.J. Clench and Perez Farfante, 1945) and avidly read the material on Muricidae, a family she especially collects and studies. M. fulvescens, one of the largest in the world in the family Muricidae, was discussed as ranging west to Texas, and since the type had not been available to the authors and not located then, the type locality was restricted to off Charleston, N.C. Johnsonia stated "It apparently is quite rare and probably exists fairly well below low water line."

This statement rang quite wrong in Betty's mind. At that time she was very involved in shrimping in the Gulf and knew that shrimpers hated the very common Murex fulvescens that came up in their nets damaging them every trip in the Gulf. Fortunately, Betty says, she rewrote the letter she sent to Dr. Clench and toned down her comments in the final version informing him that she had many, many specimens from offshore Texas and that the species wasn't rare here. Eventually, she corresponded on this species and others she obtained from shrimp boats and provided Harvard's Museum of Comparative Zoology with valuable material. There was not much from Texas on deposit in those days, and Dr. Clench wrote a very kind letter explaining that there weren't enough professional workers in the field able to cover collection of mollusks thoroughly and that aid from collectors was invaluable. Dr. T.E. Pulley was a graduate student of Dr. Clench and was led to contact Betty Allen to seek help of specimens in his study of bivalves of the Gulf of Mexico.

Larry Allen has been involved in shrimping in the Gulf and recalls that Murex fulvescens was common at the 26 fathom curve off Port Isabel. He says that it was taken all the way up the coast, and it is commonly taken by shrimpers off Louisiana also.

The specimen here is an especially beautiful one, cleaned by Larry in a piece of machinery he is very proud of and affectionally calls "the Monster." Larry holds and turns each shell inside the machine where pellets or abrasive material (usually plastic beads) are bombarded at the shell. He claims that trial and error has perfected his ability to clean even delicate shells such as Spondylus.

This record Murex fulvescens was in a basket of shells purchased from a shrimper in the last year. Because so many of the shells are destined for the Allen's Shop of the Seven Seas and because Betty has many of this species already in her collection, there was no real attempt to keep the operculum, but Larry says

he thinks he still has it in the basket of shells. Betty never puts an operculum in a shell unless she is sure it really is the one that belongs to that particular specimen.

All of this has led to a review of published information on this species. We note that Johnsonia placed the Murex in the genus Muricanthus. This is used in Radwin and D'Attilio's Murex Shells of the World, 1976. Abbott's American Seashells, 1974, and Vokes in her Catalogue of the Genus Murex Linne, 1971, use Hexaplex.

Reports are that the species feeds on oysters. Collectors in Texas and Florida, at least, know that the species feeds also on other bivalves. Several HCS members have kept this Murex in aquariums for many months and fed it Mercenarias. It is known to feed heavily for several days and then retire under the sand. This writer has collected it in the grass beds in St. Andrew's Bay near Panama City, west coast of Florida, and found it eating Carditas, Chiones and Trachycardiums. At the recent AMU meeting at Corpus Christi, Texas, Theresa Stelzig collected a number of small, spiny specimens by scuba at the oil rigs on the field trip and said she planned to keep them in her aquarium for study.

Divers around Galveston collect basketfuls on offshore rocky areas and then take them around the jetties also. Beach collectors get them in the wintertime at very, very low tide at the jetties. Storms toss them up all along the coast. They are sometimes on sand bars in the surf zone, usually with smoothed varices worn from wave action.

This Great Eastern Murex is a sturdy individual that can be beautiful with un-worn spikes and spines. Dr. Emily Vokes in her discussion of Hexaplex and Murexiella in Tulane Studies in Geology, Vol. 6, Nos. 2 and 3, 1968, discussed the fossil history then known and said it appeared first in the upper Miocene Pinecrest Beds of southern Florida and is known also in Pleistocene beds in South Carolina and Florida. She added that the species was not rare, quoting many locations where it was abundant and stating that the majority of records of collection were from about 15 fathoms.

Photos and story by Constance E. Boone

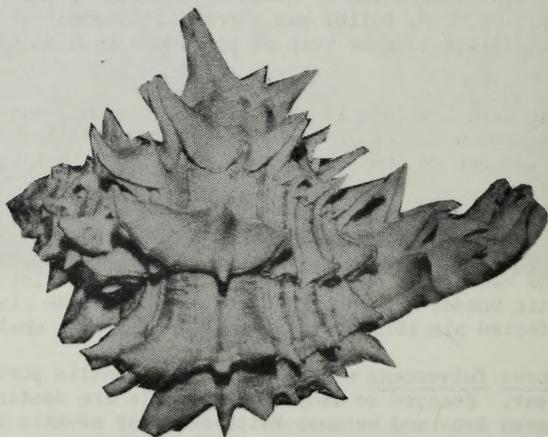


Fig. 3 - Murex fulvescens, another view showing spines and curved canal.

SEARCH AND SEIZURE

By Constance E. Boone

My summer collecting experiences were climaxed by participating in the field trip conducted by Dr. T.E. Pulley down Padre Island National Seashore to Mansfield Cut as part of the adventures offered on Field Trip Day of the American Malacological Union's annual meeting held at Corpus Christi, Texas, August 4-11, 1979.

On Friday morning at 6:30 a.m. some thirty early risers after the banquet met for juice, rolls and coffee in the coffee shop not yet open to the public and talked eagerly of the four-wheel drive trip scheduled that day.

Dr. John W. Tunnell Jr. of Corpus Christi State University (HSC speaker in September) had arranged for students and park rangers to drive four-wheel drive vehicles, and we knew that Dr. Pulley planned a cook-out at the beach. We had been told to expect to be gone all day.

We saw the dawn over the relatively calm Gulf as we sped down the beach. Our driver was a most knowledgeable young biologist, Jim Woods, who is receiving his master's in marine biology from Corpus Christi State University under Dr. Tunnell and who is now permanently employed with the Padre Island National Seashore as park biologist. He had been scheduled to present a paper on the mollusks of the shelf-edge submarine banks in the northwestern Gulf of Mexico, a total of 265 (29 alive) species of mollusks representing 88 families to be reported. This was cancelled due to the problems with the oil spill and it's arrival that week on the National Seashore area. We had been racing the clock that week over the dreaded anticipated arrival of oil on Corpus area beaches.

Jim was informative about the birds and the plants in the park. The driving that day was excellent, he said. We had very smooth going to Big Shell. There were some soft spots there, but he knew how to travel that area and we had no problems. One or two of the vehicles hit soft spots and had to churn out, but we didn't leave anyone.

Padre Island stretches 113 miles along the Texas Gulf coast from Corpus Christi on the north almost to Mexico on the south and ranges in width from a few hundred yards to about 3 miles. Quoting further from the national seashore literature, the island is separated from the mainland by Laguna Madre, a shallow body of water with a maximum width of 10 miles. At each end of the island there is development. The national seashore boundaries encompass the undeveloped central part of the island, 80.5 miles long. Mansfield Cut is an artificial cut separating the north and south parts. The national seashore extends from the north end to Mansfield. You cannot cross Mansfield by car.

Padre is classified as a textbook example of a barrier island, built by wave action and crowned by wind-formed dunes. Winds and strong tides continually change the appearance of the island.

You can drive a conventional car for 14 miles southward from the northern boundary of the national seashore, and you can drive one northward for about 5 miles from the southern end of the island at South Padre Island. Four wheel vehicles can be rented at both ends for visitors to see the areas to Mansfield. I had only gotten to Big Shell from the northern end, again because of hazardous driving conditions even for the four-wheel drive vehicle I was in.

Our guide explained the park's work in trying to protect the dunes from the public. The dunes are fragile barriers that may collapse if drivers edge too close to them and if eager tourists climb them to view the scenery. We saw the trails left by visitors to the top of dunes. Gentle reminders to hikers are put out by the park in the paths, but some hikers have just gone around the signs and made trails to the top of dunes anyway. The park is now experimenting with some sand barriers bulldozed transversely below dunes. To avoid bad spots near the surf, it seems vehicles edge closer to the dunes to seek routes down the beach. These sand dams may help.

We stopped several times going down the beach, with the leaders talking about the area and giving us opportunities to beachcomb. Park rules state that materials washed in by the recurring tides that do not fall into the categories of Antiquities prohibited by law to be disturbed or removal can be collected as beachcomber items. Therefore, one can collect shells tossed up on the beach. Sometimes storms do deposit many nice shells in the Big Shell area.

We saw many huge beds of Donax, sieved a few to show to visitors to Texas. The Sargassum was washing in but did not seem to have much in it and probably had been in the surf too long. One visitor collected a Pomacea with operculum. Many valves of Anadara chemnitzii and Chione clenchi were spotted.

Around noon we did arrive at Mansfield Cut. We had already seen some oil blotches on the sand. Our guide was constantly in touch with the park helicopters and his office so that he knew the progress of oil up our coast. We saw a boom on the beach lost by the Coast Guard in trying to establish a barrier at Mansfield to keep the oil from going into the Laguna Madre.

Dredging at Mansfield Cut was going on and much of the sand was being deposited on the beach near the jetties. Some of the collectors found fresh Murex fulvescens.

The Coast Guard had laid the boom across the cut and was tending it. Oil coated the jetty rocks and the rock rubble at the foot of the jetties where we entered the water to collect.

What we saw collected consisted of some live Thais and Littorinas. Some sea urchins were taken from the rocks. Big Siphonarias were everywhere. I did a little collecting in the rock rubble and collected a small, live bivalve that I know now is Sphenia antillensis, my first live one. I also collected a couple of Cantharus tinctus on the jetty rocks.

Lunch was a delight. Dr. Pulley had great fun teaching our visitors how to peel shrimp and we had all we could eat, plus his special recipe of gumbo. A jar of peanut butter sat unopened on the table. My question about the presence of this item brought the response from Dr. Pulley that he always came prepared in case someone couldn't stand shrimp! Or was allergic to seafood.

Homeward bound, we stopped a few more times, once to see the remains of the wrecked Nicaragua.

Coming home our driver was alerted by radio that someone had brought in a baby turtle to his station for identification and handling. A short time later he was informed that the rangers at the Nueces County Park had two baby turtles they thought were Ridleys. Then we found out that Jim has been very involved in hatching the endangered Ridley turtles from eggs sent to him from farther

down the coast. He asked if we would like to see the latest hatch and give him the opportunity also to check out the baby turtle at the station. It was a real treat to see the little turtles hatching and almost ready to start their lives in the Gulf. He has had almost 100 per cent hatch with his method of putting the eggs in sand in styrofoam coolers at his ranger station. To save the Ridleys, Jim says this seems to be more productive than leaving the eggs in the sand where deposited. A recent hatch at South Padre resulted in only one turtle, due to heavy rains it is thought. A round-the-clock watch had been maintained at the site. Jim determined the new arrival was a baby Loggerhead and said he would go to check out the other specimens. Both of these babies did turn out to be Ridleys but both had been chewed on a bit. This meant that these two were destined to fly to Galveston the next day for treatment and care. They will be released if they are healthy and able to withstand the fight for life these baby turtles make. If they were judged not strong enough, they would still be raised and maybe will end up on display at Searama. Jim's hatch was due to be released the next day on the Gulf beach near the ranger station. So, any time you do find a baby turtle stranded on our beaches, do try and remember to get it to a park biologist. It could be an endangered Ridley. Present research involves marking the released babies to give biologists more knowledge on life histories of the Ridleys.

It was almost dark as we drove back to LaQuinta Royale Motor Inn---the last field trip participants to arrive. It had been a wonderful day.

My white shelling pants are coated with oil from sitting on the jetty rocks, a reminder of the worst spill we've seen in our area. My tennis shoes are headed for the Varsol vat. I don't have memories of pristine beaches. There was debris the tides bring in from boats, many plastic items that seem to last forever. Since campers are allowed on this seashore, we think some of them haven't been the nicest kind of people because they've left behind some garbage. The beach is well patrolled, but there is no attempt to sweep the beaches clean and disturb the natural sands. The preservation is in our hands as much as nature's hands.



Fig. 4 - Dr. T.E. Pulley, Mansfield trip leader in his "Future Fossil" shirt made for him by our members Lottie Dunn and Eris Murphy. Dr. John N. Tunnell, Jr., also leader on this trip, is wearing the railroad cap.

Fig. 5 - Mansfield Cut, north side of jetty at lower end of Padre Island National Seashore. Scene of collection area of the AMU field trip.

INFORMATION ON PRIVATE MOLLUSK COLLECTIONS SOUGHT

The Council of Systematic Malacologists of the American Malacological Union is seeking to determine the malacological collection resources in the United States. A request was made for information from private collectors in last year's AMU Newsletter and also in Hawaiian Shell News. The response was low. Consequently, shell clubs are asked to get the information to members so that more collectors will respond.

Dr. Fred G. Thompson, chairman of this committee, states that a major problem confronting museums is the existence of large numbers of private mollusk collections about which little is known. Many of these have important scientific value. Frequently such collections are left to the heirs of a collector's estate after the collector has died. All too often, he said, heirs have little knowledge or appreciation of the value of such collections and are unprepared to dispose of them in the best interests of science and of those who built the collections. Frequently such collections end up in museums many years later after mixing and serious loss of data, catalogues, field notes, and indexes have occurred, which significantly decreases their scientific value. All too often collections are simply thrown out.

Information is solicited from those who have in their possession private shell collections. This information will enable museums to ascertain the whereabouts and nature of private collections having scientific value so that such collections are less apt to become lost, thrown out, or disposed of unwisely, and so that museums will be better prepared for growth in the future.

It is important that you who have such collections respond, according to Dr. Thompson. A published report on private collections as a national science resource will be presented to the AMU Council of Systematic Malacologists at the next AMU annual meeting in Louisville, Kentucky, next July. This report will not be updated for several years, so collections omitted may remain in oblivion for years to come.

If you have not sent in information, please take the time to send in the following information. This information may be coded: i.e. A. 20%, B. 60%, etc.

If you have a mollusk collection consisting of about 5,000 lots or more the following information is requested:

N. Approximate Number of Lots.

- A. Percent self-collected.
- B. Percent purchased.
- C. Percent traded.
- K. Percent shells only.
- L. Percent in alcohol.
- R. Percent land.
- S. Percent freshwater.
- T. Percent marine.
- W. Primary geographic areas represented by collection.

Please send your response to: Dr. Fred G. Thompson
Florida State Museum
University of Florida
Gainesville, FL. 32611

Recently, I came across a delightful little publication on the haliotids - some of my favorite mollusks, both conchologically and gastronomically. Published by Naturegraph in 1978, the booklet is titled THE ABALONE BOOK by Peter C. Howorth. The cost of the paper back edition is \$3.95.

The text provides good descriptions of abalones of the United States. The bulk of the book is very, very reminiscent of the California Department of Fish and Game Bulletin #118, written by Keith W. Cox and published in 1962. The Bulletin had the title CALIFORNIA ABALONE, FAMILY HALIOTIDAE and was a detailed scientific treatise on the West Coast abalone. (I suspect that the booklet by Cox is now out of print and probably unobtainable through routine channels.)

The new monograph by Howorth covers much the same material but is updated to current times. The book starts with brief mention of prehistoric evidence and archeologic shell artifacts. The chronology of the development of the abalone fishery on the US Pacific Coast is fascinatingly told.

Among the most informative reading are the commentaries on the current status of the abalone resource and the major problems related to pressures from commercial as well as sport fishery and from the sea otter in addition to the hazards created by pollution. Color photographs of the 8 Pacific Coast species are included. Described in detail are H. rufescens (red abalone), H. cracherodi (black abalone), H. corrugata (corrugated or pink abalone), H. fulgens (green abalone), H. walallensis (flat abalone), H. kamtschatkana (pinto abalone), H. assimilis (threaded abalone) and H. pourtalesii (Florida abalone).

In the diagrammatic outline of the systematics of the American abalones, three subspecies are listed. Apparently, they are all found on Guadalupe Island. One, a subspecies of the green abalone, is called H. fulgens guadalupens. A subspecies of the black abalone is designated H. californiensis. Both of these subspecies are described in Tucker Abbott's book and the distinguishing features are defined. The third, a subspecies of the pink abalone, H. corrugata oweni, is simply mentioned but the characteristics are not discussed. This subspecies is not listed by Abbott, suggesting the possibility that it may have been described only recently.

The book also has some recipes. I confess I have some deep prejudices when it comes to preparing abalone dishes. I get turned off promptly when instructions are given to "tenderize" or "pound" or "grind". My tastes have been conditioned ancestrally by millenia of familiarity with this molluscan delight and sensitized by more than half a century of direct exposure. Unfortunately this book, too, provides mostly the usual occidental type recipes.

Nonetheless, the book is strongly recommended. There is plenty of other good reading in it. The bibliography is a bit skimpy but actually there isn't much recent literature anyway.

Talking about abalones, here is a family that is fun to collect. The shells are showy - and come in all sizes. Both the outside and inside of each shell has interesting features. The numbers of species are not too many. For example, at this time, Abbott lists for the Western Hemisphere those species mentioned above and only three other species:

H. barbouri - Brazil

H. dalli - Galapagos
H. roberti - Cocos Id, Costa Rica

Guadalupe Island has been mentioned as the habitat for 3 subspecies: H. cracherodi californiensis, H. fulgens guadalupensis, and H. corrugata oweni. This particular island is situated in the Eastern Pacific about 200 miles west of the coast of Baja California (off Rosario) and about 300 miles or so southwest of San Diego. It is approximately at the latitude of Port Lavaca.

Abalones hybridize. A study of this phenomenon (Owen, B., McLean, J.H., and Meyer, R.J., "Hybridization in the eastern Pacific abalones (Haliotis)". Bulletin L.A. County Museum of Natural History Science: No. 9, 1977) indicates that .02 to .37 per cent of a given population of abalones may be hybrids. Abbott describes it another way stating that twelve type of hybrid crosses (Pacific Coast) have been recognized and that 2 of each 1000 abalones in a commercial catch are hybrids.

SNAIL SEASON

From The Busycon, Broward Shell Club publication, we have learned of a new kind of hunting season---snail hunting! Shell collectors of Liguus, the beautiful Florida tree snail that has been on the "closed season" list of shells in Florida for some years, will be able to gather live Liguus from October 1 through March 31 at all units of Big Cypress Wildlife Management Area. It will be legal to collect only Liguus tree snails in this wildlife area, no plants, etc. All hunters (that is how shell collectors are listed by the wildlife center) must wear orange headgear except during spring gobbler season. Only 10 live Liguus tree snails of any one color variation may be in the collector's possession. Archie Jones and Erwin Wente are credited with arranging for the snail season and they act as guides for members of the Broward Club on field trips to the Big Cypress area. Apparently, collecting is on a very controlled basis as the club was planning an October field trip and members going had to be on a list supplied the wildlife area.

Bart Jones, owner of Shells and Accessories and an HCS member, had an interesting experience recently at his establishment. One morning he found his warehouse crawling with live Candy Striped Snails (Oxystyla undata). The marvel of this is that the snails had already been through his commercial cleaning process and had been put on racks to dry. They had apparently been well closed up with their aperture membranes manufactured while the snails estivate. Chemicals didn't seep in and kill the animals but they were thoroughly aroused!

MOLLUSCANA

By W.W. Sutow

While the news commentator was lamenting how high inflation was pushing the consumer prices, I happened to be browsing through Tom Rice's "A Catalog of Dealers' Prices for Marine Shells" (Fifth Edition - 1977). It is probable that most of the readers will have this useful (\$5.00) booklet. The information, as in previous editions, was based on retail price lists distributed by various dealers. Changes in prices indicate the market trends. The booklet serves as a checklist. Much like the stamp catalogs, the prices listed may not represent the actual prices at which the shells are sold. But the listed prices are useful to indicate the relative value of a given shell in respect to another. One can derive some idea as to how much a particular shell is worth for trading and liquidation purposes. The next edition (Sixth) is targeted for the fall of 1979.

Because of my long-standing personal liking for the bivalves, the listed prices for this group of mollusks were of particular interest to me. It was immediately apparent that, although the prices of many gastropods have sky-rocketed, the prices of bivalve specimens have remained rock-bottom low. The listed prices for bivalves started at 10 cents. The great majority of the species were below \$1.00. Rarely was the value of a bivalve listed as much as \$2.00. The few genera that contained the "expensive" items were, as anticipated, the Spondylus (up to \$85) and the Pectens (up to \$100).

Even though thorough search was not done, the "expensive" (over \$10) bivalves were rare. Some of the "high priced" items are listed below, starting with the Pectens:

amadis	\$12-15	mirifica	\$ 25
antillarum	10-15	multisquamata	50-65
aurantiacea	100	muscosus	
australis		(yellow)	18-25
(yellow)	15-20	nobilis	
cookei	5-35	(yellow)	10-15
dichroa	7-12	nodosa	10-35
diegensis	8-15	Over 6"	100
flexuosus	5-10	phrygium	10-22
imbricatus	8-12	speciosa	12-20
juddi	10	subnodosus	5-15
langfordi	50	superba	15-40
mildredae	60-75	tillamookensis	20
		townsendi	7-22

The spiny oysters that commanded the higher prices included:

aculeatus	\$12-25	regius	\$ 9-35
americanus	7-35	(orange)	85
hystrix	7-10	varians	17-20
imperialis	5-12	wrightiana	4-10
princeps	7-25		

There were a few other species in the "\$10 or higher" bracket (but not too many):

Semele junonia	\$10-15	Lima rathbuni	\$15-20
Cardium costatum	10-15	Pitar eucymata	5-10
Cardium pseudolima	6-12	Melocardia hawiana	15
Cardium victor	50	Cuspidaria hawaiensis	15
Clavigella ramosa	15	Pitar dione	5-10
Corbula mansfieldi	10		

Something like a 20-inch Tridacna gigas should cost a good price, but there, much of it would represent the expense of transportation. All of the Tellinas were listed under \$5 with the vast majority under \$2. Of the 3 bivalves described among the 50 in Peter Dance's Rare Shells, Fimbria soverbii is listed at \$7.50 in Rice's list. Spondylus regius is listed as shown above but the third shell, Pholadomya candida, is not found under that name. Among the species not listed by Rice is Agriopoma (Callocardia) texasiana.

Low prices can mean several things. Perhaps the species can be collected easily and in abundance. Perhaps there is no demand from collectors and dealers would not want to stock hard-to-sell items. But veteran shell collectors are acutely aware of one fact. A low price does not mean ready availability. Very frequently, it can be most difficult to obtain specimens of a very common and inexpensive species.

After seeing Tom's tabulation of prices, I dug out the old price lists (mid-1950 to 1965) that used to be mailed out periodically by John Q. Burch. I had intended to search through these ancient lists to see what the shells cost in the far past. But, on second thought, such an effort did not seem to be very productive. Instead, it seemed that some comments about the lists themselves might generate some reader interest.

These price lists were fabulous and tremendously educational. They far transcended in academic value their purpose as a price list of specimen shells for sale. The mimeographed Burch lists were numbered and occasionally dated. Each set varied from a few sheets to a dozen pages or more. The specimens were systematically described family by family. Many of the Burch comments are notable. He introduced the Pelecypods (List 380) saying "as a rule the bivalves are of interest to the specialist, but some of them are colorful enough to dress up any collection." About Asaphis vilascens (Forskol), he says "shells of this group arrive with an amazing variety of names. Perhaps Dr. Abbott will advise on this one when he gets to it. These are nice specimens in any event and interesting."

Burch had a marvelous library and a tremendous background of knowledge. In List 525 (page 12) Burch talks about the genus Codakia. He says "if we are to follow Chavan...we would consider the generic name Codakia not available, and would prefer to adopt in its place the equivalent name Lentilaria Schumacher, 1817, Type: Venus punctata Linne. However, the name Codakia is so very familiar, and in general use by virtually all authors, it seems logical to me at least at this time to retain Codakia, but with type Venus punctata Linnaeus. Many authors have accepted Venus orbicularis Linne as the type. No doubt the International Commission will in time settle this with countless others". (All this effort went in to describe specimens selling for \$.50 to \$1.00).

Further down the page, Burch comments on Codakia lacteola Tate, 1897 (selling for \$0.75): "I am placing this here with some doubt. B.C. Cotton gives the species this assignment, and I have followed, but the shells are very similar indeed

to those I have assigned to Lucina (Callercina) from this coast. I may be in error".

The book reviews by Burch also reflected his profound knowledge and wide interest. He say of one book: "All scientific names are given with dates and a comprehensive bibliography. A very good glossary explains the technical terms used in scientific descriptions. This is of value not only to the layman but to the advanced students because authors differ in their terminology. The index is adequate. This is important. We have too many books that contain valuable information, but with an index so poor that the reader cannot find it".

In List 552, dated October, 1965, it was announced that the entire stock and specimen shell business had been sold. A year later, in 1966, John Q. and Rose Burch retired from the book business. I have thumbed through some of the current dealers' lists I happened to have. They seem, in comparison, quite barren. This is understandable. The ready availability of increasing amounts of books and printed literature probably obviates the need for any dealer to duplicate the Burch-type approach.

It seems most unfortunate that so many of the new generation of shell collectors will have missed this conchologist giant. John Q. Burch died in August, 1974, at age 80. The Burches were early subscribers to the Texas Conchologist.

MEMBER GIVES COLLECTION TO MUSEUM

Carl T. Young, Jr., our long-time member, has given his entire collection of mollusks to the Corpus Christi Museum. Acceptance was announced at a fiesta, Mexican supper and program at the museum during the recent annual meeting of the American Malacological Union at Corpus Christi. Carl has spent many years collecting Texas and Mexican beaches but has been associated with building the general collections at the Museum and wants his shells to be used there for others to enjoy and study. His interests have become very varied in recent years. He is raising Bromeliads and is still teaching. He said he felt a great relief to know that the shells are of use to the museum.

DISTRIBUTION AND RECORDS OF THE MARINE MOLLUSCA IN

THE NORTHWEST GULF OF MEXICO

(A Continuing Monograph)

Family PLICATULIDAE

Represented in the Northwest Gulf of Mexico only by the single recent genus Plicatula. Careful comparison of the available material in the H.M.N.S. collection leaves no other choice than the conclusion that so far at least three recent species of Plicatula have escaped detection in the Western Atlantic. In total at least four different species are present in our material.

Sources: L.R. Cox and L.G. Hertlein, Treat. Inv. Pal., Vol. N, Part 1, p. 377-378.

C.D. Shaak and D. Nicol, Tul. St. in Geol. and Pal., Vol. 11 (2).

M. Keen, Seashells of Trop. West. Am., 1971, p. 94-96

Genus Plicatula Lamarck, 1801.

Plicatula is a medium sized bivalve up to slightly less than two inches in size, triangular to elongate in shape, or even round attached by the right valve. There is a single muscle scar, sometimes slightly raised. In each valve there are two elongate crenulated ridges (crurae) which fit into corresponding sockets and which make adhering valves almost impossible to separate.

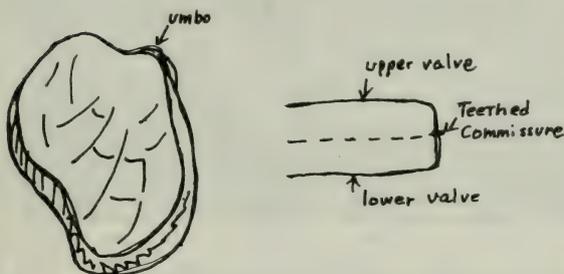
I was astounded to find these previously unknown species among our oyster material, where they were mistaken for juvenile Pycnodonte hyotis and Lopha frons. One is a very large species reaching 45 mm. in size of rather indeterminate box like shape, almost smooth with faint pattern of radials; the second is a very flat almost circular species with a much subdued development of the crurae reaching 32 mm. in size, much like the Eastern Pacific Panomioides Keen, the 3rd species is a long and elongated one with strong zigzag plication at the margin and reaching 37 mm. in size, so that it resembles Lopha. The remainder of our specimens of Plicatula are all smaller or just about 1 inch in size and form a bewildering complex of shapes and forms. Further study might reveal the presence of two species in this material.

338. Plicatula spec. indet. A.

The material of this huge Plicatula is extremely puzzling. Available for study is only a single lot of 3 complete specimens one of which was live collected by divers. Their diameters are 45, 41 and 20 mm. Immediately a comparison with large Eastern Pacific species and the recently described fossil P. hunterae Shaak and Nicol suggest itself. The latter almost certainly can be ruled out, since it looks very much like an overblown P. gibbosa presenting all the characters of the genus in a clear and unambiguous manner. Our two largest specimens are rather flat and box like with scarcely any radial sculpture and just at the margin where the valve turns sharply about 90 degrees small

teeth appear, which in one specimen especially are slanted backwards and peter out toward the umbo. The lower valve is attached over practically its entire surface, and hardly shows any radial sculpture but rather a faint reticulate pattern. None of the Eastern Pacific species figured by Keen, 1971, even remotely resemble this curious shell. The color is an even grayish dirty brown without spots. The

small specimen of 20 mm. may or may not be this species because it is more inflated near the umbo, but one valve is convex, the other concave.



For fear of breaking the strongly adhering valves I have not yet separated the valves and hence can at this moment provide no partic-

ulars about the hinge. The largest specimen, however, can be opened partly and its plicatulid hinge verified.

Previous records for the Texas faunal province: None

Records H.M.N.S.: 1 lot of 3 complete specimens one of which was collected alive, all from Stetson Bank.

Depth Range: About 20 fms., attached to dark Miocene shale.

Geographical Range: Only known from Stetson Bank.

Maximum Size: 45 mm.

Eastern Pacific Analogue: None.

339. Plicatula spec. indet. B.

From another Miocene shale uplift, unnamed on nautical charts, but dubbed "Three Hickey Rock" because of three closely spaced steeply rising protuberances ($28^{\circ}20'45''$ - $92^{\circ}26'30''$) off Louisiana a single lot of another highly curious species was obtained. It is almost circular in shape, the commissure is hardly even undulatory, the valves are thin for Plicatula of that size, the surface of the unattached valve is quite irregularly sculptured by radials, giving more the impression of bumps than of radial folds and the hinge is much subdued. The crurae are short and faintly brown colored. Available are only two upper valves collected from live specimens by divers, who apparently could not pry the entire animal from the rocks. Their round form and very flat shape without zigzag teeth is quite uncharacteristic for Plicatula and I suggest that possibly this species is closely allied to P. anomiooides Keen, 1958, from the Eastern Pacific. Both valves are thinly encrusted by calcareous algae so that their true upper sculpture cannot be seen. Whatever of this surface is visible shows irregularly spaced small brown spots. Shaak and Nicol mention that in their material of fossil Plicatula from Florida another Plicatula is present which is round and flat. Comparison seems to be indicated.

Previous records for the Texas faunal province are: None.

Records H.M.N.S.: 1 lot of two upper valves, collected from live animals.

Depth Range: 8-10 fms. on Miocene shale uplift. Their immediate substrate is unknown.

Geographical Range: Only known from given location.

Maximum Size: 32.5 mm.

Eastern Pacific Analogue: ? P. anomoides Keen, 1958. "Guaymas to Mazatlan, Mexico; attached to flat surfaces of rocks" (Keen, 1971).

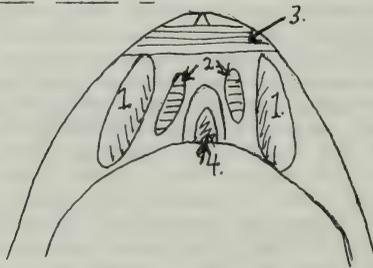
340. Plicatula spec. indet. C.

Whereas both previous species in all probability eventually will be elevated to a different subgenus, the 3rd large Texas Plicatula is at least closer related to P. gibbosa Lamarck, 1801. Fortunately more than one lot is available for study. They show a shell of varying but mostly quite elongate shape with very strong and outspoken zigzag plications at the margin. The first specimens were obtained from the offshore coral reefs, practically entirely embedded in limestone and only part of the strongly plicated margin showing toward the outside. For this reason they were mistaken for Lopha frons, which was an absurd assignment but my own. One live collected specimen was taken on Three Hickey Rock, probably malacologically one of the most remarkable spots in the entire Atlantic, the other on the Flower Garden reef. There are many differences between this species on one hand and P. gibbosa and P. hunterae on the other. One of these differences even suggests to me that P. gibbosa (and perhaps P. hunterae?) is different from all other Plicatula here listed. They are:

1) Spec. indet. C. reaches to 37 mm. in size, P. gibbosa about 25 mm. and P. hunterae 60 mm. In a large live collected specimen there are about 22 marginal plications.

2) Its shape is quite elongate and never subtrigonal as for P. gibbosa and P. hunterae (figures 1 and 2 of their paper). Our largest specimen has grown somewhat broader and flatter than most of the others but cannot be said to resemble figures 3-6 of Shaak' and Nicol's paper. Thus the name P. hunterae must be rejected for our material.

3) At the umbo there appears an important difference in structure with P. gibbosa, under the microscope the upper area of the crurae and socket structure of the hinge is delimited by a straight line, and above it a triangular area strongly striped with parallel horizontal lines is visible in P. gibbosa. This area is missing in P. spec. indet. C.



- 1 - reticulated crurae
- 2 - sockets
- 3 - horizontally striped area
- 4 - resilium

Sketch of umbilical area of P. gibbosa

4) The entire hinge structure is much heavier developed in spec. indet. C. than P. gibbosa. The large crurae of the upper valve are brown in color in P. spec. indet. C.

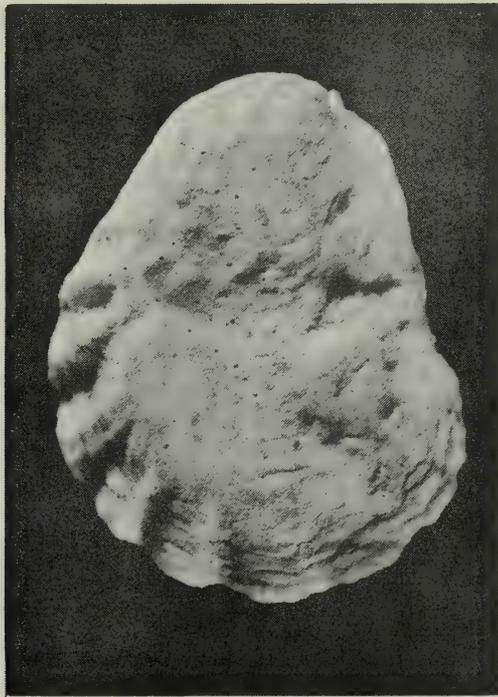
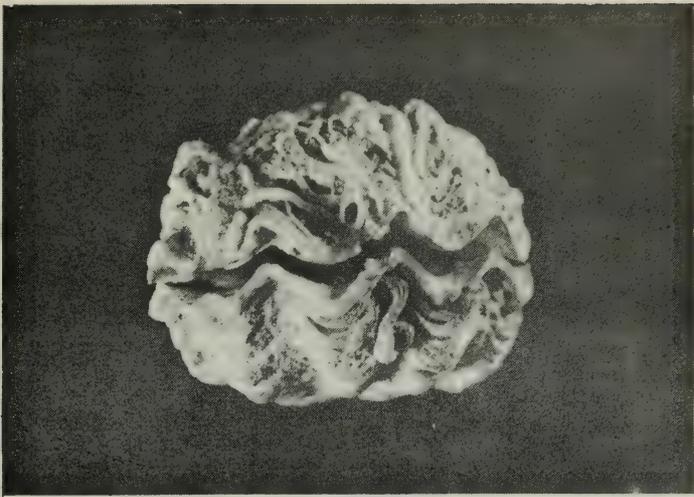


Fig. 6 - Plicatula gibbosa Lamarck, 1801, 22.5 mm., collected by Harold Geis diving in 8 fms. 32 miles ESE of Galveston, Texas, bottom sample, Nov. 8, 1964.

5) In many Plicatula gibbosa somewhat elongate tubercles (long axes perpendicular to margin) are aligned along the entire margin of the shell. This latter character makes me wonder whether P. gibbosa Lamarck, 1801, should not be placed in the subgenus Darteplicatula Freneix and Gordeski, 1963. No trace of these tubercles is ever seen in P. spec. indet. C.

In common with P. gibbosa is the fact that in some valves (not all) the muscle scar, about half way the length, is elevated to a raised pad. A few true P. gibbosa valves, (by no means all) show the same phenomenon. The outer surface of our material is mostly heavily encrusted and the clear radial sculpture of P. gibbosa is not visible in P. spec. indet. C. I believe it does not exist and that the upper valve becomes irregularly sculptured on its disc. Internally the only color is of the crurae and a greenish hue in one of the valves (attached); the outer surface is spotted with brown. There are a number of synonyms known for P. gibbosa (for some see Abbott, 1974). Before any of these 3 species can be named it should be verified whether any of these was not mistakenly synonymized with P. gibbosa Lamarck, 1801.

Previous records for the Texas faunal province: Probably reported as P. gibbosa by Parker, refs. 147, 175, also in ref. 156; 206, Tex. Conchol., Vol. IX, p. 77 (as Lophia frons).

Records H.M.N.S.: 6 lots, two of which contain live collected material on calcareous environment and on shale uplifts.

Depth Range: 9-28 fms., alive at 9 fms. and 20 fms.

Geographical Range: So far only known from N.W. Gulf of Mexico but probably unrecognized in many other areas (Yucatan?).

Maximum Size: 37 mm.

Eastern Pacific Analogue: None, although P. inezana Durham, 1950, might be remotely related.

341. Plicatula gibbosa Lamarck, 1801.

Of all species of Plicatula in the N.W. Gulf of Mexico this one is the most difficult to understand. It is so variable in shape and sculpture that comparison of extremes always reinforces my belief that two different species are involved. However, I am unable to separate them in a significant manner. There is apart from visible evidence some indirect evidence for dividing our material into two groups. The species is practically missing in the depth range of 25-45 fms. Above it dead valves are quite common, but live ones are quite rare; below it an even single brown form with pipelike scales becomes abundant, and which is at least locally abundant. It may, however, be merely an ecological deepwater form which often are more spinose than shallow water shells. Already mentioned is the presence of tubercles along the inner margin of the upper valve in Plicatula. In the lower valve these tubercles correspond to small pinhole depressions. In very fresh material they are sometimes difficult to see but in somewhat worn and blue discolored material the tubercles stand out clearly white against a colored background.

Plicatula gibbosa is a common and widespread species along the Texas-Louisiana coast, but surprisingly is not often collected alive, except in deeper water. It seems to avoid the coral reefs and shale uplifts. It is not rare in beachdrift along the entire coast although I have never seen live material on our beaches. Specimens from the bay areas

are rare except south of Matagorda but most such specimens are probably fossil juvenile valves are surprisingly flat considering the knobby and imbricated development later. In shape the species is extremely variable and although the subtrigonal form usually illustrated occurs quite often many specimens are irregular and distorted.

Previous records for the Texas faunal province are: 7, (as *P. ramosa* Lamarck), listed; 15, cited from Galveston; 18, Galveston, 45, Galveston; 56, "Florida to Texas"; 110, occasional worn valves on all Texas beaches, pl. 8, figs. 8-9; 136, off East Texas between 30-58 feet, alive at 40 feet; 138, deep shelf, alive; 147, dead on Baker Bank, dead on Big Southern Bank, alive on East Flower Garden. (Note: these are probably different species); 156, Stetson Bank (Note: probably a different species); 170, transitional shelf assemblage off East Texas; 175, calcareous bank assemblage, abundant mostly deeper banks, attaching (Note: probably not this species); 192, plate 11, figs. 1-2; 201, listed; 206, beach records Tex. Conchol., Vol. II, p. 2; 225, Galveston; 236, Galveston; 253, on reef off Padre Island, rare; 269, figured on page 166.

Records H.M.N.S.: 49 lots, of which 8 contain live collected material. Depth Range: 0-27 fms.; 40-63 fms. The shapes in both ranges are different. Alive 6-20 fms. and 40-55 fms.

Geographical Range: North Carolina to Florida, Texas and the West Indies. Bermuda. Brazil. (Abbott, 1974).

Maximum Size: 25.5 mm.

Eastern Pacific Analogue: ?

SUPERFAMILY ANOMIACEA

Family Anomiidae

Shell often irregular in shape, lustrous inside, and both valves dissimilar in development. A byssus passes through a foramen in the lower valve and becomes calcified with age. Muscle scar in the middle portion of the valve. In the N. W. Gulf of Mexico at least two species.

Sources: M. Keen in Treat. Invert. Pal., Vol. N, p. 383-385.

Genus Anomia Linne, 1758.

Thin, lustrous shells with three muscle scars in central area of right valve (upper valve).

342. Anomia simplex d'Orbigny, 1842.

Anomia simplex d'Orbigny, Moll. Cubana 2, p. 367, pl. 38, figs. 31-33 (1845?).

Anomia simplex d'Orbigny is not an easy species to evaluate. Although one of the most widespread species in the N.W. Gulf of Mexico it presents several minor problems. Two of these are: 1) large specimens are often dredged, but so far never alive; 2) there are smooth shells and shells which are covered by a dense pattern of short radial grooves.

In dredged material the flat valve is seldom encountered, except for the thickened area around the foramen. This hole is formed by a growth process during which the valve grows around a byssus which calcifies with age. There appear to be many variations in shape, sculpture and

coloring. Among Texas material large specimens (40 mm.) are often dredged but live material is always much smaller. Because of its attachment to a hard substrate, the lower valve assumes this shape, which remarkably also can be seen in the upper valve. The sculpture is rather smooth but often there are densely spaced short, irregular radial grooves on the outer surface of the inflated valve. In juvenile material smaller than 3 mm. these grooves are not present.

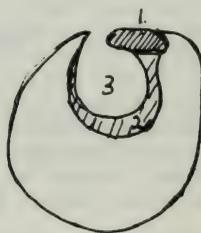
The muscular impressions are situated in a triangular area which extends from the umbo into the middle part of the shell. Especially in small and still juvenile material this triangle shines pure white through the glossy shell. In the lower half of this area the shell is internally thickened by an extra layer of calcareous material in which three impressions are located, whose relative position is somewhat variable. This calcareous layer breaks easily away from the glossy ground material in older valves.

In the umbral cavity is situated a "niche and ledge" structure for the attachment of the other valve. Close to this structure is a small muscular impression. Onto this structure fits a thickened pad on the lower valve.

The color in fresh specimens and material from the bays is often orange but most specimens from dredgings are pure glossy, greenish or yellowish in color. Often specimens have a silvery sheen.



- 1 - umbo
- 2 - "niche and ledge" structure
- 3 - small "tooth" in niche (shown somewhat displaced, it is closer to the umbo)
- 4 - 2 small muscular impressions
- 5 - whitened calcareous pad with 3 muscular impressions



- 1 - pad fitting on ledge structure of upper valve
- 2 - thickened portion of lower valve
- 3 - foramen

Lower valve

The species is quite ubiquitous. It lives in the coastal bays (oyster reefs) but large specimens from beachdrift may be fossil. In the open sea live specimens have been obtained at a depth of 50 fms. and dead specimens are known from 70 fms. Rare on the coral reefs and known from the mudlump fauna. In older records sometimes call Anomia gabra.

Previous records for the Texas faunal province are: 7, listed, 15, single valves abundant at Galveston and Corpus Christi; 18, Galveston, alive at Corpus Christi; 19, large specimens in Espiritu Sancto Bay, smaller in Carancahua Bay, Keller's Bay, Lavaca Bay and Matagorda Bay; 21, listed; 45, Galveston, Corpus Christi, Tex.; 61, Port Aransas area; 62, Indian Point, Corpus Christi Bay; 66, marine Pleistocene of Texas; 67, Point Isabel; 69, listed in Appendix 8; 91, sparingly on all jetties, dead on other shells; 98, alive in several bays near Corpus Christi; 110, occasionally worn shells on all Texas beaches, often found living on oysters, pl. 8, figs. 3-5; 135, dead in Gulf, alive in bays; 136, off East Texas, alive; 143, Matagorda Bay; 145, upper sound, inlet, shallow shelf, deep shelf, Mississippi Delta, plate 5, figs. 18A-B; 147, Baker Bank; 156, common on Stetson Bank; 160, dead at many locations in Matagorda Bay; 164, common in many environments at Rockport and Laguna Madre; 170, transitional shelf assemblage; 174, listed high salinity oyster or mollusk assemblage, plate 2, fig. 20; 193, on inner surfaces of dead oyster shells, alive; 201, mudlump fauna; 202, Campeche, Mexico, pl. 1, fig. 4; 206, Tex. Conchol., Vol. V, p. 2; 225, Galveston; 236, Galveston; 253, uncommon, reef off Padre Island; 269, figured on page 168.

Records H.M.N.S.: 114 lots of which 29 contain live collected material.

Depth Range: 0-70 fms.; alive 0-50 fms.

Geographical Range: Cape Cod, Massachusetts, to Florida, to Texas to Brazil. Bermuda. (Abbott, 1974).

Maximum Size: 42 mm.

Eastern Pacific Analogue: ?

343. Anomia (?) spec. indet. A.

A second species in the genus Anomia is present in the H.M.N.S. collection. A small single valve dredged at 75 fms. may be another species, but until more material can be obtained it is useless to speculate further even about its generic affiliation. (Heteranomia?).

Previous records for the Texas faunal province are: None.

Records H.M.N.S.: 1 lot, no live material.

Depth Range: 75 fms.

Geographical Range: Unknown.

Eastern Pacific Analogue: Unknown.

Genus Pododesmus Philippi, 1837.

Only two muscle scars in central area. Two subgenera present, Pododesmus and Tedinia, which however appear very much the same.

344. Pododesmus rudis (Broderip, 1834).

Placunanomia rudis Broderip, Proc. Zool. Soc., London, p. 2, 1834.

Although in many respects very close to Anomia simplex, this species

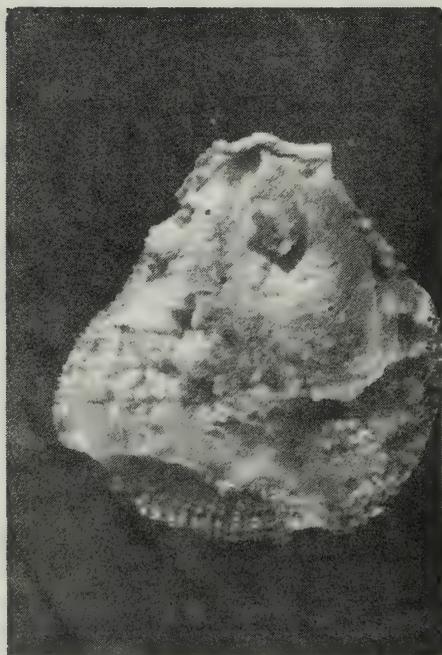
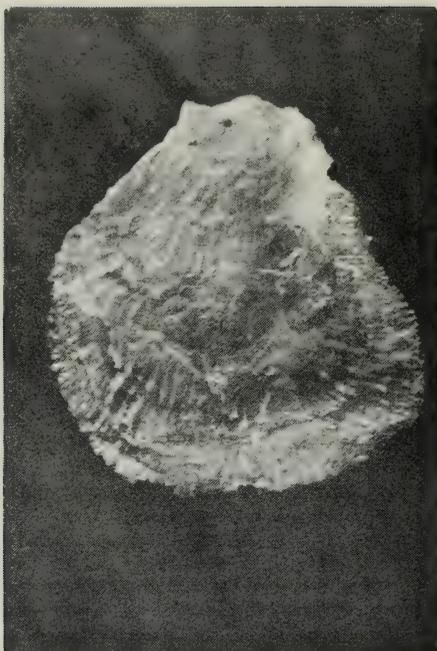


Fig. 7 - *Pododesmus rudis* (Broderip, 1834), 40 mm., taken in 12 fms. by dive at "Seven Sisters", a rock outcrop of Pleistocene age 31 miles ESE of Galveston, Texas, collected by Harold Geis and Wendell Pierce Aug. 22, 1966.

is easily separated from Anomia. In the first place there are only two muscle scars in the middle area of the valve. The calcification of that area is not as outspoken as in A. simplex. The triangular area under the umbo of the inflated valve is much more irregular and carries at the apex a much more pronounced protrusion than in A. simplex. As in Anomia there is at one extremity of it a small muscular impression. Its outer sculpture differs considerably from A. simplex. There are interrupted radial lines over a field of small and densely spaced bumps or pustules. The color is a grayish brown, which is often intensified somewhat near the umbo. This species usually reaches a larger size than A. simplex. The lower valve usually pressed tightly to the substrate often differs considerably in sculpture from the upper valve. Not seldom this valve possesses strong irregular lamellae which rarely develop into hollow spines.

This species lives in small quantities all over the Louisiana-Texas shelf area, and is in contrast to A. simplex, common on the offshore coral reefs. Live specimens are known from the Port Isabel jetties and Bolivar Peninsula (in a large cavity of porous shell material) and a dead but fresh valve has been collected on Sabine Beach, East Texas. A synonym is P. decipiens Philippi, 1837.

Previous records for the Texas faunal province are: 147, dead on Baker Bank; 156, common on Stetson Bank; 174, listed; 206, beach records Tex. Conchol., Vol. V, p. 3, 1968; 253, rare on reef offshore Padre Island; 269, figured on page 168.

Records H.M.N.S.: 33 lots of which 8 contain live collected material.

Depth Range: 0-70 fms.; alive 0 (beach) - 28 fms.

Geographical Range: Carolinas-Florida, Texas to Brazil (Abbott, 1974).

Maximum Size: 61.5 mm.

Eastern Pacific Analogue: ?

345. Pododesmus (Tedinia?) spec. indet. A.

Two lots only of this species were obtained. One consists of two extremely curious and elongate specimens live collected from the living tissue of a sponge on the Flower Gardens. I am somewhat puzzled by the main characteristic of this subgenus, the "resilium on a pedestal-like chondrophore". It is true that in these two specimen the pedestal is enormous, but in Pododesmus proper the resilium is also elevated and even Anomia shows it. The foramen in both specimens is indeed closed but this may be due to its mode of living. There is absolutely no trace of any radial sculpture which is formed by irregular small bumps. The upper valve is slightly brownish, the lower valve pure white. Further material of this interesting "species" which ultimately could prove to be Pododesmus rudis Broderip is necessary to evaluate our material properly.

Previous records for the Texas faunal province are: None.

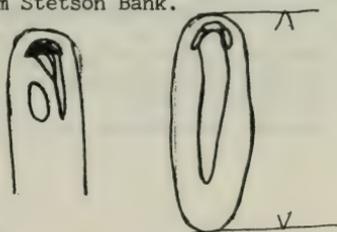
Records H.M.N.S.: Two lots of 2 live specimens from Flower Gardens and one lot in living sponge from Stetson Bank.

Depth Range: 27 fms.

Geographical Range: Unknown.

Maximum Size: 35.8 mm.

Eastern Pacific Analogue: ?



35.8 mm.

Family DIMYIDAE

Small, rather flat and round bivalves attached by the right valve, internally and externally lustrous. Two muscle scars (dimyarian). In the N.W. Gulf of Mexico the genera Dimya and Dimyella, represented by three species.

Sources: L.R. Cox and L.G. Hertlein in Treat. Invert. Pal., Vol. N., Part 1, p. 382.

R.T. Abbott, American Seashells, 1974 (2nd ed.), p.451

I have some difficulty in understanding the usual arrangement of this family under the Pectinacea. In many respects these bivalves are extremely close to Anomia in particular with respect to the characteristic "niche and ledge" structure so prominent but hardly ever described in detail, in Anomia. Of course Dimya is dimyarian and Anomia monogarian and its hinge does not resemble that of Dimya at all. So this feature is not considered of much phylogenetic importance by systematicists. Also the foramen in the lower valve of Anomia could be interpreted as a later adaptation of Anomia.

Genus Dimya Rouault, 1850.

Small, somewhat irregular roundish and flat bivalves often with a silver lustre. Our scant material is hardly sufficient to decide with certainty the specific characters of D. argentea Dall, D. tigrina Bayer and an as yet undescribed species.

346. Dimya argentea Dall, 1886.

Dimya argentea Dall, B.M.C.Z., Vol. 12, No. 6, p. 228, pl. 4, figs. 5a, 5b. 1886

Off the coast of Louisiana this species reaches its most north-westerly area in the Gulf of Mexico. So far no material has been taken off Texas, but it could well be that the reason for this is insufficient sampling in the 100-200 fms. depth range. Three of the seven lots of Dimya in the H.M.N.S. collection are without doubt D. argentea Dall, 1886. The surface area of these shells is smooth but crinkly, there is little color except a dull even brownish hue. However, some juveniles (not in H.M.N.S. collection) show faint radial color patterns so that distinction from D. tigrina Bayer is not always easy. Some specimens show radial sculpture and in one valve internally radial ribs are present.

Previous records for the Texas faunal province are: 206, Tex. Conchol., Vol. IX (1973)*, p. 77 (most in error).

Records H.M.N.S.: 4 lots, of which one contains live collected material. Depth Range: 55-235 fms.; alive at 125 fms.

Geographical Range: North Carolina to West Indies (Abbott, 1974).

Maximum Size: 6.0 mm.

Eastern Pacific Analogue: None.

347. Dimya tigrina Bayer, 1971.

Stud. in Trop. Am. Mollusks, 1971, p. 223-225, fig. 69.

This small bivalve is immediately recognized by its color pattern of reddish brown radial bands and blotches. Also the surface area is smoothly by crinkly in contrast to that of the 3rd species. The excellent description and discussion by Bayer and his figure leave little

doubt that our 3 lots are this species but no comparison with type material has been made yet. Apparently Bayer himself was not quite certain about the specific differences in Dimya when he wrote: ". . . . , there are few reliable taxonomic characters by which species of Dimya can be distinguished". The chance that this species will turn out to be an ecological form of Dargentea Dall I consider remote, although 2 of our 5 lots may be juveniles of argentea because the color is faded.

Previous records for the Texas faunal province are: None.
Records H.M.N.S.: 5 lots none alive, on mud and coral rubble.
Depth Range: 50-76 fms.
Geographical Range: North coast South America (Columbia).
Maximum Size: 6.0 mm.
Eastern Pacific Analogue: Dimya californiana Berry, 1936. Southern California to Angel de la Guarda Island, Gulf of California in 89 to 1227 m. (Keen, 1971).

Genus Dimyella Moore, 1969.

A genus differing from Dimya by two violet teeth at the end of the hinge line.

348. Dimyella spec. indet A.

A single lot of 4 complete specimens and loose flat upper valves is in all probability a different species. They come from a single sample containing many tens of specimens of this species. These small bivalves, of which the attached one is rather deeply cupped and the upper valve, much flatter, is conspicuously sculptured by strong lamellose concentric fronds. An important difference with the two other species is the much heavier development of the hinge line which also is much straighter (Dimyella, Moore?). Most important is the presence of two rather well developed tooth-like protuberances on the sides of hinge, in the deeply cupped valve which fit into socket-like depressions on the flat valve. Our species comes from fairly deep water, in contrast to the species described by Moore, which inhabits very shallow water.

Previous records for the Texas faunal province are: None.
Records H.M.N.S.: A single lot of 3 complete specimens, one still attached to hard substrate, and 3 loose valves.
Depth Range: 85 fms., on sand bottom.
Geographical Range: Unknown.
Maximum Size: 4.4 mm.
Eastern Pacific Analogue: None.

SUPERFAMILY LIMACEA

Family LIMIDAE

Large to minute, white, usually radially ribbed, oblong bivalves. Hinge line straight, without teeth, with internal resilium. Some species construct nests of byssus threads and other species can "swim" with the valves in sideways vertical position. In the N.W. Gulf of Mexico the genera Lima, Ctenoides, Divarilima, Limea and Limatula.

Sources: N.D. Newell in Treat. Invert. Pal., Vol. N, Part 2,
p. 385.

H.E. Vokes, Tulane Studies in Geol. and Pal., Vol. 10 (2),
p. 87-96, 1973.

Genus Lima Bruguiere, 1797.

Somewhat trigonally shaped, rather flat bivalves with short hinge line and subequal auricles. There are several subgenera, some of which are considered as full genera in the treatise. In the N.W. Gulf of Mexico live 5 species.

349. Lima (Lima) lima (Linne, 1758).

Ostrea lima Linne, Syst. Nat., 10th Ed., 1758.

A single valve was obtained from Hospital Rock off Port Aransas. It is typical for the species, rather flat, with straight somewhat spiny ribs, whose spines are rather worn down. Many workers consider the Lima lima complex of recent species as a single species. Vokes has reviewed several of the opinions in the literature and favors the name Lima caribaea d'Orbigny, 1842, for the tropical Western Atlantic species.

Previous records for the Texas faunal province are: 269, figured on page 16g, rarely, adventitious from Mexico, on the beach of South Texas.

Also reported from Alacran Reef, Mexico. (Ref. 192).

Records H.M.N.S.: A single valve from Hospital Rock, no live material.
Depth Range: \neq 35 fms.

Geographical Range: Florida, Caribbean area, probably world wide in tropical waters.

Maximum Size: 26 mm.

Eastern Pacific Analogue: ?

350. Lima (Limaria) locklini McGinty, 1955.

Proc. Acad. Nat. Sci., Phila., Vol. 107, p. 84, pl. 2, figs. 12, 12a.

Surprisingly this quite recently described species is widespread in the N.W. Gulf of Mexico. It lives on mud bottoms or fine sandy bottoms and fragments are often found in dredgings. The small size and extreme fragility of this species cause most specimens to break during dredging and washing of samples. Once a single specimen was obtained from beachdrift at Sargent, Texas (206, Vol. VII, p. 94 and 99). The species is characterized by its very elongate and extremely skew shape, its often indistinct radials and a small but protruding prodossoconch. Our material from the deeper part of its range may be different but is too fragmentary to draw reliable conclusions. The species occurs also in the mudlump fauna.

Previous records for the Texas faunal province are: 206, Tex. Conchol., Vol. VII, p. 94, 99, Vol. IX, p. 77.

Records H.M.N.S.: 24 lots, no live material.

Depth Range: 0-50 fms., optimal 10-30 fms., in mud and sandy mud-bottoms.

Geographical Range: Gulf of Mexico and Caribbean (Abbott, 1974).

Maximum Size: 8.6 mm.

Eastern Pacific Analogue: ?

351. Lima (Limaria) pellucida C.B. Adams, 1846.

Lima pellucida C.B. Adams, Proc. Bost. Soc. Nat. Hist., 2, p. 103.

See also Clench and Turner, Occ. Pap. Moll., Vol. 1, 1950.

This species presents somewhat of a problem, because in our area there live two different, quite similar, but easily separable (at least when full grown), species, one of which has not yet received a valid name. In this discussion the name Limaria pellucida has been given to the smallest of both species, mainly on the basis of a figure of the lecto type selected by Clench and Turner (Occ. Pap. Mollusks, Vol. 1 (15), pl. 43, figs. 8-9) which coincides very closely with Texas material of the smallest species.

The "pellucida" complex has a long and complicated taxonomic history of confusion, still not resolved, pointing to the need for a critical revision of this world wide group of species. Dr. T. Pulley was the first to draw attention to the fact that two species lived in offshore Texas waters but his proposed name for the other species has not yet been validated (Ph.D. thesis). The differences in both species are most easily observed in the surface sculpture. Lima pellucida C.B. Adams has densely crowded radial ribs having sometimes a nodulose appearance. The intracostal areas show clearly visible growth increments giving the shell a rough appearance under magnification. Often there are small additional radials in between the larger ones. In the as yet unnamed species the radials are much more squarish in crosssection, are also somewhat nodulose, are much wider apart and the intracostal areas are much smoother. In overall appearance the undescribed species is more elegant and shinier and the outline of the posterior ventral margin is different because the radial ribs stand out as slight points on the margin. Another difference is the inflation of the umbonal area. In L. pellucida the umbo is much fuller and more inflated than in the other species. Finally, there appears to be a significant difference in size: Lima pellucida reaches about 13 mm. in size, which is the demension of the specimen figured by Clench and Turner, whereas the other species can reach about 1 inch in overall length.



In the N.W. Gulf of Mexico Lima pellucida C.B. Adams lives offshore on sandy shelly bottoms, optimally between 12-30 fms., but a single juvenile valve was collected by me from beachdrift at South Padre Island (trawler shell?) and specimens have been dredged as deep as 55 fms.

Previous records for the Texas faunal province are: 147, alive on Baker Bank, alive on Big Southern Bank; 170, transitional shelf assemblage, pl. 9, fig. 2 (probably next species), 206, Tex. Conchol., Vol. II (1) are next species, Vol. VII, p. 99, Vol. IX, p. 77; 214, deep shelf, dead; 253, rare, one live individual collected under a rock in 35 feet of water; 269, figured on p. 169, possibly next species. Several other authors have mentioned Lima sp. (Ref. 156, 192, 201, 226).

Records H.M.N.S.: 14 lots, no live material.

Depth Range: 0-55 fms., optional 12-30 fms., on sandy shelly mud bottoms.

Geographical Range: Unknown. (Lecto type from Jamaica).

Maximum Size: 10.2 mm.

Eastern Pacific Analogue: ?

352. Lima (Limaria) spec. indet. A.

The main points of difference with the previous species have already

been discussed. This is the species that on rare occasions has been taken from beachdrift along the Texas coast (Galveston, San Luis Pass, Mustang Island and South Padre Island), but was reported as Lima pelucida C.B. Adams. It can reach to slightly over an inch in overall length. Also known from fragments in the mudlump fauna.

Vokes in 1973 has described Limaria (Limaria) chipolana, which in many respects, except a single important one, appears to be identical with the recent Texas material. Whereas recent material tends to grow to 25 mm. in size the fossil Florida species reaches only 9 mm. Whether the lack of larger sized material is due to insufficient sampling or not cannot be judged here. Vokes examined 116 specimens. The possibility that our specimens are related to another fossil (from the Caloosahatchee), L. caloosana Dall, 1898 is not probable although the size would fit, but Dall's figure shows a valve which is considerably broader than our material.

Previous records for the Texas faunal province are: See previous species. Records H.M.N.S.: 24 lots, of which one lot contains live collected material.

Depth Range: 0-37 fms., alive at 15 fms. in shelly sandy bottoms, on Miocene shale uplifts and in calcareous environment. Also in the mudlump fauna.

Geographical Range: Uncertain as long as confusion with previous species has not been cleared up.

Maximum Size: 25.5 mm.

Eastern Pacific Analogue: ?

Genus Divarilima Powell, 1958.

The species in Divarilima are so different from the Lima and Limaria groups that Divarilima must be accorded generic rank. They are somewhat trigonal bivalves with divaricating surface sculpture. Their most characteristic feature is the sag or fold in the anterior dorsal margin just below the hinge area (see figs. 4a, 4b, p. 388, Vol. N, Part 1 of the Treatise of Invert. Pal.).

353. Divarilima albicoma (Dall, 1886).

Rima albicoma Dall, Bivalves Blake Report, p. 225, 1886.

This very curious and interesting bivalve has been exclusively dredged in the calcareous environment off Louisiana and Texas. It undoubtedly lives in the Flower Gardens (10-31 fms.) but I have so far not yet seen live material from that location. It has also been taken in water as deep as 55 fms. off Louisiana.

Previous records for the Texas faunal province are: None.

Records H.M.N.S.: 7 lots, no live material.

Depth Range: 10-55 fms., in calcareous environment.

Geographical Range: Florida Keys to Barbados (Abbott, 1974).

Maximum Size: 7.5 mm. (broken specimen, about 9 mm. unbroken).

Eastern Pacific Analogue: ?

Genus Limea Brown, 1831.

Rather small, cardiid looking bivalves, with strong radials and hinge with denticles on each side. Auricles small.

354. Limea bronniiana Dall, 1886.

Limaea Bronniiana Dall, Bivalves Blake Report, p. 226, 1886.

This small species has only been taken in a few lots off the Louisiana coast and a single lot off Texas. It conforms well with figures available to me and Dall's original diagrams. It may be noted here that the figure labelled 5264 in Abbott, 1974, is not a Limea but a Limatula. (Probably its number should be 5252).

Previous records for the Texas faunal province are: None.

Records H.M.N.S.: 12 lots, no live material.

Depth Range: 28-85 fms.; in mud bottom. The only Texas lot comes from 28 fms. in calcareous environment.

Geographical Range: North Carolina, Florida, West Indies (Abbott, 1974).

Maximum Size: 4.2 mm.

Eastern Pacific Analogue: ?

Genus Limatula S. Wood, 1839.

Small equilateral bivalves, strongly inflated without gape, but with crenate margin. The Texas species are difficult to identify, because it is impossible to find descriptions which take the characters of all eight described Western Atlantic species in to account. Abbott, 1974, describes a single species and merely lists the other seven. In the N.W. Gulf of Mexico live four different species but I am unable to assign several of them a definite name. Our four species can be differentiated mainly by their general shape and ornamentation of the radial elements.

355. Limatula setifera Dall, 1886.

Limatula setifera Dall, Bivalves Blake Report, p. 225-226, 1886.

This species has finely beaded radials, which in large specimens may almost become spinose. It is a rather ovate species and not as elongate as some others. Our few specimens conform rather well with Dall's original diagnosis and original figure as reproduced by Abbott, (1974). The two slightly deeper median grooves are not pronounced at all in this species.

Previous records for the Texas faunal province: None.

Records H.M.N.S.: 5 lots, no live material. All taken in mud or sandy mud in deep water, off Louisiana (3 lots) and Texas (2 lots).

Depth Range: 51-110 fms.

Geographical Range: "Carolina's to West Indies" (Abbott, 1974).

Maximum Size: 9.7 mm.

Eastern Pacific Analogue: ?

356. Limatula spec. indet. A.

Very scant material of a deep water Limatula is quite different from the other species. Our material is thin shelled, and the shell has developed strong concentric ridges which where they cross the radials develop into almost horizontal scales. Until more material is obtained little can be added to these notes. The 2 median grooves are well developed. This could be L. laminifera (E.A. Smith, 1885).

Previous records for the Texas faunal province are: None.

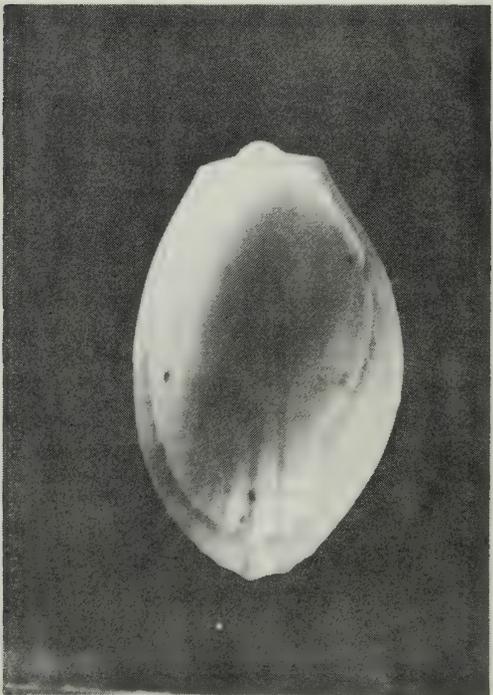
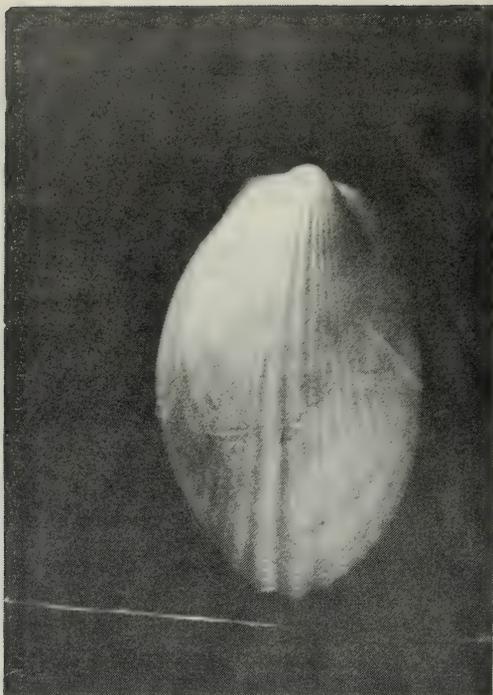


Fig. 8 - *Limatula spec. indet. B*, 7.1 mm., collected by dredge and grab from 500 fms., 105 miles SE of Freeport, Texas, by Harold Geis and S. Stubbs June 17, 1967 (They lost 1300 meters of cable). Sample was unctuous gray mud.

Records H.M.N.S.: 2 lots, no live material.
Depth Range: 450-500 fms., off Texas in mud.
Geographical Range: Unknown.
Maximum Size: Except for a single piece, fragments indicate +5 mm. size.
Eastern Pacific Analogue: ?

357. Limatula spec. indet. B.

This small species is characterized by two deep median grooves and strongly nodular radials, different from all other species of the genus. In the outline the median grooves protrude slightly in the ventral margin. We do not even venture a guess as to its name.

Previous records for the Texas faunal province are: None.
Records H.M.N.S.: 3 lots, none alive.
Depth Range: 110-167 fms., in mud bottoms.
Geographical Range: Unknown.
Maximum Size: 7.2 mm.
Eastern Pacific Analogue: ?

358. Limatula c.f. hendersoni Olsson and McGinty, 1958.

This is the most commonly collected Limatula along the Texas and Louisiana coast. It conforms overall reasonably with L. hendersoni, but it could be that some material is juvenile L. subauriculata (Montagu, 1808), under which name we reported this species in the Texas Conchologist, Vol. IX, p. 77. Some of our lots are rather variable and are mainly grouped there because we are at a loss to classify them in a more definite manner. Until the characters of the several species of Limatula are better understood it is impossible to assign several of the lots of rather juvenile shells a more definite name.

Previous records for the Texas faunal province are: 206, Tex. Conch., Vol. IX, p. 77 (as L. subauriculata).
Records H.M.N.S.: 14 lots, none alive.
Depth Range: 25-170 fms.
Geographical Range: Unknown.
Maximum Size: 7.6 mm.
Eastern Pacific Analogue: ?

Remarks:

Limatula subauriculata Montagu has been reported in reference 170, pl. 16, figs. 1a-b.

Probably also in the N.W. Gulf of Mexico live the giant Lima (Acesta) bullisi Vokes, 1963, of which I have seen fragmental pieces said to have been dredged off Louisiana.

Genus Ctenoides Morch, 1853.

Oval, long, somewhat compressed shells, with a byssal gape. In the N.W. Gulf of Mexico only a single species.

359. Ctenoides scabra (Born, 1778).

Ostrea scabra Born, Test. Mus. Vind., p. 110.

This species lives commonly on the offshore coral reefs and Miocene shale outcrops. The live animal has a beautiful orange color. In the N.W. Gulf of Mexico only the very finely striated form (tenera, Sowerby, 1843) lives. Juveniles of this species are much rounder in shape than mature specimens, and show considerable affinity with Divarilima, which is probably closely related.

There is some uncertainty about the correct designation of this species. Lima tenera Sowerby, 1843, according to Vokes (1973) must be rejected as a primary homonym and he reached the conclusion that the correct name to be given to the abundant material from the offshore coral reefs should be Ctenoides (Ctenoides) floridana Olsson and Harbison, 1953, thus implying that the coarse ribbed scabra is specifically different from the finely ribbed floridana. Apparently recent specimens tend to be larger in size than fossil ones suggesting to Vokes that this species is experiencing a progressive phylogenetic size increase.

Previous records for the Texas faunal province are: 147, dead on Baker Bank, Big Southern Bank, and West Flower Gardens; 170, listed for deep shelf assemblage off East Texas, pl. 6, fig. 1; 175, listed for calcareous banks assemblage, common, 30-65 fms., pl. 6, fig. 30; 192, listed, pl. 7, figs. 4A-B; 201, listed in appendix (mudlump fauna).
Records H.M.N.S.: 12 lots, of which 5 contain live collected material.
Depth Range: 9-55 fms.; alive 9-26 fms.
Geographical Range: South Carolina-Florida, Texas-Brazil (Abbott, 1974).
Maximum Size: 82 mm.
Eastern Pacific Analogue: ?

Photos by Harold Geis

To be continued

ANOTHER WORD ON NOMENCLATURE

A note has been received by the Editor concerning the publication of explanation of a name change concerning a Texas shell. In the July, 1979, issue of Texas Conchologist it was announced that information had been received on the reason for returning to the specific name of barretti in the Andrews' book when the small snail from Galveston Bay was put into a new genus Texadina by Dwight W. Taylor. Dr. Emily Vokes of Tulane University has written to say that the original Odostomia barreti and Odostomia barretti are considered to be homonyms. "The one letter difference is only for genera", she states. "Rule 58(6) says use of single or double consonants do not prevent homonymy", she reported. "The fact that they are named for two different people is irrelevant". Therefore, the name of this small snail will once again become booneae and will be referred to in this publication as Texadina booneae (Morrison, 1973).

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The TEXAS CONCHOLOGIST accepts contributions for publication from amateurs, students, and professionals, subject to approval by the Editor. Manuscripts should be typed, double spaced and should be in the hands of the Editor the first day of the month preceding publication dates. Photos accompanying such material are welcomed.

In late October (October 27th) we headed toward one of our favorite shelling places - T.J. Stone State Park near Port St. Joe, Florida. Going East across Mississippi we began to see signs of Hurricane Frederick.

When we arrived in Pascagoula, it was evident we were near where the center of the devastating storm had passed. Southeast offshore from Pascagoula lies Petit Boie Island, one of several barrier islands along that part of the coast. It's about three-fourths to one mile long with a varying width of one to two hundred yards. There is no fresh water, little vegetation and visitors to this island are mostly fishermen.

A friend offered to take us out in his boat to the island and we jumped at the chance to visit a new shelling spot. He and his family had collected shells on the Eastern tip of the island before and said that that end was usually the best place to find shells. We climbed from the boat to the dingy about two blocks from the tip of the island.

Shelling was poor until we were almost to the end and then bonanza! We picked up Pecten gibbus by the handfuls, ranging in beautiful light oranges to dark grays. There was a variety of sizes and shades of ear shells, several three inch long olives, and a "family" of pear whelks that had washed over the high side of the island. lying in a row, some perfect bonnet shells and a half dozen Distoris which we considered our "find" of the day.

While we found no live shells, it was a great day and proves there's no better time to shell than after a storm.

SHELL AUCTION IN APRIL

A new year and a new decade are upon us and the 1980 annual shell auction of the Houston Conchology Society is just around the corner. This year's auction has been designated for the April meeting.

Plans are being made to include a regular auction of specimen shells, a silent auction table of shells and shell-related items, an assortment of surprise boxes, and a large sale table of reasonably priced shells.

We are in the process of obtaining shell donations from many shell dealers in the United States and overseas. In addition to dealer donations and purchased shells by the auction chairmen, members and friends of the Houston Conchology Society are urged to donate specimen shells, with data as complete as possible. All donations are tax deductible. The proceeds from the auction are used to maintain and increase the club's shell library, publication of the Texas Conchologist, and a donation to the Houston Museum of Natural Science

Examine your collection for possible donations and in the next few weeks, when you are shelling, bring home extras for the club. Please feel free to bring your donations to the February and March meetings.

This fun filled evening has become an extravaganza and its success is largely due to the generosity of many HCS members, generosity of both time and donations. Your help is needed.

Mark your calendars and plan to spend a delightful evening at our April meeting. If you have any questions or suggestion, please contact us.

The auction is open to our members only. Urge your friends to join the club.

Dave and Lucille Green
(713) 493-1179

The first field trip of the 1979-1980 club year was a fossil collecting outing to Austin. Those who did not make the trip really missed a wonderful adventure into the past. The weather was very good and we had plenty of sun, but not too much. Also, this was an important fossil location for the state of Texas where many fossil examples can be collect at locations easy to find and with no problems of getting to the sites. Geologically, the fossils from the Austin area are from the Cretaceous age, approximately 80 to 120 million years old. During this period of time, shallow seas covered most of the central Texas area and extended as far north as Canada. Generally speaking, many of the living animals were very similar to those presently found in the Galveston Bay area - principally of the oyster family. These mollusks of long ago were deposited in a mud which has hardened into a shale or marl. The original strata where these mollusks were deposited was covered by other layers: this zone has been brought to today's earth surface by uplifting of the earth. In the Austin area this uplifting is known as the Balcones Fault Zone. Due to fracturing of the ground areas, zones of varying geological age can be found within a short surface distance. Thus, during the day's outing we were able to search areas of approximately 40 million years difference in age.

Our group gathered at the first location for the day at a site on Little Walnut Creek. Little Walnut Creek crosses Highway 290, about 1.6 miles east of the intersection of IH 35 and US 290 and about 0.5 miles west of the intersection of US 290 and Texas Hwy. 183. At this site, 14 members and guests joined Shirley and Jim Knight of the Houston Gem and Mineral Society, Paleontological Section, who were our leaders. Little Walnut Creek cuts deeply into a marl zone containing many fossil layers, with the fossils being principally of the oyster family. References indicate that the predominant PELECYPODA to be found at this location are Exogyra laeviuscula, E. tigrina, E. erraticosta, Pycnodonte auccela and Ostrea centerensis. This was a typical oyster bed and shell halves were very easy to find. Several members found complete oysters. If you are looking for a fossil hunting site on a warm summer day, this would be the site you should select. The many trees growing along the banks of the creek would give much needed shade on a hot day.

For the next collecting location, we traveled backwards in time to approximately 100 million years. This location was at a road cut near the intersection of Loop 360 and South Lamar Boulevard (US 290 and Texas Hwy. 71). The road cut was through a claystone, which looked like the Houston area gumbo after drying and breaking into many tiny pieces. The predominant fossil was Ilymatogyra arietina, a member of the oyster family. These fossils were colored a rusty brown due to geological replacement by pyrite. Our leaders stated that some of the dirt should be taken home and searched for foraminifera. The BRACHIOPODA Kingena wacoensis can also be found at this site.

We next moved to a location approximately 1 mile west (on Bee Cave Road) from the intersection of Loop 360 and Bee Cave Road. This was a steep sided cut in a marl. Due to weathering, the mollusks were more predominate at the bottom of the road cut. That did not stop all the ones who wanted to go up the side of the cut and see what could be found farther up the hill. Those who did not go with us missed a lesson in how to act like a mountain goat. References indicate that the predominant PELECYPODA at this location are Ceratostreon texanum, Texigryphaea mucronata, Neithea occidentalis, N. ir-

regularis and species of Lima and Trigonia. There were many GASTROPODA internal molds and also examples of ECHINOIDEA and AMMONOIDEA.

For the last stop of the day, the Knights took us to their favorite sea urchin collecting location. This was a totally unmarked road cut. The sea urchins were quite abundant and everyone found several. This site was from the lower Cretaceous period with an approximate age of 120 million years. The most commonly-found urchin was Loriolia rosanna.



Field trippers getting instructions from leader Knight



HSC "mountain goats" at roadside cut

Photos by the Sappingtons



Ruby McConnell in Little Walnut Creek

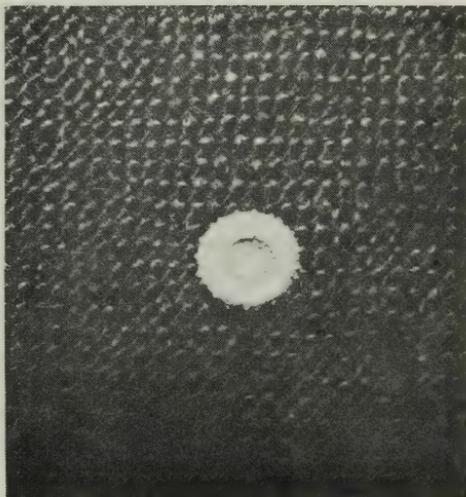
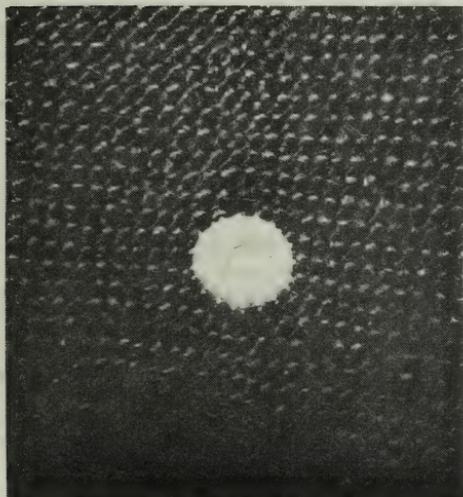


Exogyra tigrina Stephenson, 1929, common at the Little Walnut Creek station just north of Manor Highway (291), Austin, Texas.

Photo by Constance Boone



Ilymatogyra arientina (Romer, 1852), abundant at road cut on Ben White road near Barton Spings bridge. Most specimens are pyritized. Enlargement is of specimen with both valves intact.



Loriolia rosanna Cooke, 1946, sea urchin found at a cliff cut on Highway 71, near Austin, Texas.

Photos by Constance Boone

SEARCH AND SEIZURE

By Constance E. Boone

How many of you have really tried to prepare and eat mollusks from our shores in Texas? First off, you'll say, "Don't be silly, I eat oysters and they are mollusks." To be sure, you do eat them, and probably scallops and clam chowder in restaurants. I'm not sure how many of you go gather your own oysters, clams and scallops. The pressure to collect mollusks in our area is so light that it is almost unfelt. I guess Texans are too much beef oriented. Some, like me, happen to be allergic to some mollusks!

Commercially, oysters are probably the only mollusks regularly collected from Texas waters. I've been told the oysters collected in the Matagorda Bay area are the most succulent of them all. Every year when I hit that area to search for shells on Matagorda Beach and it happens to be oyster season I know I can make my husband happy if I stop and pick up a fresh gallon of oysters. Frankly, the piles of shucked oysters sitting along the road are of more interest to me because I have found that many nice pairs of Ischadium recurvum are still attached to the oysters.

Early residents of Texas, especially the Indians, gathered several species of marine mollusks for food, as evidenced in the kitchen middens. The Indians also enjoyed fresh water mussels from the rivers. I have collected hundreds of the mussels from the rivers, and I confess that I have never tried to eat them. As many times as I have collected through the Eastern states with collectors seeking Unios I have yet to note that any of them suggested we eat them. However, they are edible if you can assure yourself that the waters they are taken from are free of pollutants. This last summer there was an article in the Texas Parks and Wildlife Magazine about fresh water mussels, and a recipe was given for making chowder from them. The directions were similar to those for making a marine clam chowder.

Occasionally I have tried to savor the broth from a batch of Donax. Several club members do use the juices from Donax to concoct a soup or to add to other mollusks for chowders. Please save the shells for Dr. T.E. Pulley!

At Harold Geis's home one Sunday during the work sessions on assembling and sorting the mollusks for the Northwest Gulf Mollusk Population Survey we were introduced to a chowder made with Mercenarias and Geukensias (ribbed mussels). The mussels were bitter. Harold also offered us cocktails made from boiling Littorina irrorata. I can still see one member of the club trying to dig out the operculums from the boiled shells to get out the bit of meat to dip in the sauce provided. Harold said that Indians ate the shells so we should try them too.

Many club members have eaten clam chowder made from our Mercenarias. Dumb me - I didn't know until recently that the young Mercenarias were the East Coast Cherry Stone Clams offered in raw bars there. I don't know anyone trying raw Mercenarias in Texas, but I'm sure someone coming here from the Eastern states would use them raw if they found them. Clarice Van Erp took some of the Dosinias home once from San Luis Pass to try them in the fashion she used "battered clams" collected on her home Pacific Coast area. I have never heard the result.

We no longer find beds of scallops often enough to eat them here consistently, but club members on that trip to Corpus Christi Bay several years ago will

remember the bonus collection of Argopecten irradians amplicostatus and that we did not waste the meat of a single one. They were delicious broiled with garlic butter. Leola Glass taught us how to peel out the muscles for eating.

The Indians evidently relished Rangias, but beds of these have diminished somewhat, and I don't actually know anyone eating them in Texas today. Usually they are found in such mucky mud they don't appeal to me, but some beds are in sand and fairly clean shells are collected. In December I saw hundreds of Rangia cuneata in nice sand at Austwell, Texas, and when I boiled them for cleaning the odor was good and the meat seemed very clean. I didn't try them because I am so allergic to Mercenarias now that I avoid most mollusks.

I asked Dr. Pulley if anyone in recent times has used Rangia commercially near us. He replied that he thinks there was a commercial Rangia plant in New Orleans, La., during World War I but that he doesn't know of anything since then.

The Proceedings of the National Shellfisheries Association, Vol. 69, 1979, had an article discussing the growing interest in Rangia as a food product in North Carolina. The report by Paul G. Comar, Bernard E. Kane, Jr., and Donald B. Jeffreys discussed the sanitary significance of the bacterial flora of the brackish water clam, Rangia cuneata, in Albermarle Sound, N. Carolina. This was a scrutiny of the safety of this clam from a microbiological standpoint. They stated that between 1966 and 1971 over 300,000 pounds of Rangia meat were harvested from North Carolina waters. It was marketed as a breaded product sold to several motel and restaurant chains both within and outside North Carolina. Reports were that the product had excellent flavor. The article also said that large quantities of Rangia were canned in ocean clam liquor and sent to a seafood market in New York where they were then seasoned, canned in cocktail sauce and sold as seafood cocktails. This was terminated in 1972 because a shipment was rejected on high plate count. Also the Rangia growing waters in eastern Albermarle Sound were closed by the state shellfish sanitation authorities.

The article went on to say that the waters were reopened in 1976 and that a new marketing interest in Rangia has developed. The present report said that standard plate counts of Rangia in North Carolina fluctuated but that potentially pathogenic bacteria of the genera Salmonella, Shigella, Vibrio and Staphylococcus were recovered at very low levels and posed no unique threat to public health by bacteria flora in North Carolina Rangia cuneata.

The chief problems with eating mollusks seem always to be the pollutant factors. In the December, 1979, issue of the New York Club Notes, Mathilde Weingartner wrote that the purification plant for hard shell clams, Mercenaria mercenaria, was presently in operation on Staten Island. This plant has a process of pumping salt water into polyester-lined tanks where it is filtered continuously through corrugated boards and piping. After 48 hours, the clams are purified and considered edible. Ms. Weingartner reported that the clams are also irradiated with ultraviolet and that samples of the clams from every batch are sent to the New York City health department laboratory and tested for bacteria. So far, she said, only one batch was not clean. The clamming industry in New York was closed in 1961 because hepatitis was the disease attributed to come from eating the live clams. The clamming industry claims that Staten Island waters are full of clams today.

Long ago we had a club member who was a doctor who reported to the club that

even boiling clams would not destroy all bacterias. However, most of us do not eat the Mercenarias we find here alive, and Dr. Pulley says that the slow cooking of chowders surely kills bacteria. Last year in Offat's Bayou, a place I have considered rather polluted, I met a resident along the shore who regularly eats the Mercenarias from this body of water and has done so for several years with no problems from disease. Harold Geis used to solicit our aid in gathering Mercenarias from Offat's and our continued aid to replant them in cleaner waters in West Bay farther down the coastline where he would return a month or so later and gather food for his Sunday meals for the survey workers.

Once there was a young couple in the club who tried to eat Cyrtopleuras. They made angel wing fried cakes from them. They said they were good but tough.

Serviche, the raw food dish from fish and mollusks, is well known in Mexico - raw with lime juices and peppers, etc. Some members use Atrinas and Mercenarias for this also.

Yes, we'd survive without the daily beef dishes if we lived near the rivers and beaches. We haven't tried very hard to do this in Texas.

WE'LL CALL IT TEXADINA BARRETTI!

By Constance E. Boone

Dr. Dwight W. Taylor's recent nomenclature for the hydrobiid snail named by Dr. J.P.E. Morrison in 1965 has been determined by authorities to be correct, according to information I have now received from Dr. Emily Vokes. The small gastropod found live in Galveston Bay was designated as Texadina barretti (Morrison, 1965) by Dr. Taylor in Shells and Shores of Texas by Andrews, 1977. This was a change of genus and a return to the specific name of barretti. Dr. Morrison had changed the name from the original Odostomia barretti to Hydrobia booneae after discovering the gastropod was not an Odostomia and after stating that his barretti was preoccupied by another Odostomia barretti.

A report of Dr. Taylor's explanation was given in Texas Conchologist, Vol. XV, No. 4, July, 1979, for his use of Texadina barretti.

In Texas Conchologist, Vol. XVI, No. 1, October, 1979, a report was given that Dr. Vokes felt that the ICZN single and double consonant rule applied in this case and that the shell should have the specific name booneae.

After consultation on the problem with other authorities on such rules, Dr. Vokes has now sent me information that she concedes in the use of the specific name barretti. The opinion given by Curtis W. Sabrowsky, research entomologist of the Systematic Entomology Laboratory, USNM, Washington, D.C., to Dr. Harold E. Vokes of Tulane University, is that the names barreti and barretti used for the Odostomias were good names and not homonyms. He did not think the single and double consonant rule applied to names of different origin and meaning and that the two Odostomia names were derived from different persons with his opinion that this meant a different origin and meaning.

So be it. Texadina barretti (Morrison, 1965) is what we'll name this tiny little snail found in the mud and sand near the Houston Yacht Club and which has been the subject of much reporting in Texas Conchologist through the years since 1968 when we first found them alive in Galveston Bay.

The San Blas trip was indeed a blast! Eighteen members of the Houston Conchology Society made the 13½ hour drive to Port St. Joe. Most of us arrived at the Cape San Blas Camping Resort on Wednesday, November 21 and got settled in our cottages. The cottages were small and didn't have all of the comforts of home. The Dave Green family camped in a tent in the park and was almost as comfortable, but we all survived and had a great time.

Early Thanksgiving morning Lucy and Jerry Clampit led the group to the boat ramp at T.H. Stone Memorial Park. We headed out to the sand bars north of the ramp. Almost immediately we were finding King's Crowns, Banded Tulips, and True Tulips in the grass around the sand bars. We also found some Marginellas, Olivellas, Nassa Mud Snails, Apple Murex, and two kinds of Busycons.

Probably the most exciting find was Charlie Azares' 14½ inch Lightning Whelk. Jerry Clampit found one that measured 11½ inches. Dave Green found some small Horse Conchs. As the tide turned, little Cones started popping out on the sand bars.

Friday morning Lucy and Jerry took us to the second picnic area in the park. This day we were to have found the Pecten beds in the grasses. We found many of the same things that we had found on Thursday. We also found Turbos, Cerithiums, and Periwinkles. Some of the bivalves that we collected were Venus Clams and Carditas. Matt Curtis found a beautiful live Sunray Venus and white, prickly Cockles while he was digging for sand dollars. Lucille Green found the nicest Murex of the day.

On Friday we also found the beautiful, large sand dollars. Many people collected urchins and starfish. Unfortunately, there were very few Pectens.

Several people left to drive back Friday or Saturday, but some stayed on and shelled on the Cape San Blas beach early Saturday morning. We collected some nice beach shells and Skate egg cases. Later in the morning, we returned to the Thursday shelling spot but shelled closer to the boat ramp. We collected some nice, but not very large, Horse Conchs, Olives, and Pectens.

By Sunday night most of us were back in Houston, tired but delighted with our finds. We were very fortunate with the weather. The cold front that Houston experienced stalled out about Panama City, Florida, so we had lovely weather and nice low tides.

The shells we have listed are the ones that were found in the greatest numbers and by the most people. Only a few specimens of many species were found, and we are not going to attempt to list absolutely everything.

The people who made the trip were Charlie Azares, Jerry and Lucy Clampit, Jim and Sandra Clark and children, Mary Ann and Matt Curtis, Max and Ruth Finer, Ruth Goodson, Dave and Lucille Green and children, Violet May, and Dorothy Whitson. The most fun was had by our trip mascot Brandi Clampit (pooch!).

Many of us were concerned to see visiting collectors indiscriminately

picking up all of the live sand dollars and shells that they could carry. Hopefully, they will not ruin this lovely collecting area.

Editor's Note: For those of you interested in going to this Florida state park, I offer information from the park's brochure. The 2,516 acre park is almost surrounded by water. (See the map). It is bordered on one side by the Gulf of Mexico and on the other by St. Joseph Bay. The park contains small fresh and salt marshes, freshwater ponds and the most scenic stretch of unspoiled beaches and dunes along the Gulf coast.

The park is named for T.H. Stone, one of the first settlers of Port St. Joe. It is open from 8 a.m. to sunset year round. The park is located on State Road 30, off U.S. 98 near Port St. Joe, Florida. Camping is permitted in areas located a short distance from the Gulf beach. There is a boat basin and ramp. Hiking trails are marked. The mailing address for the park is T.H. Stone Memorial St. Joseph Peninsula State Park, Post Office Box 909, Port St. Joe, Fla. 32456. The telephone number is (904) 229-3322. Camping spaces fill up rapidly in the summer months, but there are few people camping in the area in the winter months.

The field trippers from HCS stayed in the resort cottages outside the park but on the road into the park off 98. (Cape San Blas Resort, (904) 229-6800).

Many HCS members visit this park in the spring and summer months also. There are very, very good low tides in July and August and scalloping is usually good then but there are many more people in the park. The shelling, however, is very comfortable during the summer. Snorkeling is profitable. The same shells found by the HCS group in November are available during the summer also. Very colorful Donax are readily available on the Gulf beach during the summer months.

The park is located between Panama City and Appalachicola on the West Coast of Florida. There are motel accommodations at both these larger cities within day driving distance to the park. Port St. Joe also has motels.

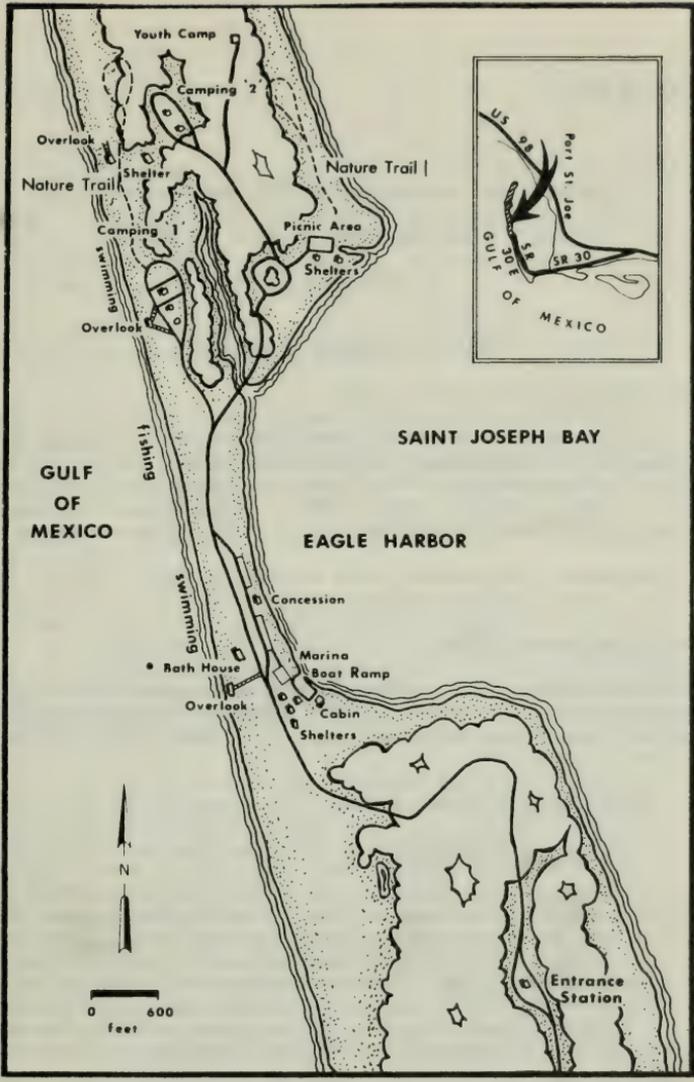


Charlie's big Busycon



Dave's tiny Horse Conch

Photos by Jerry Clampit



T.H. Stone Memorial
 St. Joseph
 Peninsula
 state park



DISTRIBUTION AND RECORDS OF THE MARINE MOLLUSCA IN
THE NORTHWEST GULF OF MEXICO

(A Continuing Monograph)

SUPERFAMILY OSTREACEAFAMILY OSTREIDAE Rafinesque, 1815.

In general large, somewhat irregular bivalves with a single adductor muscle and cemented to substrate by lower (left) valve. Anatomical differences are the basis for splitting off the family Gryphaeidae. (See Stenzel, Part N, Vol. 3, of Treat. Invert. Pal., 1971). In the Texas-Louisiana region off the Gulf Coast occur the genera Ostrea, Crassostrea and Lopha.

Sources: H.B. Stenzel, Part N, Vol. 3, Treat. Invert. Pal., 1971, p. 953-1217.

Genus Ostrea Linne, 1758.

Relatively small oysters, seldom forming clumps, and with a colorless muscular impression. There are several important biological differences between this genera and the genus Crassostrea (See Abbott, 1974, or Menzel, 1955, ref. 133).

360. Ostrea equestris Say, 1834.

Ostrea equestris Say, 1834, Am. Conch., Vol. 6, p. 58.

Of all bivalves living on the Texas-Louisiana shelf area this one is most often dredged alive. Dead shells of other species may be more common but Ostrea equestris Say, appears the most widespread living bivalve. In offshore waters it takes the place of Crassostrea virginica. It almost appears to form banks on reefs but specimens attach themselves simply to hard substrate such as other shells, pieces of metal, rocks, etc. Probably the species is even more widespread than our records indicate because the extremely small prodossoconchs, which are rather spherical (resembling minute Vesicomya in shape) are not rare in sand washed out of samples.

Not always has this material been sufficiently closely scanned for such minute shells (+ $\frac{1}{4}$ mm. = .01 of an inch). Somewhat surprisingly Abbott (1974) states: "not very common except in some Florida Bays". Along the Texas-Louisiana coast at least it is one of the most common bivalves offshore and has been found alive to a depth of 55 fms. The optimal range appears to be between 15-30 fms. and another optimum is in the hypersaline bays of the Texas coast (0-3 fms.).

The species is easily separated from C. virginica by several characters: 1) the presence of a series of "denticles" in the um-

bonal area in juveniles and in mature specimens all around the edges of the valves; 2) the lack of coloration (purple) of the single adductor scar. (Only valid for large material because in juvenile C. virginica the impression is not yet colored); 3) a greenish outer sheen of fresh and mature valves; 4) it never reaches the enormous size and weight of C. virginica.

It may be noted that often O. equestris has purple streaks, which although they may contain the muscular impression, never color it exclusively.

The shell shape is as in all oysters extremely irregular. In smaller valves the beadlike prodissococonch and the sometimes strong rotation of the valves are noteworthy. Some bay specimens possess sharply crested folds which are clearly visible on the valve margins so that these specimens could be mistaken for Lopha frons, which in our area however is restricted to the coral reefs and where Ostrea equestris is quite rare.

In the hypersaline coastal bays the species is also common. In the depth range of 5-15 fms. it would be less common because much of this region is sandier than the mud bottoms it prefers. During dry hot spells in the summer and during winters with little precipitation. it could invade the territory of C. virginica. Only relatively late it was recognized as an important faunal component and was then first reported as O. cristata Born, 1778, which however is South American.

Previous records for the Texas faunal province are: 69, listed in appendix 8; 92, fairly common in Texas, alive at Port Aransas. Common in Lydia Ann channel, Port Aransas; 93, taken three times in trawls in the Gulf, 2 and 5 miles offshore from Port Aransas; 123, on old tire in 15 fms. off Padre Island. On shell bottom east of Freeport on many shells; 133, complete biology of the species, dead in Gulf, alive in bays; Sabine Bank; high salinity oyster reef, pl. 38, fig. 7; 143, Matagorda Bay; 145, upper sound, inlets, shallow shelf, plate 2, figs. 11A,B,C; 156, common on Stetson Bank; 160, alive in Matagorda Bay; 164, abundantly alive (Rockport area) on high salinity reef, alive Laguna Madre; 170, transitional shelf assemblage, alive; 174, listed; 175, high salinity assemblage pl. 2, fig. 9; 193, alive, common in Port Aransas area, near jetties and along causeway; 206, beach records in Tex. Conchol., Vol. II (9); 208, "oyster reef" environment; 225, Galveston; 236, Galveston; 253, abundantly found on rocks along the bottom of the Gulf side of reef off Padre Island; 269, figured on page 170.

Records H.M.N.S.: 112 lots of which 46 contain live collected material.

Depth Range: 0-70 fms.; alive 0-55 fms., optimal 15-30 fms. and hypersaline bays.

Geographical Range: Virginia-Texas, West Indies, Brazil (Abbott, 1974).

Maximum Size: 52.5 mm.

Eastern Pacific Analogue: ?

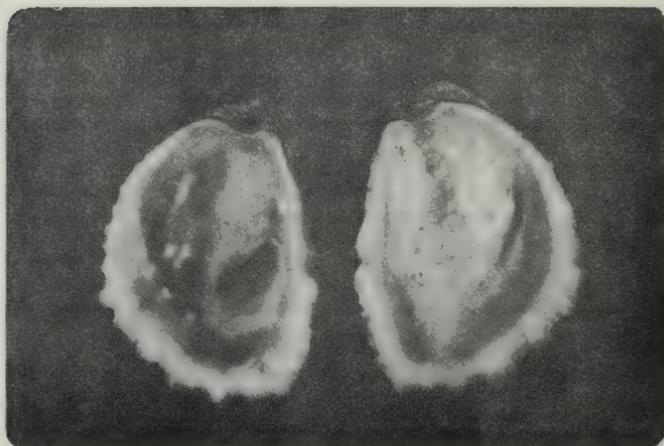


Fig. 1. Ostrea equestris Say, 1834, collected by Harold Geis at Hoecker's Point, Galveston West Bay, Texas, on mud flats Feb. 27, 1968, 30 mm. length, 20 mm. width.

Photo by Harold Geis

361. Ostrea permollis Sowerby, 1841.

Quite rare in the Texas-Louisiana shelf area. Previously I had reported a specimen from the offshore coral reefs - Flower Gardens - (see Tex. Conchol., Vol. IX, p. 23), but the specimen turns out to be colorless misshapen specimen of Pododesmus rudis living in the mass of a sponge. However, a small but so far unidentified valve from the Sabine Pass area collected dead in a mass of bryozoa on a sponge is probably this species. It lacks the tubercles of O. equestris and its color is correct - golden sheen - but more material is needed for confirmation.

Previous records for the Texas faunal province are: 156, on Stetson Bank, listed in appendix 3; 206, Tex. Conchol., Vol. II (9).
Records H.M.N.S.: 1 single valve from 15 fms. off Sabine Pass.
Geographical Range: North Carolina to Florida and the West Indies.
Maximum Size: 11 mm.
Eastern Pacific Analogue:

362. Ostrea spec. indet. A.

Finally some specimens of an "oyster" obtained in very deep water may be either displaced juvenile Crassostrea or may represent some other yet undetermined ostreid bivalve. Our material is insufficient for further discussion. The valves are all small and show faint to intense purple coloration.

Records H.M.N.S.: 3 lots, only dead valves.
Depth Range: 40-320 fms., all offshore Louisiana.

Genus Crassostrea Sacco, 1897.

Large oysters, in which the left valve (attached) exceeds the right valve in size. In Texas only one living species in the brackish water bays.

363. Crassostrea virginica (Gmelin, 1791).

Ostrea virginica Gmelin, Syst. Nat., p. 3336.

The commercial oyster is one of the most exhaustively studied of all mollusks. Apart from its value as food old oyster banks in which huge accumulations of shells occur are dredged for industrial purposes (source of lime and as road building material). The species is widespread in the low salinity bays of Texas and Louisiana and dead shells are often mixed with those of O. equestris. Dead and often large size oyster shells are commonly dredged to a depth of 43 fms. in the Gulf of Mexico; the 43 fms. level was the lowest level during the Pleistocene. Those oysters can reach the enormous size of over 9 inches (235 mm. measured on a broken specimen dredged offshore at a depth of 43 fms. (27°57' - 95°22')). This is an extremely badly corroded specimen, very fragile, having, as many of these shells, a slender, narrowly elongate shape, quite uncharacteristic of the present day oyster population. These elongate oysters are often dredged in water 20 fms. or so deep. On rare occasions oyster shells are encountered even deeper than this. These represent displaced shells. But even more surprising than the shape is the weight of some of these Pleistocene (?) valves. Especially at Sargent Beach enormous valves (length + 21 cm.) can be collected which are of immense thickness. One of these valves in the H.M.N.S. collection weighs just over 900 grams

and is already considerably corroded. It is not likely that during life the valve had this enormous weight.

In contrast to the other oyster species of the Texas Coast, *C. virginica* will form huge clumps of individuals all cemented together and living on the mudbottoms of the coastal bays in somewhat brackish water. Extensive oyster reefs create an environment favorable to many other mollusks and other marine organisms. For this reason the term "oyster bottom" is useful. In view of its widespread distribution in the coastal bays the number of live collected lots is surprisingly low.

Juvenile malformed oysters are often found alive on rocks of the jetties. They however, never reach maturity in that environment. Juvenile oysters display many different forms and further study might reveal the existence of definite ecological forms along our coastal area.

Previous records for the Texas faunal province are: 1, large quantities eaten in Galveston; 7, listed; 15, abundant along Texas Coast, remarks on conservation; 18, most common mollusk on Texas Coast; 21, listed; 56, listed; 58, Matagorda Bay, Matagorda Peninsula, Galveston, Aransas Bay; 61, Aransas Pass area; 62, Mustang Island, Corpus Christi Bay, Padre Island, Laguna Madre; 66, marine Pleistocene of Texas; 67, Port Isabel; 69, listed in appendix 8; 91, young oyster common on shoreward portions of jetties, no mature ones; 92, huge reefs in bays, Copano Bay, Lydia Ann Channel; 98, widespread in bays; 110, common in all Texas bays, pl. 8, fig. 11; 114, reefbuilder in Aransas Bay, San Antonio Bay, Copano Bay, pl. 56, fig. 4; 126, jetties and oyster reefs in bays in Carolinian Province; 134, common but not abundant in East Bay; 135, dead in Gulf, alive in bays; 136, East Texas beaches, offshore East Texas and on Heald Bank; 139, low salinity oyster reef, pl. 38, fig. 5; 145, several environments in Mississippi Delta, pl. 1, figs. 6A-B; 146, oyster reef, pl. 4, fig. 42; 155, Galveston Bay (pink oysters); 156, Stetson Bank; 160, Matagorda Bay, notes on depletion; 164, Rockport area, and Laguna Madre; 170, shallow shelf assemblage; 174, listed; 175, abundant in higher salinity intertributary bays, pl. 1, fig. 8; 185, Sabine Lake, Texas; 188, listed; 189, listed; 193, lower Laguna Madre; 206, beach records Tex. Conchol., Vol. II (9); 208, low salinity oyster reef; 225, Galveston; 253, old valves on reef off Padre Island (rare); 269, figured on p. 170.

Records H.M.N.S.: 74 lots of which 9 contain live collected material. Depth Range: 0-43 fms.; alive 0-1 fms. To be noted is one lot of 4 old valves from 95 fms. (probably displaced, off Louisiana) and one lot of small malformed live specimens from a depth of 10 fms. It is furthermore possible that one of the lots of *Ostrea spec. indet.* A from 320 fms. off Louisiana are displaced juveniles of this species. Geographical Range: Gulf of St. Lawrence to the Gulf of Mexico and the West Indies. (Abbott, 1974).

Maximum Size: 235 mm.

Eastern Pacific Analogue: ?

Genus Lopha Roding, 1798.

A genus of tropical oysters with pronounced radial plicae and fluted margins.

364. Lopha frons (Linne, 1758).

In the N.W. Gulf of Mexico only obtained from drowned coral reefs off Louisiana. Reports of this species in Texas are so far unconfirmed by trustworthy material. The specimens previously reported by me (Tex. Conchol., Vol. IX, p. 77) from the Flower Gardens, embedded almost completely in limestone, proved to be very large Plicatula. This species reaches off Louisiana, probably its most northwestern limit.

Previous records for the Texas faunal province are: 69, listed in appendix 8 (probably O. equestris); 101, general discussion (not reported for Texas); 701, Louisiana Coast; 132, reported from drilling platform off Louisiana Coast; 156, Stetson Bank; 192, plate 6, fig. 4A-b (Alacran Reef); 206, Tex. Conchol., Vol. IX, p. 77; 251, Yucatan shelf.

Records H.M.N.S.: A single lot of 3 old chalky valves from a drowned reef off Louisiana.

Depth Range: 215 feet, on algal reef.

Geographical Range: Florida, Louisiana and the West Indies to Brazil, Bermuda.

Maximum Size: 41 mm.

Eastern Pacific Analogue: ?

Remarks: In reference 179, Crassostrea rhizophorae (Guilding, 1828) is reported from offshore dredgings. It is possible that this Caribbean species once lived in the N.W. Gulf of Mexico during the Pleistocene.

FAMILY GRYPHAEIDAE Vyalov, 1936.

Only recently Stenzel recognized that one of the American oysters belongs in another family, largely composed of extinct species. There are a number of important anatomical details on which the separation is based. The shell is mainly different from other oysters in its vesicular structure (Subfamily Pycnodontinae Stenzel, 1959).

Genus Pycnodonte J. Fischer, 1835.

Fairly large irregular bivalves, often with sawtooth edges but sometimes fairly smooth. Often purplish in color. A single specimen, type of subgenus Hyothissa Stenzel, 1971, living on the offshore coral reefs and shale uplifts.

365. Pycnodonte (Hyothissa) hyotis (Linne, 1758).

Synonym: Ostrea thomasi McLean, 1941.

Abundant on the offshore coral reefs off Texas and locally almost reef forming on Miocene shale outcrops, where live specimens are usually densely covered by fire coral. One valve was pried from rocks of the Port Isabel jetties in 20 feet of water. As with all oysters this species is extremely variable in shape. Sometimes rather flat thin specimens are collected whose margins

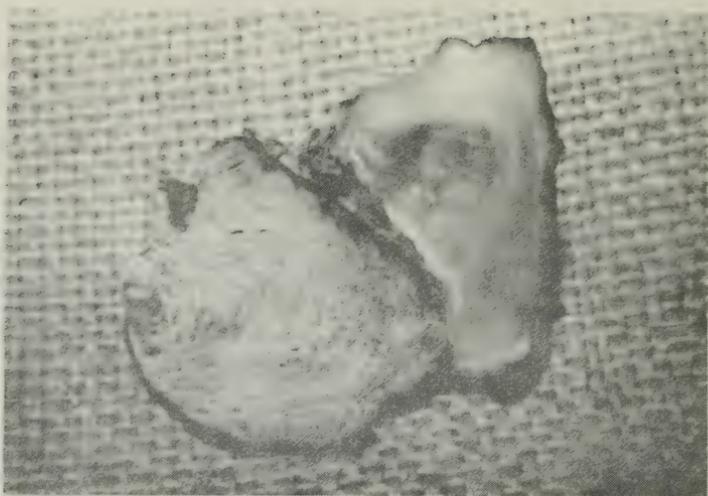


Fig. 2. Pycnodonte (Hyotissa) hyotis (Linne, 1758), a thin, purplish specimen taken by divers from Stetson Bank outcrop, 70-90 feet, 74 miles SSE of Galveston, Texas, showing the variation in the species. This one does not exhibit the saw-tooth margin. Measurements are 36 mm. length, 37 mm. width.

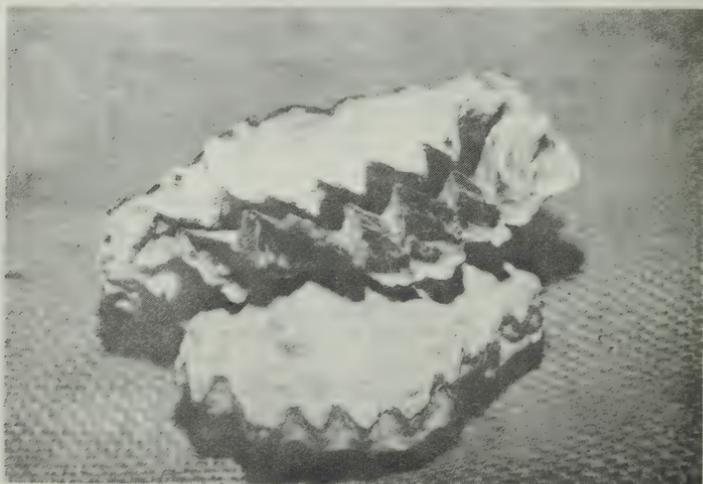


Fig. 3. Pycnodonte (Hyotissa) hyotis (Linne, 1758), typical saw-toothed specimen taken by divers at Stetson Bank, 70-90 feet, rock outcrop 74 miles SSE of Galveston, Texas, aboard USS Ault, August, 1971. Measurements are 94 mm. width, 93 mm. length.

Photos by Constance Boone

are almost smooth. On rock substrate heavy and large specimens develop whose margins are strongly "teethed" so that the shell resembles the much rarer Lopha frons. Other specimens resemble

Crassostrea in shape, but in all these forms usually the vesicular layer can be seen, usually at the margin of the shell. The mantle secretes a rather smooth and shiny layer of lime over this spongy material so that in old thick valves the vesicular material is sometimes difficult to find. On the outside it cannot be seen because almost always the shell is heavily crusted over by other organisms.

The color is variable. Usually there is on the outside after cleaning a purple coloration of streaks and blotches; the inside is usually a dirty light brown, but even pinks also occur. The muscle scar is not specially colored and near the umbo the valves carry a dense row of denticles. The species can form clumps of two or three specimens cemented together. A large thin reddish purple specimen was found clinging to a large Pinna carnea on the Flower Gardens, but the usual form in the N.W. Gulf of Mexico has strong zig-zag teeth along the margin.

Previous records for the Texas faunal province are: 147, offshore, dead on Baker Bank; 156, Stetson Bank; 175, calcareous banks assemblage, few on deeper banks, pl. 6, fig. 17; 206, Tex. Conchol., Vol. II (9).

Records H.M.N.S.: 9 lots of which 6 contain live collected material.

Depth Range: 9-28 fms. on rocks.

Geographical Range: Worldwide in the tropics.

Maximum Size: 94 mm. (alive).

Eastern Pacific Analogue: Only unconfirmed report from the Panamanian province.

366. Pycnodonte sp. indet. A.

I was extremely surprised to discover among our material a second species of this interesting genus. It is so completely different from the locally common P. hyotis that there can be little doubt that our only specimen must be accorded specific rank. The specimen was dead but fresh collected attached to the inside of a Spondylus valve and has the following important characters:

- 1) The attached valve is except close to the umbo much larger than the upper valve and exceeds the latter almost every where around its circumference by 5 mm. In this margin the spongy nature of the shell material can easily be discerned.
- 2) The margin is completely flat, and does not bear any of the fluted teeth common for P. hyotis.
- 3) There is no trace of any coloration.
- 4) The upper valve is practically smooth with regularly spaced closed concentric growth lines. The circumference of the valve is almost circular but somewhat flattened near the umbo which is very little prominent. Overall the entire shell is very flat and the animal (weak part) is a thin disk.

Until more material is collected it is impossible to add more particulars to the present report.

Previous records for the Texas faunal province are: None.

Records H.M.N.S.: A single lot of a dead, but fresh collected specimen from Stetson Bank, in water between 70-90 feet depth.

Maximum Size: 51 mm.

Eastern Pacific Analogue: None.

To be continued

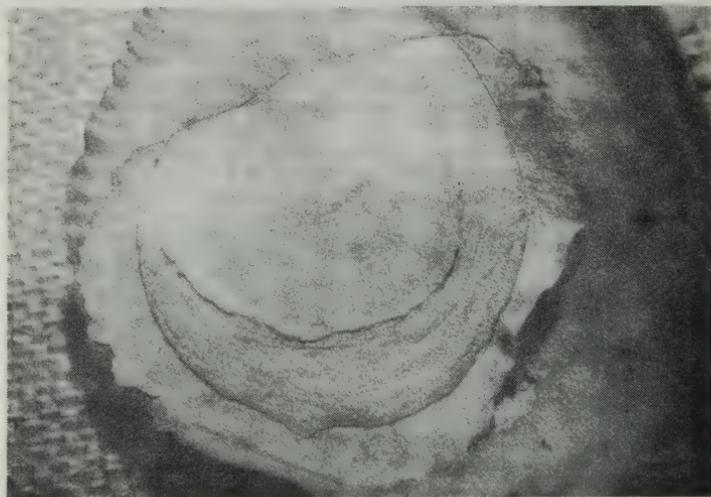


Fig. 4. Pycnodonte sp. indet. A, an interesting specimen found inside a Spondylus valve and thought completely different from the locally common P. hyotis. Collected by divers at Stetson Bank in 70-90 feet. Locality is a rock outcrop 74 miles SSE of Galveston, Texas. Measurements are 44 mm. length, 50 mm. width.

Photo by Constance Boone

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The Society holds regular meetings the fourth Wednesdays of the following months: August, September, October, January, February, March, April and May. The meeting is held the third Wednesday in November. Meetings are held at the Houston Museum of Natural Science, Caroline Street in Hermann Park, beginning at 7:30 p.m.

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RATES AND DUES

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The TEXAS CONCHOLOGIST accepts contributions for publication from amateurs, students, and professionals, subject to approval by the Editor. Manuscripts should be typed, double spaced and should be in the hands of the Editor the first day of the month preceding publication dates. Photos accompanying such material are welcomed.

SUMMER COURSE ON COLLECTING SEASHELLS ANNOUNCED

Dr. T.E. Pulley, director of the Houston Museum of Natural Science, will teach a course entitled Collecting Seashells July 10 thru July 31. There will be four Thursday night classes and three field trips on week ends. This course is sponsored by the University of Houston Continuing Education Center, the Houston Museum of Natural Science and the Houston Conchology Society, Inc.

This course is planned for children as well as adults. For several years Dr. Pulley has conducted a course on some phase of marine biology in the summer. He found that adults wanted to bring their children on the field trips and also some wanted their children to attend the classes. Children must be registered in the class to go on field trips, but their attendance in the lecture is optional. The fee is \$35.00. There will be separate nominal fees per person for the field trips attended.

The three field trips are as follows: a one day trip on Saturday, July 19, from Bolivar to Sabine; a two-day trip on Galveston Island, July 12 and 13, and a three day trip to Port Aransas, July 25, 26, and 27.

Lectures are outlined as follows:

- Lecture 1 A brief history of shell collectors and shell collecting. How to make a shell collection today.
- Lecture 2 The anatomy and life histories of mollusks. Classification.
- Lecture 3 Zoogeography and the distribution of mollusks.
- Lecture 4 Mollusks for food, industry, ornament and art.

Call 749 7666 and ask to be sent a catalog from the UH Continuing Education Center which will contain the information you need to register for this class. You may also ask for information concerning this class on collecting seashells at the Houston Museum of Natural Science. Members of the Houston Conchology Society will receive information by mail on this course sometime this spring.

WARNING!

By Lucy Clampit

If you plan a shell collecting trip to a foreign country and want to SCUBA dive, take your lessons and get your certification in the United States.

Last July, Jerry and I went to Cozumel, Mexico. One day when we were in the hotel lobby, we were approached by a woman who was interested in our shell shirts. After a brief conversation, we discovered that she is a SCUBA diver and she takes people on diving trips to collect shells. That sounded great! When she found out that we didn't dive, she offered to teach us. Fortunately, Jerry had the good sense to say no, even though he had been considering taking lessons for some time.

During the fall, he did take classes and received his certification through a local diving service. Two nights a week for six weeks they practiced and studied what to do in emergencies.

In January, during a trip to Cozumel, a group from the diving service encountered a real emergency. They rescued two noncertified divers (and their guide) that were taking a 'resort course' from the same hotel where we had stayed. The "divers" were in a state of panic, did not have the proper equipment, and didn't know how to use what they had. The Houston group then had to search for the boat of these "divers".

The time and expense involved in getting proper instruction and certification is certainly worthwhile when it could save your life.

Headline in the March 7th issue of ISLAND REPORTER: "BAD WEATHER BRINGS GOOD NEWS TO SHELLERS". There have been many rumors of scant shelling on Sanibel and Captiva Islands. Also, of curbs on collecting. Here are my impressions:

The collecting is just about like it's always been; good on the Gulf beaches after either high Northwest winds, after very heavy rains usually accompanied by winds, or after a drop of 15 or more degrees in temperature. If you're there during a long spell of quiet, mild weather, the beach doesn't offer much in the way of live specimens except the various seasonal "migrations" like the Murex pomum coming inshore to breed, the Strombus alatus likewise. Both usually from April through June. The Gulf is quite shallow for miles off the beaches - a perfect environment for most mollusks. It takes abrupt changes in weather to loosen their holds on the bottom and the tides to bring them in. The Bay shelling is always good over any period of a week or two - but you might go to the flats on a day when the wind is blowing on-shore, and they'll be down in the sand and mud. With a wind shift, you may find the flat literally covered with Melongena corona, Fasciolaria hunteri or F. tulipa. More or less unpredictably, the Pleuroploca gigantea from the deeper water all seem to decide at once to come in for a meal of Melongenas! So, it's really a matter of luck whether on the beach or in the Bay.

Inevitably, the visitor who "hit the jackpot" on his last Sanibel trip, may almost draw a blank on his next expedition; so of course he blames it on "overcollecting". Equally sure is that every self-proclaimed conservationist will pick up the cry with letters to the Editor and loud cries for restrictions at City Council's meetings. For instance, we have a well-known and highly respected herpetologist who obviously knows nothing about shells but assumes he's an expert; and there's a dozen more like him, all quite vocal. The upshot of this is that Council has NOT passed any ordinance putting any kind of legal limit on shelling, but has "recommended" that collectors limit themselves to two specimens of any species. (How do you make clam broth out of two coquinas?) They are not there usually in the thousands, but in the billions! Naturally, if you're lucky enough to find a little colony of one of the cones, you just don't clean them out! Any good collector (and it takes a good one to find the cones) knows what to take and what to leave without calling attention to it. And those last words are the secret of "how it is" now on Sanibel...just go about your collecting business quietly, attract as little attention as you can, DON'T BRAG to ANYONE, and if the weather frowns on the golfers and tennis-players, it's smiling on you! Just don't expect to come back with a bull whelk every time you go out. The really big ones were always hard to come by. We'll be at our home there from April 6 through the Summer and Fall. Give us a buzz (EARLY or LATE in the day) if you come over.

The plethora of shell stamps now available provides rich and rewarding hunting grounds for the philatelic conchologist. A panoramic overview of the current situation has been presented recently by Tom Rice in a monumental checklist ("A Checklist of Mollusks on Postage Stamps, Revised") in the Winter Issue 1979-80 (pages 213 to 236 inclusive of OF SEA AND SHORE). The various articles and booklets previously published have been combined, corrected and updated.

This checklist should serve as THE definitive reference source and furnish useful guidelines for the hobbyist interested in this fascinating subspecialty, both from conchological and philatelic viewpoints.

In his publication, Tom Rice has summarized the statistics that indicate the impressive scope and magnitude of the philatelic items available to the conchologist. His checklist includes 2040 stamps of which 728 feature mollusks as the central design. These stamps were issued by 160 agencies.

Counting merely the aggregate number of philatelic items issued, Cochin, Travencore and Travencore/Cochin head the tabulations with 360 stamps or 18% of the entire total. In the Scott's Standard Postage Stamp Catalogue all three agencies are listed under India (in the volume designated for the British Commonwealth of Nations). Cochin and Travencore were separate Feudatory States which merged to become the United States of Travencore-Cochin in 1949. The mollusk design consists of stylized versions of the left-handed Sacred Chank Shell (Turbinella pyrum) which appeared on the very first stamps issued by each of the three political entities. Although the design is categorized as a "minor" feature (by Rice) of all the stamps, arguments otherwise can be mustered. The shell is a major item on the official seal of the States. Although stylized, the species is clearly recognizable and the obvious intent is to emphasize and feature the shell. Finally, the shell occupies the central and prominent (area-wise) portion of many stamps, particularly on those stamps listed under Travencore and Travencore-Cochin. (Incidentally, those with more than casual interest in conchological philately might take note that sheets of stamps issued in 1943 and later by Cochin are water-marked by a design that includes the stylized chank shell).

Following the States in India, the countries credited with the largest numbers of mollusk stamps include Bahamas (111), Umm Al Qiwayn (68), Papua New Guinea (65), Uganda (54), Somali Coast (46), Barbados (46) and Cook Islands (42). It is also interesting to note the paucity of mollusk stamps from the countries on the continents of North and South America: USA (0), Canada (2), Mexico (1), Brazil (5), Chile (1), Ecuador (1), Paraguay (1), and Uruguay (2). This situation should change. Already Belize (in Central America) has announced that in January, 1980, a new set of definitive stamps will feature shells of Belize. The series will include 17 stamps and two souvenir sheets.

As to the kinds of mollusks that are depicted on the stamps, the gastropods as expected are the most numerous. A good representation of bivalves, however, is noted. About 35 issues showing cephalopods can be counted and at least 10 species of nudibranchs have been philatelically immortalized. Philatelic rarities are the chitons and the tusk shells. (I have seen only one issue showing a chiton, a souvenir sheet from Grenada on which a large and gorgeously colored chiton is pictured on the marginal portion of the souvenir sheet.)

In respect to the molluscan families, the cones and the cowries appear most frequently on the stamps. The strombuses come in next, outnumbering the Murex stamps. (These counts, as well as others to be mentioned subsequently, concern only those stamps on which the mollusk is the central feature).

Bits of unusual information are tucked away here and there among the mass of material that Tom Rice has compiled. For example, under Uganda (page 234), it is stated that the value on certain early stamps (54 stamps) from that country are designated in "cowries" as the unit of currency. Scott's Standard Postage Stamp Catalogue provides additional information. These stamps were "produced" on a typewriter in 1895 and 1896 by Rev. Ernest Millar of the Church Missionary Society. They were designated in various "c" (cowry) values from 5c to 100c. Fifty "cowries" were considered to be equal to 4 pence. The Scott Catalogue values for these stamps ranged from \$175 to \$3000 in 1979.

Another set of stamps with both numismatic and conchological significance was issued recently (1979) by Papua New Guinea. The set is based on the theme of "traditional currency" and includes 4 values depicting respectively the shell disks on a sash, tusk shell ornament, shell arm band and shell necklace. (The important theme of these issues is not indicated on the checklist by Rice).

Somewhat detailed information regarding this set from Papua New Guinea was published in the May 21, 1979 issue of Linn's Stamp News. Apparently, the items depicted on the stamps served as "currency" in the system of "kula trade" which is defined as "certain ceremonial exchanges made to express social and economic relationships between families, individuals or class" among natives of the small islands off the southeastern coast of Papua. Red shell necklaces (made from Spondylus valves) and white arm bands (cut from Conus millepunctatus) symbolized wealth and prestige.

The 7-toea stamp features the Katudababila (waist belt). The belt is constructed of rows of red shell disks sewn onto bark cloth. The Katudababila was usually worn around the neck. The 15-toea stamp depicts the Doga or Dogadoga (chest ornament). Pictured on the 25-toea stamp is the Mwali (arm shell). The arm bands are made from Conus millepunctatus, Ovula ovum shells are attached to the cone shell band with a "rope and red cloth". Black shells ("Botabota") are placed between the Ovula ovum shells. The "Soulava" (necklace) shown on the 35-toea stamp, is one of the principal objects of exchange. The Soulava is described as a "broken out part of a conch shell", apparently a Strombus. Strings of small disks of red Spondylus shells are attached to the conch, one having an Ovula sewed to it. When worn, the conch and other shells hang on the chest of the wearer.

One example of how shell currencies function in native societies is described by Leopold Pospisil in a booklet entitled "The Kapauka Papuans of West New Guinea" (published by Holt, Rinehart & Winston in 1963). The Kapauku population inhabits the central highlands and lives away from the seashore. Cowrie shell money is used in several denominations. The cheapest is called "kawane". (Unfortunately the shells are not identified and no pictures are shown.) Five such shells equal one "tuanike megine". The most frequently used cowry for money is called "bomoje" which may be Cypraea moneta. The ones with yellowish white color ("dege bomoje") is worth about 15 kawane and the ones with darker bluish or white color is worth 20 kawane.

A shell called "epa mege" is worth two bomoje while another shell called "bodiya" may be worth as much as 10 or 12 bomoje. Money necklaces ("dedege") made from Nassarius shells (and the length of a human arm) are worth 1 bomoje. A bomoje is considered to have a value of 30 glass beads (in 1955).

Now, the relative values of the shells may be better surmised in terms of the native economy. A crop growing on 900 square meters of land is equated to 5 bomoje. Lease of the same land costs 1 bomoje. A one pound piece of pork brings 1 bomoje. A steel machete is worth 3 bomoje and a steel axe 5 bomoje. A 90 kilogram pig costs 20 bomoje. Seven large marsupials can be obtained for 2 bomoje and 1 bomoje will buy 30 rats. A major exchange of goods and "money" occurs at weddings. "An average bride price consists of approximately 120 old Kapauku cowries, 120 introduced cowries, 300 glass trade beads, 3 dedege shell necklaces and 1 large male pig".

Business speculation with shells apparently is not absent in this society. "Wote" or Melo hunteri (bailer shell) is said to fluctuate in value (by as much as 200%) depending on supply and demand.

A bibliographic section (showing published references on the subject) would have enhanced greatly the checklist by Tom Rice. However, the omission of such information is understandable. Primarily, data sources of that type are practically non-existent. And secondly, they would serve no useful purpose if they simply duplicated the listings, except to improve the accuracy and to expand the scope of the lists. One the other hand the few available historical references do contain discussions that provide depth to various considerations above and beyond mere identification of the seashells shown on the stamps. Beginning in October 1966 (Vol. III, No. 3) THE TEXAS CONCHOLOGIST has published over the years a series of comments regarding the hobby of conchological philately. Included in those early publications were some references to even earlier publications on the subject, among which were:

1. "Shell Collecting - Philatelic Style" by Elmer J. Binker, Jr. in SHELLS AND THEIR NEIGHBORS, No. 23, June, 1964.
2. "Philatelic Conchology" by Tom Rice in BETWEEN THE TIDES (Gulf Coast Shell Club), Feb., 1965.
3. "Philatelic Findings in the Phylum Mollusca" by John F. D'Aiuto in TOPICAL TIME (American Topical Association), Vol. 16, No. 6, Nov., 1965, pp. 20-21.
4. "Le Faune", CLEMENT BRUN CATALOGUE de TIMBRE-POSTE.

The notable connotation of this literature search is the documentation of how long Tom Rice has been interested in the subject of seashells on stamps.

(TO BE CONTINUED)

Puerto Penasco lies in the Sonora Desert, almost at the tip of the Gulf of California. Some 20,000 people live there, supplied with drinking water from a desalinization plant, many of them employed at the government-built seafood processing plant or in supporting small industries. The few main streets are paved, but most of the secondary ones are just sand. The harbor, where hundreds of shrimp boats and other fishing boats unload their cargoes, is being deepened and enlarged to accomodate more and larger boats. The few hotels are what we in the U.S. would consider third or fourth rate.

About seven miles from Puerto Penasco is Cholla or La Cholla, which is a small fishing village and also weekend retreat for affluent Arizonians. Even for the latter, living is fairly primitive--there is no electricity in the town except for a very few who have their own generators. All drinking water is bottled and of course warm, there being no refrigeration. But the village offers a relaxed way of life and the Gulf of California offers superb fishing close at hand.

Cholla Bay, on the north side, attracts shell collectors because of its unusual tides. During the spring and fall months, there is a tidal range of as much as 22 feet at the time of the full moon; the very low tides expose the entire bay. It was this prospect that drew four of us to the area the day after Labor Day last year.

Our planning began in March. Before we could set a date, we had to obtain the tide book that covers Puerto Penasco from the University of Arizona. Both September and October had excellent minus tides but September fit our schedules better and the low tides in October came too early in the morning. We gambled that the weather would have cooled off somewhat in September although what actually happened was a heat wave that almost did me in.

Mary Ann Curtis, Helen Cornellisson and I flew to Phoenix where we picked up a rental car we had reserved and then bought bulky items such as an ice chest, bottled water, and lots of canned drinks. When Bill Keeler's plane landed from California, we were able to leave immediately for Mexico. It takes 5 to 6 hours to reach Puerto Penasco, going almost due south. We stopped once to get special insurance for the car, and expected to get our entry permits at the Mexican border. Instead we were waved through and blithely drove the final 60 miles to our destination.

Our hotel, the Playa Hermosa, started out, as its name implies, on the beach but due to the extensive harbor dredging, many years of fill now separate it from the beach. We had adjoining rooms in a unit of four and they were barely liveable. The furniture was the bare minimum. They did have bathrooms but Bill's sink stopped up almost at once and never did work the rest of the time. The evening after we arrived, the desalinization plant broke down and for 20 hours there was no water at all in our hotel nor indeed in the whole town. I leave to your imagination the combined aroma of shells being cleaned and unflushed toilets in 110 degree heat! The rooms had window cooling units which were barely able to modify the heat, but when the electricity went off for variable periods every night, we almost suffocated. Despite these drawbacks, we managed very well, fortified with cold beer regularly. (The best way to get ice for the ice chest was to buy beer and ice.)

We drove the sand road to Cholla Bay that first evening to reconnoiter and promptly took the wrong fork in the road as we started back in the growing dark. Fortunately Bill kept his cool and took off across the sand until he

came to the correct road. I had mental images of our being stranded all night in the desert wilderness. The evening ended with pleasure and merriment at La Cita, a really good restaurant that served the biggest, most delicious shrimp imaginable. Here we met some friendly Phoenix men who invited us to stop by their retreat in Cholla when we had time.

In order to be on the sand flats by 6:30, we rose at 5, ate our granola, fruit and coffee, packed our gear, and drove to Cholla Bay. (I had brought a hot pot for coffee and Mary Ann had carried a large electric sauce pan for boiling shells and both proved invaluable.) The minus 4.4 foot low tide was about 7, so we wasted no time in heading out across the sand and mud flats of the bay, guided by a most helpful map supplied by the Southwestern Malacological Society of Phoenix/Tempe. The best collecting area is 1½ to 2 miles diagonally across the bay at the far tide line. Bill and I couldn't resist stopping to pick up small gastropods that were making trails in the sand and then live sand dollars while Mary Ann and Helen went resolutely on. When we caught up with them, they had become 5; they had joined 3 women who were members of the SW Malacological Society. All of us collected for about an hour on the sand and rubble of the low tide area. Since it is seldom out of water, it had a fine assortment of shells. These included: Murex nigritus, Turritella gonostoma, Turritella leucostoma, pen shells (mine broke so I had none to identify) and at least two kinds of sand collars, the round like ours and the arrowhead. As the tide began returning, we worked our way back ahead of it, picking up many shells: Oliva incrassata, Oliva spicata, Olivella dama, immature Strombus gracilior and Melongena patula, Chione compta and californiensis, Natica chemnitzii, Polinices helioides, Nassarius iodes and tiarula, Solenosteira gatesi, Columbella strombiformis, and various others including a pretty Terebra I have not identified.

The three Phoenix women were renting a cottage at the edge of the bay, near where we parked our car, and invited us to stop for water and a rest. How delicious that lukewarm water tasted - we drank glass after glass, not until then realizing how dehydrated we had become. As we chatted, the subject of the border came up and when we said we didn't have "visas", all three of them reacted with horror. It seems the official who waved us through was in reality telling us to park the car and go into the building to fill out our entry forms. We felt stupid and rather uneasy at the potential problem of going back through the border where the Mexicans pick up the visas and perhaps being delayed several hours.

On a more positive note, they told us about Pelican Point, at the western tip of Cholla, where there is good rock shelling at low tide. Two of them went with us to show us, but the tide was already too high for good collecting. Instead we stopped for a cold beer at a small cantina and then returned to the cottage. By then we were advised it was dangerous to drive back to Puerto Penasco because the road goes through a salt marsh which becomes a lagoon when the tide is especially high. So our friends made sandwiches for all of us, we had a swim, where a few hours before we had walked over sand flats, and rinsed off our shells, until it was safe to return to Puerto Penasco.



Low tide in Cholla Bay, near Penasco, Mexico. Two miles out to water's edge.



Swimming and snorkeling at high tide at same area as in above picture, Cholla Bay, Mexico.

Taking turns, we boiled our shells in Mary Ann's sauce pan and sat on the floor removing bodies for the rest of the afternoon. We walked down the street to a nearby restaurant but service was slow and the food was not as good as at La Cita. It was soon after that the water in the rooms vanished (we were told it would be back on shortly!). We were exhausted anyway, and went to bed early. During the night, the rooms began to shake and doors rattled--a violent wind was whipping through, reminding me of the hot Santa

Ana winds that blow off the desert in southern California. I looked out the window at one point and was surprised to see the moon was not full. Only later I realized I had seen the end of an eclipse. A strange night.

We again shelled Cholla Bay the next day, when the tide should have been even lower, -5.3 feet, but actually was not because the strong wind was driving the water back into that part of the bay. Aside from a colony of juvenile cones, probably Conus perplexus, we collected much the same shells as the day before. We had considered trying to drive to Black Mountain, a landmark about 5 miles from Cholla to the north, where they were supposed to be some different species, but were strongly discouraged by one of the Phoenix women because of the danger of being bogged down in the treacherous sand of the salt marshes. We longed for a 4-wheel drive vehicle and were particularly rueful when we saw that the same wind that drove water into the far side of Cholla Bay had exposed a sand bar out from Black Mountain into the Gulf that must have been several miles long.

After a brief visit with the friends we had met in the restaurant--their house sits high on a cliff above the water with a spectacular view of the Gulf--we returned to our hotel. There was still no running water, so we cleaned shells on the walkway outside our rooms, using sea water Mary Ann and Helen lugged up from the beach. We rejoiced when a water truck delivered water to our hotel about 4; everyone had a quick shower before dinner. That evening we went night shelling on the beach down from our hotel. A live Agaronia testacea apiece was our reward, along with more Olivellas.

On the third morning, we went directly to Pelican Point, where we had several hours collecting rock shells. Here I found my first live Lima, beautiful both in body and shell. Some of our finds were: Nerita scabricosta and funiculata, Arca pacifica and mutabilis, Barbatia reeveana, Cardita affinis, Turbo fluctuosus, Pteria sterna, Pinna rugosa, and various limpets, cup-and-saucers, jewel boxes and thorny oysters, and at least 3 kinds of Tegula. The rest of the day we spent cleaning our shells and then packing them, getting ready for an early start next day.

After much thought, our Phoenix shell club friends provided the solution to our getting through the Mexican check point. The border at Sonoita is closed from midnight to 8 a.m., so of course the check point is not manned then either. So we rose at 5 again and drove through the check point just before 7:30, then waited by the U.S. border station until it opened. We were home free and we all breathed a sigh of relief. The extra time derived from our early start gave us a chance to take a scenic drive through Organ Pipe National Monument in Arizona.

We were pleased with our 80-some species of shells, but want to go back again to shell the Black Mountain area and also an area between Cholla and Puerto Penasco where Strombus galeatus are sometimes found when the wind and tides are right. If you don't mind fairly primitive accommodations and are able to walk the couple of miles each way to the low tide line in Cholla Bay, you will find it an interesting and worthwhile place to shell. I would suggest April or May, before the heat sets in. Take lots of bottled water, soft drinks and beer--and do get your visas at the border! You'll have a marvelous time--we did.



Shell collecting, Rocky Point, Cholla Bay, Mexico.

Photos by Helen Cornellison

HAWAIIAN MARINE SHELLS. REEF AND SHORE FAUNA OF HAWAII: SECTION 4, MOLLUSCA, by E. Alison Kay. Bernice P. Bishop Special Publication 64 (4), 653 pages, \$30, Honolulu, Hawaii, Bishop Museum Press, 1979.

Anyone who collects Hawaiian shells must have this book. It is a 653-page treatise with well-researched data, updated and scientifically presented. Like Abbott's book on American Seashells, this volume is a textbook and a basic reference work. A detailed technical review of the book by Spencer W. Tinker has already appeared in the February 1980 issue of HAWAIIAN SHELL NEWS.

This volume represents Section 4 of a projected series of six volumes covering reef and shore fauna of Hawaii. When completed, the set will be an expansion of the subject matter presented originally in one volume by Charles H. Edmondson. His book was published first in 1933 and was revised (again as a one-volume work) in 1944. In the 1944 edition (a book of 381 pages) the entire discussion of the Phylum Mollusca constituted 100 pages.

One of the most impressive features of the new book is the inclusion of 41 pages of basic references updated through 1978. Anyone who desires more than repetitions of shell descriptions will find here carefully selected bibliographic sources that are seldom seen in most publications. This alone is worth more than the price of the volume (which incidentally seems quite reasonable considering the size and quality of the printing). Tinker, in his review hints that this edition may have had limited printing and that the book may not be reprinted. It is recommended that the book be purchased now while it is available.

The introductory section constitutes 31 pages and provides background information regarding such subjects as a general account of the Hawaiian Islands and its surrounding waters, comments about the composition and derivation of the Hawaiian molluscan fauna, mention of the economic aspects of marine mollusks and a historical resume of expeditions, explorations and naturalists associated with Hawaiian Islands.

The Phylum Mollusca is systematically discussed in the subsequent chapters. A complete designation for each shell species is given with scientific names and identification of the author and the date. Synonymies are listed but common names are not used. The reference source is listed in the bibliography. The shell itself is described in a well-organized and uniform manner starting with size and general description. Then comes scientific aspects such as (for the gastropods) spire, aperture, sculpture, color, and the animal. Additional interesting and informative facts are then given with comments regarding habitat and distribution.

Color photographs are used sparingly but selectively and informatively. The nine pages of color plates include the following: endemic Hawaiian cowries; types of shoreline features of Hawaiian Islands; life styles of some prosobranchs; octopus; dorids (5 species); nudibranchs (6 species); aspects of reproduction in the prosobranchs; sarcoglossan (6 species); bivalve life styles (6 species). With few exceptions, the shells are shown as black and white pictures (more than 185 pages of figures) which are more than adequate. Readily available booklets and the many good books on Indo-Pacific mollusks can provide additional pictorial information if needed.

This is a highly satisfying publication. Be sure to obtain it.

(This book has been purchased for our library).

SEARCH AND SEIZURE

By Constance E. Boone

This winter's shelling season has been billed by many knowledgeable shellers in our area as the worst of many years.

The reasons are not clear. Those of us who have shelled the Texas coast for many years know that we have had cycles of good years and bad years usually due to weather factors. We have been wondering if the Mexican oil spill and the wreck of the oil tanker off Galveston have made our shelling poor by killing off the mollusks in the shallow beach areas. Some of us are aware certainly that we haven't had the extended low tide periods of the most recent winters as the recent winter has not been as cold with the severe northers of other years.

A recent study of the effects of the Mexican oil spill by scientists meeting in Corpus Christi revealed that huge oil mats as big as football fields have settled in the surf areas off Port Aransas to Port Isabel. These mats have been covered with sand but are thick and solid at present. Eventually they will dissolve, but they may account for the lack of live mollusks this winter season.

The thought has been promoted that we should have seen many thousands of dead, oil-covered mollusks on the beaches if the oil spills had something to do with killing off the mollusks. We have seen oil on the shells but big mounds of dead shells have not appeared at Galveston. Perhaps such shells may be stuck in the tarry mats we read about.

Mildred Tate has reported that thousands of dead shells are beaching at the "cliff" area just south of the jetties at Quintana Beach below Freeport, Texas.

What we have noticed and what others have noticed in particular is the lack of our pretty Oliva sayana this winter. We have been spoiled by knowing that we could hit the beaches in the winter months on even a fairly low tide period and find olives trailing in the sand. Those of us who grew accustomed to getting the gorgeous, huge, shiny specimens from the bay sand bars are distressed that we couldn't find them there this year when we were able to get out on the sand bars.

Around February 10, 1980, the tides were sufficiently low to check out the beaches at Galveston Island. Thousands of Dosinias and species of arks were at Jamaica and San Luis Pass, many alive. Mixed in with the worm goop and debris were other small species, including many, many Mulinia lateralis, Tellina iris, and Abra aequalis. I was able to collect two nice Agriopoma texasiana and several Diplodontas. Pale Tellina alternata were washing in alive.

On the bay side there were a few Sinum alive, some Polinices were laying egg collars. Few whelks were found.

About that same time the Brazosport shell clubbers reported bonanzas of the above shells on beaches at Surfside and at Quintana. Mildred Tate reports that many deep pink Tellina alternata tayloriana washed up dead at Surfside. She reports that the sand bars on the Freeport side of the San Luis Pass bridge yielded Ensis, Pandoras, Solen, and Tellins. The shellers in the Freeport area have not found many olives this winter either.

Having tried to collect certain desired species several times in February with no luck, I was determined to hit the beaches the morning the temperature fell to the twenties on Sunday, March 2, 1980. The north wind had been howling strong all the day before, and I knew that if I ever was to have the chance to check out the sand bars at San Luis Pass this was the time to try to get there. The tide was two feet below mean level and the wind factor was zero, according to news reports.

I was able to walk out and wade across to one big sand bar. We have been commenting on the shifting sand bars at the Pass and shellers have been saying that the changes have made it hard to get to the bars. I had tried several times before this year but turned back when the water got dangerously close to my wader waistline. I have no desire to sink in the bay waters with waders filled up with salt water I was stupid enough to wade deeply enough into!

There has been some dredging to keep the fish camp's boat slip clear of sand and this has deposited some soft mud into the bay waters.

I was not game enough to wade through ruffled waters to get to the sand bars extending northwest up the bay, the bars we have been collecting the last few winters.

However, the sand bar I did get to and the sand flats did have familiar shells on them. I was able to get Terebras, plenty of Mercenarias, Busycons, Ensis, Solen, small Tellins, Polinices, and Nassarius. I did not collect Epitoniums, nor was I lucky enough to find my favorite shell, Tellidora cristata.

Mildred has reported that that very day she hated to get out of bed but told herself to get up and bundle up and get to the Pass on the Freeport side to see what she could see. She is excited over her one inch plus Lucina pectinata she collected alive. This is a species we find rather rarely alive in our area, usually only by digging on bay sandy areas near oyster reefs.

Reports have come in also that hundreds of Epitoniums were taken alive along Surfside for about a week around March 1, in patchy areas of worm goop.

Linda Serrill reports that the beaches at Matagorda have not been loaded with shells this winter either. She is excited over receiving a salt water aquarium from her husband for Christmas and is interested in corresponding with those of you who have maintained salt water aquariums. Her letter expressed her pleasure in watching a live cockle and having Polinices live and learning what to feed them.

This brings the chance to say that even maintaining a small bowl of sea water with minute mollusks in it can bring intense pleasure. On February 10th I brought home a bucketfull of nice, empty Dosinias because I know that the club can always use these eventually to give to school children or to use in educational projects. These shells were filled often with worm goop because they were stranded in this debris at surf's edge. I decided to look at a bit of the goop under the microscope. There were tiny live Epitoniums in the mess but also some live-looking Cyclostremella humilis and one live-looking Odostomia gibbosa. I popped these tiny shells into a small glass bowl with a little sea water I had brought home, and at the time of this writing (March 9) the little animals are still living. I did bring back some

salt water to add to the bowl from a later February trip. Also in this bowl is my second Elysia from Texas which I took in the Pass bay area. I have enjoyed seeing this little animal again (see Texas Conchologist, Vol. XII, #3, March, 1976, pgs. 59,60). I brought in some green algae for it a week later but it has not seemed very interested in the strand I provided. Maybe it is not the right kind; I do not know.

There are a few other collecting notes to share:

Lynn Blair is very thrilled with her nice specimen of Amaea mitchelli she collected at Sargent's Beach in January. This beach yielded many specimens of this rare Epitonium in the past but not many have been found there recently. The beach there is almost gone from erosion.

The Sappingtons came home from Celestun, Mexico (located on the Gulf of Mexico side of the Yucatan Peninsula) in January with bags of beach Busycons which they shared with the Houston Museum of Natural Science for Dr. T.E. Pulley's continuing study of Busycons. They found many other beach shells at Celestun also.

Lucy Clampit found a corded Oliva sayana at San Luis Pass, Galveston, this winter. Since she studies Oliva, this kind of freak or unusual shell which dealers always give increased value to on their lists really was found by the right person, don't you think?

Ninety-two species of shells from the Pacific coast of Baja have been added to the Houston Museum's collection of mollusks, brought home by Dr. Pulley, director of the Museum, from his trip to Baja California as part of the University of Houston and Museum Continuing Education series of trips, this one to see the gray whales in February, 1980.

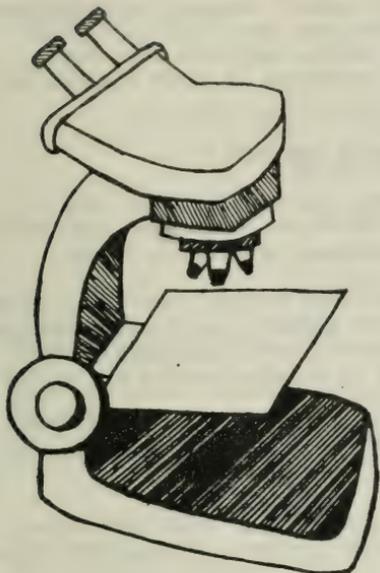
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'SCOPING THE MEMBERS

By Tina Petway

Some years ago a little girl named Barbara lived in Illinois. She had a friend whose father was a sea captain. This sea captain had a cabinet which had many beautiful and fascinating shells in it. The little girl loved to go visit her friend so she could see the shells. The little girl never forgot those beautiful shells in the cabinet.

Sounds like the beginning of a novel doesn't it? But it is not. Barbara Hudson still remembers those shells today.

Barbara and Jim Hudson have been familiar faces of our club for 10 years now and both of them are active collectors. They met at Western Illinois University where Jim was the lab assistant in her freshman Chemistry class. (The "chemistry" must have been right.) They were married in 1944 after Jim graduated. He later went to work for General Mills and has been with them now for 31 years. Barbara and Jim have lived all over the country as the company moved Jim and he climbed the business ladder. On some of Jim's business trips to Florida he would bring Barbara and their two children a few shells. Then 13 years ago they moved here to Houston. In 1970 Barbara heard about a shell show at Sharpstown Mall, and she and Jim found out about our shell club. They promptly joined our happy group.

Soon they were bitten by the "Florida Bug"; the only cure for it is a trip to that sunny, shelly climate. So off they went with some other fairly new shellers, Gladys and Dave Sheridan, our members, too. While there, the four of them played bridge in their spare time (spare time in Florida?) and kept a running total on the game. They agreed that the 3 losers had to buy the winner a *Voluta junonia*. (Why didn't I ever think of that!). They also had the good fortune to meet Admiral and Mrs. Cardeza while they were there (see *Texas Conchologist*, Volume XIV, No. 3, page 62, "Meet Me Under the Microscope"). Carlos Cardeza took them shelling and taught them what to look for and how to collect. The next year Barbara and Jim went back to Florida for more shelling. Then they took a Caribbean cruise for their 30th anniversary. Every port Barbara and Jim rushed to a beach.

In 1977 they were part of a group of our club members who went on a shelling trip to Fiji led by another of our members, the late Ruth Fair (see Texas Conchologist, Vol. XIV, No. 2, page 37). It was on that trip that Jim acquired the nickname "The Cypraea Kid". He collected 17 tiger cowries and bought 30 more while there!

Barbara has been collecting colorful land snails for some years.

They have also shelled in St. Martin, St. Croix and then Barbados with Margie and Wilbur Woods and Carol and Eugene Courtade. They have also shelled at San Carlos Bay in Guaymas, Mexico, with Constance and Hollis Boone.

In June of 1979 Barbara joined Carol Courtade, Ruth Goodson (see Texas Conchologist, Vol. XIV, No. 2, page 36) and Margaret Baldwin (see Texas Conchologist, Vol. XV, No. 3, page 68) for shelling at Harbour Island, Eleuthera, and in July of 1979 Barbara and Constance Boone went to Micronesia with one of Tom Rice's shelling tours.

Barbara and Constance are due in this month from a shelling trip to Comoros Islands, Mauritius, Madagascar, and Kenya.

Barbara and Jim have been active supporters of our club. Both have served on the board, and Barbara has been chairwoman of our Shell Auction and helped with other auctions.



Figs. 1 & 2. Nucula aegeensis Jeffreys, 1879, collected by dredging at 50 fms., 69 miles SSE of Freeport, Texas, by Bureau of Commerical Fisheries; 4.1 - 3.8 mm.

DISTRIBUTION AND RECORDS OF THE MARINE MOLLUSCA IN

THE NORTHWEST GULF OF MEXICO

(A Continuing Monograph)

SUPERFAMILY NUCULACEAFamily NUCULIDAE Gray, 1824.

Small bivalves without external ligament, but with an obliquely slanted chondrophore.

Sources: A.M. Keen in Treatise Inv. Pal., Part N, Vol. 1, p. 230-231.

B.M. James, Ph.D. thesis, Tex. A.&M. Univ., 1972

Genus Nucula Lamarck, 1799.

Small bivalves with a pearly, highly reflective interior. Often with closely spaced shallow radial grooves.

367. Nucula aegeensis Jeffreys, 1879.

This quite common bivalve has in the past for the Texas-Louisiana region been reported erroneously as Nucula proxima Say, 1822. The latter species lives on the East Coast of the U.S.A. from Nova Scotia to Florida and Bermuda, and is higher in shape and less rounded in circumference than N. aegeensis Jeffreys (See Abbott, 1974, for figures).

N. aegeensis is widespread in coastal waters along the Texas-Louisiana coast where it lives in the 10-30 fms. range in somewhat muddy sand bottoms. Dead valves have been dredged in waters as deep as 110 fms. and have also been obtained from the bays (Timbalier Bay (La.) and Matagorda Bay and Christmas Bay (Tex.)). Occasionally a few worn valves are found in beachdrift along the outer beaches (Galveston, St. Joseph Island, South Padre Island).

Previous records (all labeled N. proxima Say, 1822) for the Texas faunal province are: 56, listed for Texas; 136, reported for 7 stations off East Texas, alive at 47 feet in sandy mud; 139, listed for "open shelf", plate 39, fig. 40; 145, dead in deep shelf, plate 7, figs. 5A,B, text figure 25b; 170, listed for transitional shelf assemblage off East Texas, alive; 175, listed for intermediate shelf, 12 to 35 fms., on mud bottom, common, plate 4, fig. 27; 201, mudlump fauna; 206, beach records Tex. Conchol., Vol. I (4); 225, Galveston; 236, Galveston; 251, Yucatan shelf; 269, figured on page 147.

Records H.M.N.S.: 84 lots of which 18 contain live collected

material.

Depth Range: 0-110 fms. (optimal 10-30 fms.), alive 7-26 fms.

Geographical Range: North Carolina, Texas, West Indies to Brazil. (Abbott, 1974).

Maximum Size: 6.9 mm.

Eastern Pacific Analogue: ?

368. Nucula crenulata A. Adams, 1856.

A much rarer species, which lives in deeper water than N. aegeensis Jeffreys. In ref. 271 this species has been discussed as N. culebrensis Smith, 1885, which according to Abbott, 1971, is a synonym. This species has an irregular pattern of concentric crenulations on the valve.

Previous records for the Texas faunal province are: 147, dead on Baker Bank; 214, Campeche Bank, plate 9, figs. 15, 16; 271, pages 36-38, 500-2500 meter depth at various locations in Gulf of Mexico including one south of Galveston.

Records H.M.N.S.: 2 lots, of which one contains live collected material.

Depth Range: 55-85 fms., in sandy mud; alive 55 fms.

Geographical Range: South Carolina to Florida; Texas and to Brazil (Abbott, 1974).

Maximum Size: 7.0 mm.

Eastern Pacific Analogue: ?

369. Nucula sp. indet. A.

A single valve, collected very fresh with epidermis, belongs to a 3rd species. It lacks the fine crenulations along the ventral margin and should thus be placed in somewhat questionable subgenus Ennucula Iredale, 1931. (See Keen, 1971). However it is possible that ~~as~~ in other bivalves with ventral crenulations during growth there are no crenulations, which are only present during the intervals at which growth is very slow. Our valve is possibly conspecific with Nucula spec. A of reference 271.

Previous records for the Texas faunal province are: 271, off western Louisiana in 329-366 m. (alive).

Records H.M.N.S.: A single valve off Mississippi delta in 228 fms. in mud bottom.

Geographical Range: Only known off Louisiana.

Maximum Size: 7.2 mm.

Eastern Pacific Analogue: ?

Remarks:

Other species reported are:

Nucula cymella Dall, 1886 (listed in ref. 7)

Nucula callicredemna Dalla, 1890 (discussed in ref. 271, p. 29-36)

Nucula fernandinae Dall, 1927 (ref. 271, p. 38-39)

Nucula oblitterata Dall, 1881 (ref. 271, p. 39-43)

Nucula pernambucensis Smith, 1885 (ref. 271, p. 43-46)

Brevinucula verrillii (Dall, 1886) (listed in ref. 45 "Texas region (Dall)")

SUPERFAMILY NUCULANACEA

Represented by two families Nuculanidae (with resiliifer) and Malletiidae (without resiliifer). The latter live exclusively in very deep water.

Family Nuculanidae H. and A. Adams, 1858.

Of this species rich family several genera live in the N.W. Gulf of Mexico: Nuculana, with a number of subgenera, which require better definition, Yoldia and Portlandia.

Sources: H.S. Puri in Treatise Invert. Pal. Part N, Vol. 1, p. 235-241.

B.M. James, 1972, Ph.D. thesis Tex. A.&M. Univ.

Genus Yoldia Moller, 1842.

Thinner and larger than Nuculana. Usually gaping at both ends.

370. Yoldia (Orthoyoldia) solenoides Dall, 1881.

The only Yoldia of the N.W. Gulf of Mexico is common in somewhat deeper water and is not very variable. In quite juvenile material the few teeth appear as little protuberances placed in a row on two lateral ramps.

Previous records for the Texas faunal province are: 7, listed for deep water; 110, mentions record by Dall (type locality); 139, listed for outer shelf, pl. 39, fig. 46; 140, dead on Baker Bank, dead on Big Southern Bank; 145, deep shelf, pl. 7, figs. 6A-B, text figure 25a; 146, deep shelf, recent delta influence, pl. 3, figure 19; 156, Stetson Bank; 164, upper continental slope 65-600 fms., common, occurs dead from 40 fms., living to at least 118 fms., pl. 6, fig. 9; 201, listed in appendix (mudlump fauna); 206, Tex. Conchol., Vol. IX, #4, p. 94; 225, Galveston; 236, Galveston; 271, p. 135-138, fig. p. 137, 188-732 m., alive at 183-194 meters.

Records H.M.N.S.: 49 lots, of which 6 contain live collected material.

Depth Range: 20-167 fms.; alive 25-140 fms.

Geographical Range: Apparently restricted to the Northern Gulf of Mexico.

Eastern Pacific Analogue: Yoldia (Orthoyoldia) panamensis Dall, 1908. "Panama Bay, 315 to 589 m. (Keen, 1971) is somewhat similar.

Genus Portlandia Morch, 1957.

A single species belonging to the nominate subgenus has been once dredged in a depth of 50 fms. off Galveston. It has the typical shape of Portlandia (see fig. 4925 of Abbott, 1974).

371. Portlandia spec. indet. A.

Until more material is obtained I hesitate to name this species. It resembles the figure of Portlandia arctica (Gray, 1824) as given by Abbott, 1974, closely.

Previous records for the Texas faunal province are: 206, Tex. Conch., Vol. IX, p. 76 (as Malletia sp. A.).

Depth Range: 50 fms., on mud bottom (south of Galveston).

Geographical Range: Unknown.

Eastern Pacific Analogue: None.

Genus Nuculana Link, 1807.

Usually rostrate, and with concentric sculpture or smooth. The Texas-Louisiana material is exceedingly difficult to separate into "species", especially those species with concentric ridges which are placed in the subgenus Saccella Woodring, 1925. To this subgenus belongs more than 50% of all our lots in the Nuculanidae. After careful study of the available material I have come to the conclusion that one of the small and abundant Nuculana's of our coastal bays, which always has been labelled N. acuta (Conrad, 1831), has nothing to do with that species, but should be named Nuculana unca Gould. N. acuta (Conrad, 1831) is a much deeper water species.

Other subgenera here recognized are Ledella Verrill and Bush, 1897, Prepeleda Iredale, 1924 and Jupiteria Bellardi, 1875. The latter might be considered a full genus.

372. Nuculana unca (Gould, 1862).

Leda unca Gould, Proc. Bost. Soc. Nat. Hist., 8, p. 282.

This widespread and abundant species is restricted to the coastal bays and shallow offshore waters to a depth of 12 fms. Below this depth it has not been taken alive, and dredged material is probably fossil. It is the smallest of the Texas Saccella's (maximum size 7.1 mm.). In some coastal bays, especially near Corpus Christi huge numbers of valves can be collected, but live specimens are quite rare along the bayshores but common in the bay centers (Parker, ref. 164). Most of these valves derive probably from channel dredgings and may be Pleistocene in age. Dead valves are also fairly common in beachdrift along the entire Texas coast.

Up till now it has been customary to label this species N. acuta (Conrad, 1831). I have not seen the type specimen of that species, but basing my opinion on a figure given by Dall, (Blake Report, first part, plate 7, figs. 3a,b, reproduced somewhat faded in Abbott, 1974), and the discussion (ibid, p. 251,252), which cites a depth range of 54-155 fms., I believe that N. acuta is a common offshore species from a much deeper depth range, which is somewhat different in shape and sculpture and which reaches a larger size.

The entire Saccella complex from the Neogene of the South Western U.S.A. and Gulf Coast needs to be revised before any labels given to species in the Saccella complex can be trusted. The figure of N. acuta in references 206 (Vol. VI, page 49, 1970) (= N. unca Gould) and 269 (page 148) are fairly typical. Sometimes there are fewer concentric ridges and in mature material the rostrate form is more emphasized. Andrews (ref. 269) cites 10 mm. as about the maximum size but this is erroneous.

Probably all specimens in the literature recorded as N. acuta are this species. (i.e. unca).

Previous records for the Texas faunal province are: (All as N. acuta) 45, Point au Fer, Cameron, La.; Galveston, Texas; 66, listed for Marine Pleistocene of Texas: 67, Port Isabel; 98, alive in lower Aransas Bay; 110, common in beachdrift all along the Texas Coast, pl. 6, figs. 3-4; 135, dead in Gulf, alive in bays; 136, alive off East Texas Coast in 40-55 feet of water; 139, listed for "open bays", pl. 38, fig. 14; 145, upper sound inlets, shallow shelf (all dead), pl. 2, figs. 8A-B; 156, common on Stetson Bank, (note: this can be true N. acuta Conrad); 160, alive in Matagorda Bay; 164, alive in open bay center at Rockport, alive in Laguna Madre, pl. 1, fig. 6; 144, listed; 175, listed for enclosed lagoon or interreef assemblage, pl. 1, fig. 13; 201, listed for mudlump fauna, (note: quite rare in that fauna, probably, true N. acuta); 202, pl. 1, fig. 1 (Mexico); 206, beach records Tex. Conchol., Vol. III, #4; 208, "open bay center" and "enclosed bay center"; 225, Galveston; 236, Galveston; 253, uncommon on reef offshore Padre Island; 269, figured on page 148.

Records H.M.N.S.: 74 lots of which 10 contain live collected material.
Depth Range: 0-25 fms.; alive 4-12 fms.

Geographical Range: Not clearly established, but including Carolinas, Texas and probably south into the Caribbean.

Maximum Size: 7.1 mm.

Eastern Pacific Analogue: Close appears to me N. (Saccella) acrita (Dall, 1908). "Punta Penasco, Sonora, Mexico to Panama in depths to 53 m. (Keen, 1971.)

373. Nuculana (Saccella) acuta (Conrad, 1831).

This is a somewhat larger species from a quite different depth range. It is a quite variable species especially in regard to the density and width of the concentric ridges. In very deep water it is replaced by a much larger species of the same complex (Nuculana spec. indet. A.). It differs in shape from N. unca in that it is less rostrate, more inflated and hence more symmetrical in appearance. Noticeable are the radial grooves on the posterior part of the valves. Such grooves are sometimes faintly present in N. unca, become quite clear in N. acuta and are quite emphasized in the deep water species (N. indet. A.). Juveniles of the 4 species N. unca, acuta, concentric and spec. indet. A. are often impossible to separate.

Previous records for the Texas faunal province are: 145, offshore form, deep shelf, alive, pl. 7, figs. 7A-B; 170, deep shelf assemblage; 206, Tex. Conchol., Vol. IX, p. 63, as Nuculana sp. F.; 214, pl. 9, figs. 17, 18 (Campeche Bank); 251, Yucatan shelf.

Records H.M.N.S.: 63 lots of which 17 contain live collected material.

Depth Range: 20-110 fms. (except dead shells from Stetson and Clay Pile 70-100 feet); alive: 20-76 fms.

Geographical Range: Cape Cod, Massachusetts, to Texas and the West Indies. Brazil. (Abbott, 1974).

Maximum Size: 9.6 mm.

Eastern Pacific Analogue: Nuculana (Saccella) ornata (d'Orbigny, 1845) a Peruvian species ranging north to Ecuador (Keen, 1971) is extremely close.

374. Nuculana (Saccella) spec. indet. A.

This species, the largest of the Texas-Louisiana coast Saccellas, has only been collected below 50 fms., where it is probably widespread over mud bottoms. It is characterized by a thick shell and widely spaced rather square concentric ridges. In some fresh valves there appears to be slightly visible crenulations along the posterior margin. This might be N. jamaicensis (d'Obrigny, 1842).

Previous records for the Texas faunal province are: 206, Tex. Conchol., Vol. IX, p. 76.

If this is indeed conspecific with N. jamaicensis (d'Obrigny, 1842) then additional records are (all as N. jamaicensis d'Obrigny) 147, dead on Baker Bank; 175, listed for outer shelf, 40-65 fms. abundant whole coast, mud bottoms, pl. 5, fig. 8; 251, Yucatan Shelf

Records H.M.N.S.: 16 lots of which two contains live collected material.

Depth Range: 50-167 fms., alive 70-76 fms.

Geographical Range: Unknown

Maximum Size: 15.1 mm.

Eastern Pacific Analogue: Probably close to Nuculana (Saccella) bicostata (Sowerby, 1871). "Panama to Equador" (Keen, 1971) although in this species the concentric ridges are much closer together and less square in crosssection.

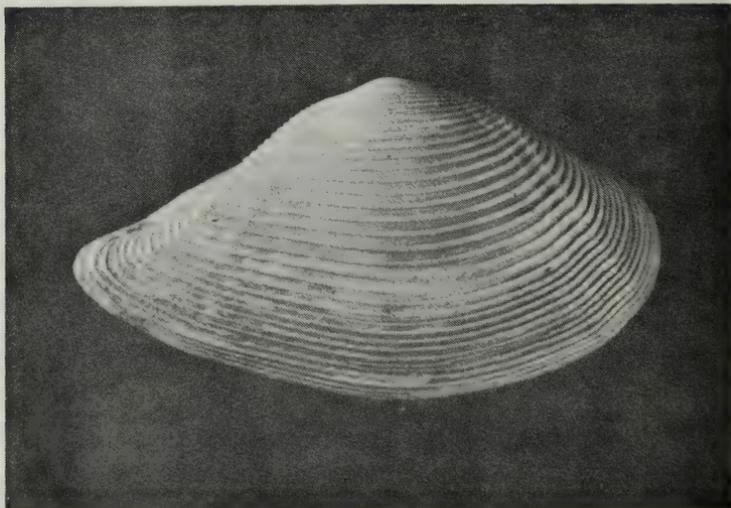


Fig. 3. Nuculana (Saccella) spec. indet. A., collected July 18, 1967, by Harold Geis and S. Stubbs, dredged at 70 fms. from mud 68 miles SSE of Freeport, Texas, 11.7 mm.

375. Nuculana (Saccella) concentrica (Say, 1824).

Nucula concentrica Say, Journ. Acad. Sci., Phila., 1st Ser. IV, p. 141-142.

Nuculana concentrica is one of the most widespread bivalves along the Texas-Louisiana coastline. It inhabits probably all of the coastal bays and is abundant in shallow waters to a depth of 25 fms. in sandy mud bottoms. Parker (1960) reported this species under the name N. eborea Conrad which is a synonym. This author also reported two forms of the species, a smooth one and a ribbed one. Indeed there is a considerable range of variation in the amount of sculpture in the species. In general there are three growth stages; the first shows a very flat bivalve with slight umbonal undulations. When the animal reaches 2-3 mm. in size most specimens become smooth and shiny and up to growth to say 5 mm. remain rather smooth. Thereafter the 3d stage starts with closely spaced concentric grooves. For some reason in a number of specimens the 2d smooth stage is entirely omitted or starts very late and is brief, so that those specimens appear somewhat ribbed. Those specimens were reported earlier (Tex. Conchol., Vol. IX, p. 75) as the ribbed form.

The shape of the species is also quite variable. Some specimens have developed a long and straight snout which never is turned upwards as in N. unca Gould. In other specimens the shell is stubbier, approaching N. unca in shape. I believe that those differences are possibly due to the properties of the substrate in which the animals live. Abbott cites a maximum size of up to 3/4 inch. Along the Texas-Louisiana coast such a size is never reached, and the species is seldom in excess of 1/2 inch in length.

Previous records for the Texas faunal province are: 4, discussed on p. 250; 7, listed; 15, Corpus Christi and Galveston; 16, from a well at Galveston at 300'-305', 305'-315' and 440'-458'; 18, single valves common at Galveston and Corpus Christ; 21, listed; 26, see p. 588; 45, Galveston and Corpus Christ; 56, listed; 66, marine pleistocene of Texas; 98, bays; 135, alive in bays; 139, listed for open shelf, pl. 39, fig. 44; 143, Matagorda Bay; 145, Mississippi Delta, pl. 1, figs. 14A-B, text figures 15a, 26a; 146, delta front slope of Mississippi, pl. 3, fig. 14; 156, common on Stetson Bank; 160, alive at many locations in Matagorda Bay (note: figure shows N. unca); 156, abundantly alive near Rockport (open bay center), pl. 1, fig. 5 (probably N. unca); 170, transitional shelf environment; 174, listed; 175, listed for many environments, clayey sediments, pl. 1, fig. 12; 206, Tex. Conchol., Vol. III, #4; 225, Galveston; 236, Galveston; 253, off Padre Island; 261, shallow offshore Galveston dominant on mud bottoms; 269, figured p. 148.

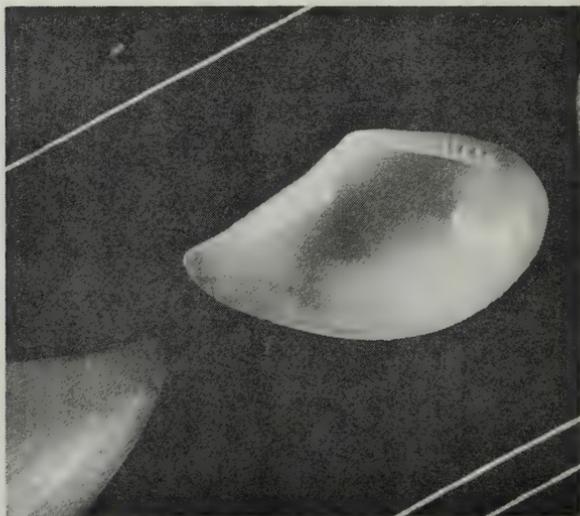
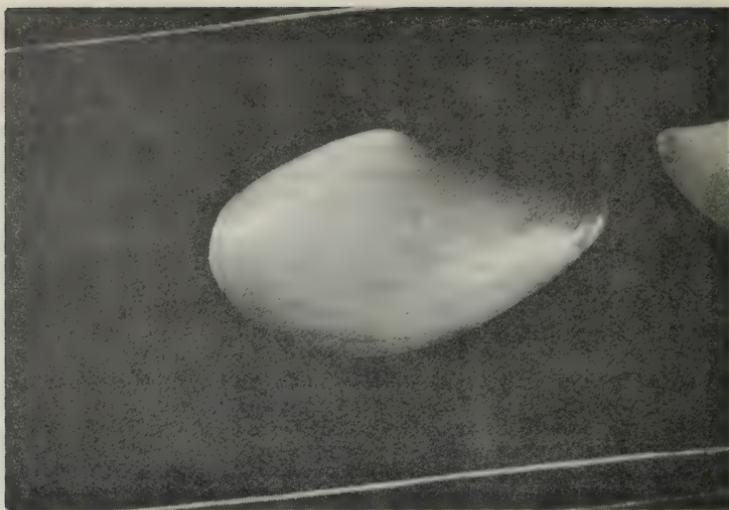
Records H.M.N.S.: 130 lots of which 25 contain live collected material.

Depth Range: 0-43 fms.; alive 0-27 fms.

Geographical Range: Northwest Florida to Texas, Brazil. (Abbott, 1974).

Maximum Size: 13.1 mm.

Eastern Pacific Analogue: No species close to N. concentrica.



Figs. 4 & 5. Nuculana (Saccella) concentrica (Say, 1824), trawled by Gus III, Bureau of Commercial Fisheries, 25 fms., 91½ miles SSE of Cameron, La., August 10-25, 1965; 8.25 mm.

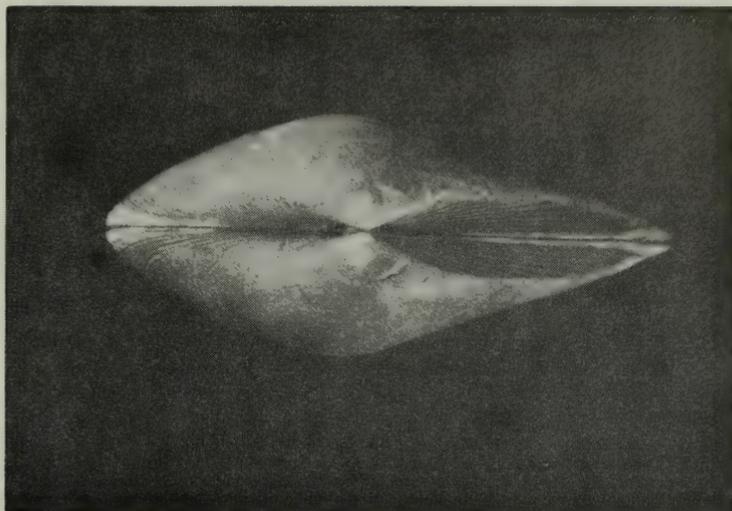


Fig. 6. Nuculana (Saccella) concentrica (Say, 1824), trawled by Gus III, Bureau of Commercial Fisheries, 4 fms., 26 miles NW of SW Pass, Mississippi River, La., August 10-25, 1965; 11.7 mm.

376. Nuculana (Nuculana) carpenteri (Dall, 1881).
Leda carpenteri Dall, Bull. M.C.Z., 9, p. 125.

A very much smaller replica of Propeleda platessa Dall, but with a slightly differently shaped chondrophore. Several times confused with this species. It lives also in fairly deep water, and is more widespread than Propeleda platessa Dall. Also in the mudlump fauna.

Previous records for the Texas faunal province are: 175, listed for upper continental slope, 65-600 fms., rare and differs from true N. carpenteri in shallower water, not figure pl. 6, fig. 8A-B; 201, listed for mudlump fauna; 206, Tex. Conchol., Vol. IX, p. 75; 214, a figure labeled N. carpenteri Dall, p. 132, not figure pl. 10, figs. 3, 4; 271, discussed on p. 109-111.

Records H.M.N.S.: 17 lots, of which 1 contains live collected material.

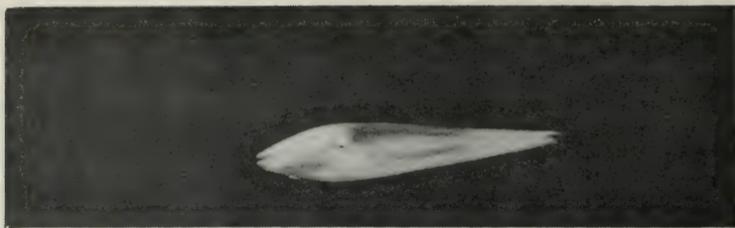
Depth Range: 40-110 fms.; mostly on mud bottoms; alive: 50 fms.

Geographical Range: North Carolina, Eastern Caribbean, Gulf of Mexico. (James, 1971).

Maximum Size: 8.2 mm. (James has measured 9.3 mm.)

Eastern Pacific Analogue: None.

(To be continued)



Figs. 7, 8 & 9. *Nuculana* (*Nuculana*) *carpenteri* (Dall, 1881), dredged by Harold Geis and S. Stubbs from 70 fms., mud bottom, 68 miles SSE of Freeport, Texas, July 18, 1967; 5-2.1 mm.

Photos by Harold Geis

HOUSTON CONCHOLOGY SOCIETY, INC.

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CONCHOLOGIST

VOLUME XVI NO. 4



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The TEXAS CONCHOLOGIST is the official publication of the Houston Conchology Society, Inc., and is published quarterly at Houston, Texas. It is distributed as part of the dues to all members.

The Society holds regular meetings the fourth Wednesdays of the following months: August, September, October, January, February, March, April and May. The meeting is held the third Wednesday in November. Meetings are held at the Houston Museum of Natural Science, Caroline Street in Hermann Park, beginning at 7:30 p.m.

The TEXAS CONCHOLOGIST is published October, January, April and July. It is mailed postpaid to regular members in U.S. postal zones. Overseas members will be charged additional postage. Only one copy will be mailed a family membership.

Dues extend from the beginning of the fiscal year of June 1 through May 31. However, the July issue of the TEXAS CONCHOLOGIST each year is the fourth quarterly due on the regular dues year beginning June 1 of the previous year. Memberships will be accepted throughout the year but will receive the quarterlies of that fiscal year. Members receive meeting Newsletters and have all other privileges provided by the Society's by-laws.

RATES AND DUES

Family membership	\$6.00
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The TEXAS CONCHOLOGIST accepts contributions for publication from amateurs, students, and professionals, subject to approval by the Editor. Manuscripts should be typed, double spaced and should be in the hands of the Editor the first day of the month preceding publication dates. Photos accompanying such material are welcomed.

SHELL AUCTION

Once again we are able to say this year's auction was the best ever. We were very pleased with the results of the 1979 auction, but the results of the 1980 auction leaves us speechless. As of May 1, 1980, the club made \$2241.90, less \$200 for expenses, for a net profit of \$2041.90. All we can say is "Thank You" to all the members who had a part in making the 1980 auction so successful.

A successful auction takes a great deal of effort to collect, label, package and price the many shells. A very special thanks to all who gave so generously of their time and shells.

Lloyd Meister, Jerry Clampit, Jim Sartor, and Frank Petway did a super job of speeding up your check-out-time. Thank you for your help.

A "Special Thanks" to Gladys Sheridan and her refreshment committee for all the goodies we enjoyed. Thank you so much.

The response from shell dealers was tremendous again this year. Several overseas dealers who were contacted for the first time this year proved to be very generous with their donations. A "Super Thanks" to the following dealers who so generously contributed to the 1980 auction: Adam's World of Hobbies, Amora Shells, Bookman's, Coin Shellcrafts, Concepts, Inc., A.J. Gabelish, A Gift for All Seasons, Bill Green, Gulf Publishing Company, Ed Hanley's Coral & Shells, The Hawaiian Mollusk, Thomas Honker, Richard M. Kurz, Inc., Specimen Shells, LeShell, MacIntosh Bookshop, Mal de Mer Enterprises, The Mikado House, Northeast Natural History Imports, Of Sea and Shore, One-Foot-in-the-Sea, Rader's Reef, The Rock Barrell, Sam Houston Philatelics, Sea Castles, Sea Shells & Crafts, The Shell Cabinet, The Shell Lady, Shell-oak, Shells & Accessories, The Shell Store, and Turrentines.

Show them how much you appreciate their generosity by giving them your business and be sure to mention the Houston Conchology Society and the annual auction when you contact them.

Several very nice donations from dealers overseas arrived too late to be included in the auction. At the present time, a mini-auction or sale is being planned for the August or September meeting. This should provide an exciting start for Fall. More details will be announced in the August newsletter. Plan to attend.

As auction chairmen, we would like to express our personal appreciation to all the members of the Houston Conchology Society for their attendance and participation in this year's auction. We had a wonderful time and hope you enjoyed it as much as we did. Thank you for your time, donations, contributions, shells, purchases, and above all your warm personal friendship. THANK YOU ALL.

Best of wishing for the LONG, HOT SUMMER. See you in the Fall.

Happy Shelling,
Dave and Lucille Green
1980 Auction Chairmen

NEW OFFICERS ANNOUNCED

New officers of the Houston Conchology Society for 1980-1981 are announced on the inside cover of this issue. Dave Green is enthusiastically assuming the duties of president and needs the support of every member. He will appreciate your offers to serve on several committees next year. Call him if you have some time to give the club.

SEARCH AND SEIZURE

By Constance E. Boone

Far away places have been attracting more and more of our club members each year. The lure of finding bigger and better shells on distant shores has become stronger and stronger, it seems to me. The travel pages are read avidly every week end, and members seek adventures to island shores thousands of miles from home. I am just as eager to try new places as any member of our society.

Therefore, it is with chagrin that I report a recent statement of mine made to fellow travelers as we snorkeled and dove in waters half way around the world in the Indian Ocean, at Mauritius off the East Coast of Africa. I ruefully recall that I told the divers who were trying so hard to find shells, "Come to Texas next winter and I will help you fill your collecting bags with big shells."

The truth is that we probably can collect a bucket of big shells (Busycons, Mer-cenarias, Dinocardiums, Dosinias, Atrinas) quicker than we ever saw big shells collected on that trip to the islands off East Africa, but conditions would have to be right here with tides and winds and time of year. And the truth seems to be clearer and clearer that we haven't had great collecting here or anywhere at many places thought good for collecting through the years.

I read a lot of club newsletters and quarterlies and have begun to notice that more and more areas are being closed to shelling and also that there is less-than-fabulous collecting for the average collector. Collecting is getting harder to do. The Filipinos are using deep netting for their good shell finds. This is hit and miss also and takes a lot of work. This spring I talked to a collector from Florida who went to the Philippines to collect. He succeeded in getting aboard a native's boat headed out to retrieve a bottom net set out for shells. He had visions of buying some but especially to photograph the operation. That day the tangled nets came up completely empty. He made photos of the operation and bought a net to bring home to illustrate his talk to clubs but he missed seeing shells that day. Our member, Curtis Fleming, has returned from a lengthy trip to the Philippines and Thailand and talks of buying new shells for his collection but says that he didn't do much collecting. He mentioned that he did hire a boat and go out with some native divers in the Philippines but what they brought up that day wouldn't make them a living.

The native hawkers in the Comoros Islands and Mauritius had big shells to sell. We were told it wasn't the season for the helmets to be close in shore. Perhaps we weren't there at the right time. However, after I got home I happened to read an account by Andre Rouillard (member and officer of a new African club) in the Reefcomber, publication of the Natal Shell Society, on collecting areas in Mauritius. A M. Velliard from Reunion came over to Mauritius to take us shelling.. We went out by boat to some islands and found some shells but not very big ones or very unusual ones. In the Rouillard account of shelling in Mauritius in the Natalpublication, he added that the island was becoming a tourist paradise and that shells have either disappeared completely from the more accessible shelling spots or were few and far between. That is what we found to be true.

A recent report by a collector to the Maldives, islands I have long wished to visit, recounted his difficulty in getting gear to Scuba because it was reserved for clubs and the tourists (mostly German) who visited these clubs. He said that about the only way to get larger shells or more desirable shells was to Scuba on

offshore areas. Inshore waters were void of shells, he reported.

Ruth Goodson told us that this seemed to be true in Thailand. The natives brought in shells for their trade but shallow waters were simply empty of shells. She got very few shells herself in the Philippines also.

Certainly last year in Palau Barbara Hudson and I did get a lot of big and desirable shells. There are still areas in the Pacific where shells are plentiful if you are willing to seek them out. To get to the areas where the shells were we did have to go on long boat rides in Palau and we had to shell out plenty of money to do this. I have recently heard from other collectors that prices have been raised even more there as oil prices keep climbing and running the boats becomes more expensive. More and more being an armchair collector seems attractive.

Barbara and I missed getting to Ponape and now this island is off limits for collecting shells by tourists.

Some of our members have wonderful memories of collecting in the Solomons. I have always thought this would be a great place to go. It's on my list of dream trips. A report by a collector visiting the Solomons group of islands mentions that he was told that shells would be available under each coral rock in the passage area between the islands. What was not mentioned to the collector was how far the sand areas were between such coral heads.

This proved true on our visit to a beach at the Comoros Islands. One of our party of collectors swam way out to the edge of the reef and found a large coral lump. Around and on that lump he was able to collect a nice double handful of cones and Cypraea that the rest of us were not getting in the inshore areas (almost devoid of shells, murky and with silty coral heads). As soon as he came in with the shells, several of our group were determined to head out to that coral head. The first collector dashed their hopes by saying he thought he had pretty well covered the clump and that he didn't see any other clumps nearby.

With the gasoline prices going up more and more, staying at home and learning more about our local fauna becomes more important and attractive. The sheller in Texas knows that after awhile he doesn't need the bucketful of Busycons, etc., and he can enhance his collection by studying the smaller shells, many really very rare. Certainly our club members have had a wonderful opportunity to study the bivalves of our Northwestern Gulf. This issue of Texas Conchologist continues the Monograph of bivalves by Helmer Odé. Many of the bivalves he has reported in the Monograph since 1974 are hard to recognize and even harder to obtain. It would be an interesting project for any club member to try and achieve the ultimate---acquisition of each bivalve discussed by Odé. To do this you'll have to study the Monograph and begin to think of ways to dive off our coastline before the Flower Gardens and other special collecting spots are put off limits for collecting. There are still oil rigs and areas off the jetties where bottom samples could be brought up and studied, and there are still sandy bays to be dredged or walked at low tide where bivalves lurk you do not have in your collection.

Think about it anyway---knowing the shells in your own area is very important also. It'll be satisfying to work on them while you long to go to another exciting shore. Maybe we can have a grunge party at one of our meetings and identify some of the small shells we may have to be satisfied with. I can help get grunge samples for this kind of session if you are interested.

The writing of part 1 of this conspectus of philatelic conchology was sparked by the appearance of Tom Rice's checklist of shell stamps. Now suddenly, there has been a bolus of 3 new publications on the subject. The three books are:

Shells on Postage Stamps Around the World by Karl Emmerich. 1980

Insects and Other Invertebrates of the World on Stamps. Willard F. Stanley, editor. 1979.

Shells on Stamps of the World by Kohman Y. Arakawa. 1979.

Karl Emmerich's book survived some unbelievable pre-publication crises and came out this year. It is reviewed separately in the pages of the TEXAS CONCHOLOGIST. The second recent publication is one in a series of handbooks compiled by the American Topical Association (ATA). The booklet is entitled:

INSECTS AND OTHER INVERTEBRATES OF THE WORLD ON STAMPS.

By the Biology Unit, ATA, Willard F. Stanley, editor.

ATA Handbook #98. 135 pages. 1979. Soft covers. 6x9 inches. \$10. (The booklet may be ordered from American Topical Association, 3306 North 50th Street, Milwaukee, Wisconsin, 53216.)

The ATA booklet contains a section on the Phylum Mollusca (pages 70-89) put together by Byron H. Bratlie, George A. Bearse and Willard F. Stanley. The assistance of many others is acknowledged in the foreword including L.B. Holthuis, Richard E. Petit and Karl Emmerich. In this handbook, the information is arranged differently. There is biologic or taxonomic orientation. The systematic classification goes from Class to Order to Family to Species. (Genus is not particularly emphasized.)

Under each species are listed the countries that have issued stamps depicting that species. The stamp identification utilizes (generally) Scott numbers. For some reason, the common name of the mollusks is used preferentially. Although the scientific name follows, the sequence seems awkward. Nonetheless, the handbook should be useful.

Only two pages of illustrations of shell stamps are shown. About 30 stamps are crowded into each page and the details are not very clear. The pictures serve primarily to illustrate, in a general way, some of the stamp designs.

The third book comes from Japan with the following title:

SHELLS ON STAMPS OF THE WORLD. AN ILLUSTRATED CATALOGUE OF MOLLUSCA ON POSTAGE STAMPS. By Kohman Y. Arakawa. Published by the Biological Society of Nagasaki Prefecture, Nagasaki City, Japan, 1979, 234 pages. (This book has been advertised by American Malacologists, Inc. P.O. Box 2255, Melbourne, Florida 32901, for \$14.50).

Since this book, along with the one by Karl Emmerich, effectively illustrates the essentials as well as the potentials of combining conchology with philately, it will be reviewed here in some detail.

The book is written in Japanese with pertinent English inserts. (It is very

reminiscent of the fine shell books that have come from Japan. This new book is about the same size, too.) The English subtitles convey the meanings very well (occasionally with unusual but quaintly appropriate choice of words). The Latin names of the mollusks are easily read. The book can be used meaningfully and easily by anyone interested in seashells or in stamps.

In the front section are 16 full pages in color showing various types of shell stamps classified as: murex shells, cowrie shells, conch shells, cone shells, octopi and squids, living shells, commercially valuable shellfishes, artistic and folkloristic shell works, fossilized shells, land and fresh water shells, postal stationeries and tabs of stamps and souvenir sheets, first day covers and cancellations showing shell designs, overprinted surcharged and/or re-inscribed stamps, mis-figured shell designs and/or misprinted inscriptions, and Japanese scenic cancellations showing shell designs. The reproductions are excellent showing 14 to 19 stamps on each page. The color is superb.

The book is divided into 6 sections. Section 1 is the introduction (unfortunately written in Japanese). The author presents some interesting histograms on malacophilatelic statistics on such aspects as frequency of molluscan species on stamps by families and frequency of stamps showing shells as the principal element of design and as subsidiary subject of design. Maps are included depicting distribution of principal countries issuing shell stamps. There is a tabulation by countries. One of the more fascinating histograms shows the number of shell stamps issued by 10-year periods from 1840 to 1978. It is interesting that prior to 1941 all of the shell stamps showed the shells as the subsidiary subject of the design. Between 1961 and 1970 there was an abrupt increase in the number of stamps (over 200) showing the shell as the principal component of the design. Between 1971 and 1978 there has been an even greater increase in such stamps, approximating 350.

Section 2 explains how the information on the shell stamps is presented. Section 3 comprises the main portion of the book (125 pages) and constitutes the catalogue of shell stamps. In this book the information on the stamps includes country origin, year of issue, type of stamp, identification of set, number in set and method of printing. The individual stamps are listed by Scott number (1979). References are made to Minkus (1974-75) and to Gibbons (1978) catalogs when necessary. The scientific name of the mollusk is given. The systematic position of each shell on the Systematic Index as printed by the author is also indicated.

Section 4 lists the various stamps showing mis-figured shell designs and misprinted inscriptions. Listed as mis-identified shells are 17 different stamps. Section 5 consists of several appendices such as an unique compilation of Japanese Scenic Cancellations showing shell designs.

Section 6 is a systematic index to shells on postage stamps. Here the mollusks are listed in the standard nomenclatural arrangement. Any mollusk species that has appeared on stamps can be located promptly as to the country and year of issue.

This book, too, like the one by Emmerich, is basically oriented to philately. But it is a usable book providing a lot of supplementary information. It is recommended to those who may have generated an interest in shell stamps.

It seems appropriate to review at this time in a bibliographic way the lists and discussions that have appeared in the TEXAS CONCHOLOGIST concerning the combination of shell collecting and stamp collecting. In an index, the references would be tabulated under several headings, such as:

Philatelic conchology
 Conchological philately
 Philatelic malacology
 Malacologic philately
 Concho-philately
 Malaco-philately
 Seashell stamps
 Mollusks on stamps

Here are the articles and the titles that have been printed over the years in TEXAS CONCHOLOGIST.

<u>Year</u>	<u>Month</u>	<u>Vol. No.</u>	<u>Page</u>	<u>Title</u>
1. 1966	October	III 3		Comments in <u>Molluscana</u>
2. 1966	December	III 4		Comments in <u>Molluscana</u>
3. 1968	March	IV 7	52	Stamp news in <u>Molluscana</u>
4. 1969	January	V 5	54	Conchological Philately (Part I)
5. 1969	February	V 6	68	" " "
6. 1969	March	V 7	75	" " (Part II)
7. 1969	April	V 8	88	" " (Part III)
8. 1969	November	VI 4	40	Discussion in <u>Molluscana</u>
9. 1969	January	VI 5	53	Conchological philately updated
10. 1972	February	VIII 6	66	Mollusks on stamps
11. 1973	September	X 2	21	Collecting seashells on stamps
12. 1975	March	XI 3	67	Seashells and stamps
13. 1975	June	XI 4	101	More and more shell stamps
14. 1975	September	XII 1	27	Conchological philately
15. 1976	June	XII 4	126	Conchological philately
16. 1976	December	XIII 2	40	Discussion in <u>Molluscana</u>
17. 1978	June	XIV 4	84	Sinistral dextrads in philatelic conchology
18. 1980	April	XVI 3	55	Philatelic conchology - a conspectus (Part 1)

The recent books and checklists of shells on stamps provide information that would have required weeks and months of hard digging to obtain if one had to start from scratch. But this is only the beginning. New stamps continue to appear with increasing frequency and in great numbers. How does one keep abreast of the mass of new issues? It is much like shell collecting. One browses through shops. One locates other collectors with kindred interests and exchanges specimens and/or information. One rolls up the sleeves and begins searching the likely "habitats".

The first step, then, would be to learn about the new shell stamps that are being issued. It can be done. One starts by subscribing to a basic core of four periodicals. (The cost of the subscriptions would be inconsequential compared to the cost of a single shelling trip).

(To be continued)

DON'T FORGET TO USE THE LIBRARY THIS SUMMER. WE REMIND YOU THE BOOKS ARE HOUSED ON SHELVES IN THE INFORMATION OFFICE OF THE HOUSTON MUSEUM OF NATURAL SCIENCE.

SHELLS ON POSTAGE STAMPS AROUND THE WORLD. By Karl Emmerich. Topical Philatelic Publishers. P. O. Box 65, Fullerton, California, 92632. 1980. 110 pages (7 3/8 x 10 1/2 inches). Hard cover. \$20.80 postpaid.

This book provides a gorgeous sampling of stamps that depict shells. The reviewer unreservedly recommends the book for the libraries of all shell collectors and of many philatelists as well. The book will serve as a reference source. It is full of interesting and stimulating information. It is a beautiful book and is destined to be a conversation item..

The book is organized in three parts. The first is titled "Getting Acquainted with Shell Stamps". This part (68 pages) includes a foreword (which proposes a new term for the hobby - concho-philately) and an introduction by Dr. William J. Clench. There is a brief postal history of shells, a listing of geographic origins of shell stamps and a "catalogue" of shell stamps of the world.

The reviewer particularly liked the catalogue section (35 pages). The presentation of the information follows the familiar format used in philatelic catalogs (such as Scott's Standard Stamp Catalogue). The stamps are listed by countries in alphabetical order. The printed information includes data/year of issue, type of printing process (e.g. photogravure, engraving, lithography, etc.), perforation, watermark, catalog number (usually Scott), Scott identification of design, denomination of stamp, name or description of shell, and the author's key for the shell design (dominant, secondary or minor).

This part also contains a catalog supplement for some stamps issued in 1978 and 1979. In the section entitled "Your Stamp Album", "Philatelic Accessories" and "How to Save on Purchases of Shell-Stamps" practical suggestions are given on how to obtain and handle shell stamp collections. The section also lists postal agencies around the world.

The second part of the book (a short 7 pages) should have wide appeal among the readers. It has the intriguing title of "The Shell Stamps Most Dealers Are Not Aware Of". Among the variety of shell interests illustrated are: art masterpieces; coat-of-arms designs; use as musical instruments; and, use of shells in museum pieces, commerce, and in tribal adornments.

Part three (24 pages) provides fascinating reading particularly for those with more than casual interest in concho-philately. The author asks the question: "How Deep Do You Want To Dig?" Included here are descriptions of postal stationery, "cinderella stamps", periodicals, and shell-related postmarks. Included here also is a dictionary of philatelic terminology, an alphabetical index of shells on stamps (by species) and the author's selection of the world's prettiest shell stamps and of the most valuable shell stamps.

The beauty of the book stems from 20 full pages of shell stamps in gorgeous color. The stamps are reproduced in full size and the details are clear. The stamps are obviously selected with care to illustrate graphically the subject matter such as: first shells on stamps; cowries; land and fresh-water shells; rare shells; cones; evolution of a stamp; shell-stamps on stamps; look-alikes but not alike; souvenir sheets and miniatures; Trucial States; shells in diversified categories; shell painting; shells on coats-of-arms; cowries in tribal ornament; postal stationery; local and bogus stamps; desirable and often overlooked stamps; philatelic terminology illustrated; and, find the shell on the stamp. The additional six full pages

of black and white pictures show fossil shells, first day covers, conchologists on stamps, and postmarks.

An example of the type of unusual material in the book is the description of commatology, that is, the collecting of postmarks. Shown are such postmarks as Mollusk, VA., Bivavle, N.D. Cone, Tx., Musselshell, MT., and Shell, WY. Scattered over the work there are at least 11 postoffices named Lima including one in Ohio. The page marked "Evolution of a stamp" also merits comment. The stamp pictured is Monaco #583 which depicts Fasciolaria trapezium. Photographs of the artist's drawing as well as color proofs are shown. Included also is a photo of the finished stamps and a full size reproduction of a cacheted first day cover.

It is difficult to contain one's enthusiasm for the book. The narrative is concise and purposeful. The details appear to be well-researched. The author adheres closely to connotations implied by the use of the word "shell" in the title and of conchology in concho-philately. (The reviewer did not find many references to mollusks without shells such as squids, cuttlefish and octopus although the nautilus were listed).

The book is primarily oriented philatelically - but the author points out many directions in which concho-philatelic interests may expand.

(This book has arrived for our library)

SEA OTTERS ARE BEATING US TO THE SHELLS

A recent science story in The Houston Chronicle by Muriel Dobbin of the Baltimore Sun reported that the sea otter eats about 5,000 pounds of clams and abalone annually and is threatening the California shellfish industry, according to state officials.

The captivating little creature is said to have destroyed the \$1 million a year abalone industry in Morro Bay and has moved on to Pismo Beach, a major center for sport clamming.

The average otter weighing 50 pounds will eat one-fourth of his body weight daily and can dive 180 feet and hold its breath for at least five minutes. It can gobble up to 70 clams a day.

The otter is now covered by the Marine Mammal Protection Act and its numbers have swelled from 50 to 1,400 during the 1970s.

Fishermen and clambers have to abide by legal size limits and catch limits, but the otters have gone merrily on their way gobbling up the mollusks.

There are big discussions going on about what to do about the situation, whether to set up an otter management regime or to relocate some of the otters. The only enemy of the otter is said to be the great white shark.

The Gray Whale

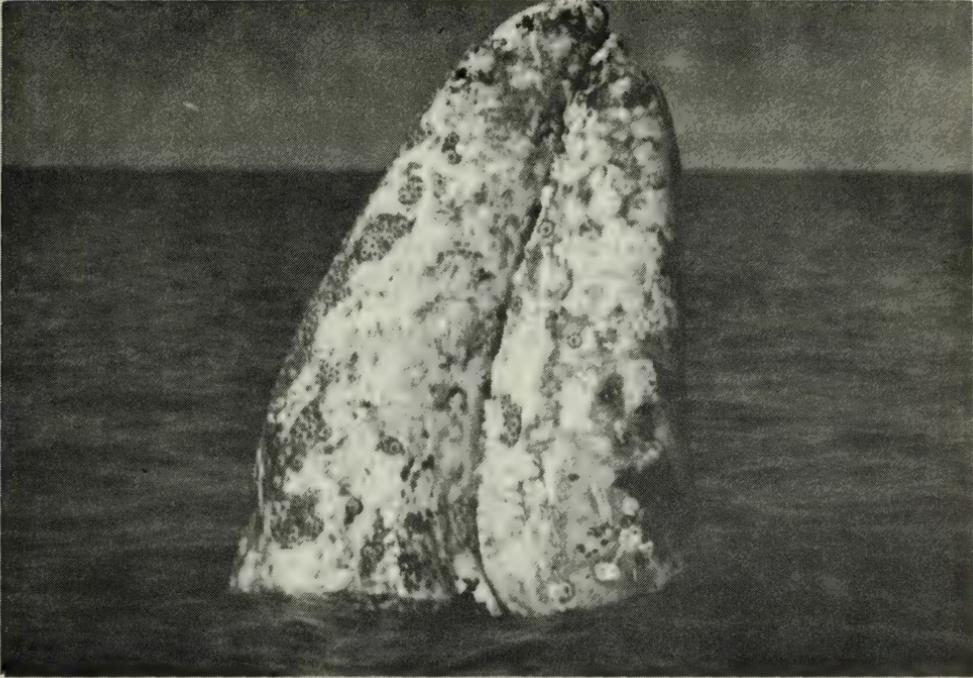


Fig. 1 The magnificent gray whale stands tall in the water at San Ignacio Lagoon, Baja California, as members of the Baja adventure cruise nearby in small boats. Some of the participants even got close enough to lean over and kiss a whale!

Photos by T.E. Pulley

A group sponsored by the Continuing Education Department of the University of Houston and the Houston Museum of Natural Science visited the west coast of Baja California, Mexico on February 3-11, 1980. The group boarded the Mascot VI, an 85 foot boat out of H and M Landings, San Diego, California and sailed southward to San Ignacio Lagoon where 3 days were spent observing the gray whales, bird-watching and beach combing. Stops were made at San Martin Island and Cedros Island on the way down and at San Benito Islands and Todos Santos Islands on the way back.

Normally, such groups are instructed not to collect any kinds of specimens, including either live or dead shells from the beaches. However, the Houston Museum of Natural Science has an important collection of mollusks from the Gulf of Mexico and the Caribbean, and permission was obtained from the Mexican officials to collect from localities on the west coast of Baja California.

Few collectors have visited these west coast sites, and the fauna has not been adequately reported. The two most useful popular books for identifying shells from this region are American Seashells by R. Tucker Abbott (1974) and Sea Shells of Tropical West America by Myra Keen (1971). Neither of these books is specifically intended for the area, since American Seashells lists only those species which occur at least as far north as California, and Sea Shells of Tropical West America is based on the tropical fauna from the Gulf of California southward to Peru. A third useful reference is Marine Shells of Southern California by James H. McLean (1969) and the Revised Edition (1978).

Like the west coast of the United States, the Pacific shores of Baja California are strongly influenced by the cool California Current which sweeps southward from the Aleutians to at least as far south as Cape San Lucas at the tip of the Baja Peninsula. The water is much warmer in the Gulf of California on the east side of the Baja Peninsula, and tropical conditions prevail from this area southward to Ecuador and Peru.

The west coast of Baja California is at the boundary between cold northern water and warmer water to the south, and the mollusk fauna is strongly influenced by this intermediate position. Of the 123 identified species collected on this trip, almost half (60) are characteristic of cool northern waters and have their southern limit on the Baja Coast.

Ranges of Northern Species
with Southern Limit on Baja Coast

	<u>No. of species</u>
Alaska to Baja	9
British Columbia to Baja	6
Washington-Oregon to Baja	5
California to Baja	40
	60

About one third of the species are of southern origin with their northern limit on the Baja Coast:

<u>Ranges of Southern Species</u> <u>with Northern Limit on Baja Coast</u>	<u>No. of species</u>
Baja to Costa Rica	2
Baja to Panama	3
Baja to Ecuador	11
Baja to Peru	20
Baja to Chile	2
	<u>38</u>

There are 4 species restricted to the west coast of Mexico, including western Baja. One other species is restricted to the west coast of Baja (Abbott lists this one as a subspecies).

There are 20 southern species with northern limits in California:

<u>Ranges of Southern Species</u> <u>with Northern Limit in California</u>	<u>No. of species</u>
California to Panama	5
California to Colombia	1
California to Ecuador	3
California to Peru	10
California to Chile	1
	<u>20</u>

It is significant that only one northern species is found south of Baja California, and, of the southern species which occur north of Baja, none is found north of California.

In the following list of species no indication is given as to the actual location where each was collected. The greatest number was found in San Ignacio Lagoon, but that is partly explained by the much greater time allowed for collecting there. The lagoon was also the only place which had a large sandy beach exposed to heavy surf, and it was by far the most productive area visited.

Many of the species included in this list are represented by only 1 or 2 specimens, and it is obvious that the list will be greatly enlarged when more adequate collecting can be done.

Plans are being made for another trip to this area February 1-9, 1981. Reservations can be made now by making a deposit. Call Carl Aiken at the Houston Museum of Natural Science for details. A limited number of participants will be accepted for this adventure next year.



Figs. 2 and 3

Lyropecten subnodosus (Sowerby, 1835) awaits the collector as he wades ashore from a small boat at the lagoon at San Ignacio, Baja California. Three pairs were found by T.E. Pulley.

MOLLUSKS COLLECTED ON THE HMNS AND UH CONTINUING EDUCATION TRIP TO BAJA CALIFORNIA

CLASS GASTROPODA

SCIENTIFIC NAME	COMMON NAME	RANGE	ABBOTT	KEEN
1. <u>Haliotis corrugata</u> Wood, 1828	Pink Abalone	Monterey, CA, to Baja	18	
2. * <u>Haliotis fulgens</u> Philippi, 1845	Green Abalone	Point Conception, CA, to Baja	17	
3. <u>Haliotis cracherodii</u> Leach, 1814	Black Abalone	Oregon to Baja	17	
4. <u>Fisurella volcaneo</u> Reeve, 1849	Volcano Limpet	Crescent City, CA, to Baja	28	
5. * <u>Diodora diqueti</u> (Mabille, 1895)	Keyhole Limpet	San Ignacio, Baja, thru Gulf, south to Salinas, Ecuador		pg. 315
6. * <u>Megathura crenulata</u> (Sowerby, 1825)	Great Keyhole Limpet	Monterey, CA, to Baja California	25	
7. <u>Lottia gigantea</u> Sowerby, 1834	Giant Owl Limpet	Crescent City, CA to Baja	29	
8. * <u>Acmaea mitra</u> Rathke, 1833	White-Capped Limpet	Alaska to Baja California	29	
9. <u>Collisella scabra</u> (Gould, 1846)	Rough Limpet	Oregon to Baja	31	
10. <u>Collisella digitalis</u> (Rathke, 1833)	Fingered Limpet	Aleutians to Mexico	30	
11. <u>Collisella limatula</u> (Carpenter, 1864)	File Limpet	Puget Sound to Baja	31	
12. <u>Notoacmea fenestrata</u> (Reeve, 1855)	Fenestrate Limpet	Alaska to northern Baja	31	
13. <u>Norrisia norrisi</u> (Sowerby, 1838)	Norris Shell	Monterey, CA, to Baja	49	
14. <u>Tegula funebris</u> (A. Adams, 1855)	Black Tegula	Vancouver, B.C., to Baja	51	
15. <u>Tegula aureotincta</u> (Forbes, 1852)	Gilded Tegula	Southern California to Mexico	50	
16. <u>Tegula gallina</u> (Forbes, 1852)	Speckled Tegula	San Francisco, CA, to Gulf of California	50	
17. <u>Tegula eiseni</u> Jordan, 1936	Western Banded Tegula	Monterey, CA, to Baja	51	338
18. <u>Turbo fluctuosus</u> Wood, 1828	Turban Shell	Cedros, Baja, thru Gulf to Peru	58	352
19. <u>Astrea undosa</u> (Wood, 1828)	Wavy Turban	Ventura, CA, to Baja	60	
20. <u>Littorina planaxis</u> Philippi, 1847	Eroded Periwinkle	Puget Sound to Baja	67	366
21. * <u>Littorina aspera</u> Philippi, 1846	Periwinkle	Manuela Lagoon, Baja, thru Gulf of California, south to Ecuador ?Peru	69	365
22. * <u>Serpulorbis squamigerus</u> (Carpenter, 1856)	Scaled Worm Shell	California to Peru	101	
23. <u>Cerithidea albonodosa</u> (Gould & Carpenter, 1957)	California Horn Shell	California to Gulf of California	103	419
24. <u>Cerithidea montagnei</u> (Orbigny, 1839)	Horn Shell	Baja to Ecuador	103	419
25. <u>Cerithium stercusmuscarum</u> Valenciennes, 1833	Fly-Specked Cerith	Baja to Peru	105	411
26. <u>Calyptrea conica</u> Broderip, 1834	Chinese Hat Shell	Magdalena Bay, Baja to Ecuador	139	456
27. <u>Crucibulum lignarium</u> (Broderip, 1834)	Cup & Saucer Shell	Gulf of California to Ecuador	140	463

SCIENTIFIC NAME	COMMON NAME	RANGE	ABBOTT pE.	KEEN pE.
28. <i>Crucibulum cyclopium</i> Berry, 1969	Cup & Saucer Shell	Colima, Mexico, to Costa Rica	140	463
29. <i>Crucibulum scutellatum</i> (Wood, 1828)	Cup & Saucer Shell	Cedros, Baja, to Ecuador	140	463
30. <i>Crucibulum spinosum</i> (Sowerby, 1824)	Cup & Saucer Shell	San Pedro, CA, to Chile	140	463
31. <i>Crepidula coei</i> Berry, 1950 (Abbott uses <i>C. incurva</i>)	Slipper Shell	Monterey, CA, to Panama	142	
32. <i>Crepidula norrisiarum</i> Williamson, 1905 (Abbott uses <i>C. excavata</i>)	Slipper Shell	Monterey, CA, to Panama	142	
33. <i>Crepidula onyx</i> Sowerby, 1824	Onyx Slipper Shell	Southern California to Peru	141	460
34. <i>Trivia radians</i> (Lamarck, 1810)	Radiating Trivia	Magdalena Bay, Baja, to Ecuador	148	487
35. <i>Trivia solandri</i> (Sowerby, 1832)	Trivia	Palos Verdes, CA, to Peru	148	487
36. <i>Cypraea spadicea</i> Swainson, 1823	Chestnut Cowrie	Monterey, CA, to Cedros Is., Baja	150	473
37. <i>Natica chemnitzii</i> Pfeiffer, 1840	Moon Snail	Baja, California, to Peru	159	473
38. <i>Pollinices uber</i> (Valenciennes, 1852)	Milk Moon Snail	Baja, California, to Chile	153	480
39. <i>Pollinices reclusianus</i> (Deshayes, 1839)	Moon Snail	Crescent City, CA, to Gulf of California	154	482
40. <i>Malea ringens</i> (Swainson, 1822)	Tun Shell	Puerto Penasco, Mexico, to Paita, Peru	154	499
41. <i>Forreria belcheri</i> (Hinds, 1844)	Murex	Morro Bay, CA, to Baja	171	
42. <i>Maxwellia gemma</i> (Sowerby, 1879)	Gem Murex	Santa Barbara, CA, to Baja	177	
43. <i>Ceratosboma nuttalli</i> (Conrad, 1837)	Nuttall's Purpura	Point Conception, CA, to Baja	185	
44. <i>Ocenebra erinaceoides</i> (Valenciennes, 1832)	Prickly Wing Murex	Southern California, thru Gulf of California to Guaymas	176	534
45. <i>Acanthina lugubris</i> (Sowerby, 1822)	Thorn Drupe	San Diego, CA, to Baja	178	552
46. <i>Columbella fuscata</i> Sowerby, 1832	Dove Shell	Magdalena Bay, Baja, thru Gulf of Peru	574	
47. <i>Anachis hannana</i> Hertlein & Strong, 1951 (Abbott lists as subspecies of <i>A. coronata</i>)	Dove Shell	Restricted W. Coast of Baja from Scammon's Lagoon to Cape San Lucas	197	581
48. <i>Kelletia kelletii</i> (Forbes, 1850)	Kellett's Whelk	Santa Barbara, CA to San Quintin Bay, Mexico, Baja	216	
49. <i>Macron aethiops</i> (Reeve, 1847)	Aethiopian Macron	Baja through Gulf of California	221	
50. <i>Nassarius tegula</i> (Reeve, 1855)	Western Mud Nassa	San Francisco, CA, to Baja	221	566
51. <i>Fusinus dupetitthouarsi</i> (Kiener, 1840)	Spindle Shell	Baja California to Ecuador	229	616
52. <i>Olivia spicata</i> (Roding, 1798)	Veined Olive	Gulf of California, to Panama	232	624
53. <i>Conus perplexus</i> Sowerby, 1857	Perplexed Cone	Magdalena Bay, Baja, to Ecuador	258	669
54. <i>Conus californicus</i> Hinds, 1844	California Cone	Farallon Islands, CA, to Baja	257	663
55. <i>Terebra danai</i> Berry, 1958	Dana Auger	S. California, to W. Coast of Baja	261	672
56. <i>Terebra armillata</i> Hinds, 1844	Auger Shell	W. Coast Baja to Jalisco, Mexico	261	690
57. <i>Pseudomelatomia pencillata</i> (Carpenter, 1865)	Turrid Shell	Santa Barbara to Magdalena Bay, Baja	262	

RANGE
 Santa Barbara, CA, to Ecuador
 Southern California, along Baja
 West Coast to Gulf of California
 to Mazatlan, Mexico

COMMON NAME
 California Bubble
 Coffee Bean Shell

SCIENTIFIC NAME
 58. Bulla gouldiana Pilsbry, 1893
 59. *Melampus olivaceus Carpenter, 1857

ABBOTT
 pg. 319 pg. 794
 332 846

CLASS PELECYPODA

SCIENTIFIC NAME	COMMON NAME	RANGE	ABBOTT	KEEN
1. <u>Arca pacifica</u> (Sowerby, 1833)	Turkey wing Ark	Baja to Peru	pg. 421	pg. 38
2. * <u>Barbatia reeveana</u> (Orbigny, 1846)	Ark	San Diego, CA, Manuela Lagoon, Baja thru Gulf south to Zorrillos, Peru	422	40
3. <u>Anadara tuberculosa</u> (Sowerby, 1833)	Ark	Ballenas Bay, Baja to Peru	422	44
4. * <u>Anadara multicosata</u> (Sowerby, 1833)	Ark	Newport Bay, CA, outer coast of Baja thru Gulf of California to Panama, Galapagos	422	48
5. <u>Anadara grandis</u> (Broderip & Sowerby, 1829)	Grand Ark	Baja to Peru	423	46
6. <u>Mytilus californianus</u> Conrad, 1837	California Mussel	Aleutians to Socorro Is., Mexico	429	429
7. * <u>Mytilus edulis diegensis</u> Coe, 1946	Mussel	N. California, to Baja California	429	429
8. <u>Modiolus capax</u> (Conrad, 1837)	Horse Mussel	Santa Cruz, CA, to Baja	435	72
9. + <u>Pecten vogdesi</u> Arnold, 1906	Scallop	Punta Eugenia, Baja, thru Gulf to Panama	87	87
10. <u>Argopecten aequisulcatus</u> (Carpenter, 1864)	Scallop	Santa Barbara, CA, to Baja	448	87
11. <u>Argopecten circularis</u> (Sowerby, 1835)	Scallop	Santa Barbara, CA, to Peru	449	87
12. <u>Leptopecten latiauratus</u> (Conrad, 1837)	Wide-eared Scallop	Pt. Reyes, CA, to Gulf of California	447	447
13. <u>Leptopecten camerella</u> (Berry, 1968)	Scallop	Baja California	449	91
14. <u>Lyropecten subnodosus</u> (Sowerby, 1835)	Pacific Lion's Paw	Gulf of California to Peru	449	93
15. <u>Hinnites multirugosus</u> (Gale, 1928)	Giant Rock Scallop	British Columbia to Baja	444	444
16. <u>Pododesmus cepio</u> (Gray, 1850)	False Pacific Jingle	Alaska to Baja California	452	103
17. <u>Anomia peruviana</u> (Orbigny, 1846)	Peruvian Jingle	Monterey, Ca, to Peru	451	101
18. <u>Ostrea palmula</u> carpenter, 1857	Palmate Oyster	Baja California to Ecuador	456	84
19. <u>Ostrea angelica</u> Rochebrune, 1895	Oyster	Gulf of California to Ecuador	456	82
20. <u>Ostrea megodon</u> Hanley, 1846	Megadon Oyster	Baja to Peru	456	84
21. <u>Eplilucina californica</u> (Conrad, 1837)	California Lucine	Crescent City, CA, to Baja	486	486
22. * <u>Diplodonta subquadrata</u> (Carpenter, 1856)	Diplodon	San Ignacio Lagoon, Baja, thru Gulf and south to Galapagos	486	128

SCIENTIFIC NAME	COMMON NAME	RANGE	ABBOTT	KEEN
23. <u>Laevicardium elatum</u> (Sowerby, 1833)	Giant Pacific Egg Cockle	San Pedro, California, to Panama	pg. 486	pg. 160
24. * <u>Laevicardium elenense</u> (Sowerby, 1840)	Egg Cockle	Magdalena Bay, Baja, thru Gulf to Peru	486	160
25. <u>Trachycardium panamense</u> (Sowerby, 1833)	Cockle	Gulf of California, to Costa Rica	484	155
26. <u>Trachycardium quadragerarium</u> (Conrad, 1837)	Giant Pacific Cockle	Santa Barbara, CA, to Baja	483	
27. <u>Macra nasuta</u> Gould, 1851	Gould's Pacific Mactra	San Pedro, CA, to Colombia	488	202
28. <u>Raeta undulata</u> (Gould, 1851)	Pacific Duck Clam	San Pedro, CA, to Peru	492	207
29. <u>Solen rosaceus</u> Carpenter, 1854	Rosy Jackknife Clam	Santa Barbara, CA, to Mazatlan, Mex.	495	261
30. * <u>Tellina modesta</u> (Carpenter, 1864)	Modest Tellin	Alaska to Gulf of California, Central Baja	502	
31. * <u>Tellina simulans</u> C.B. Adams, 1852	Tellin	Scammon's Lagoon, Baja, thru Gulf to Peru	503	219
32. * <u>Tellina bodogensis</u> Hinds, 1845	Bodegas Tellin	British Columbia to Southern Baja	508	
33. <u>Macoma secta</u> (Conrad, 1837)	White San Macoma	Vancouver Is., B.C., to Gulf of Cali- fornia	508	
34. <u>Macoma nasuta</u> (Conrad, 1837)	Bent-Nose Macoma	Alaska to Baja	506	
35. <u>Macoma indentata</u> Carpenter, 1864	Indented Macoma	Vancouver Is., B.C. to Baja	508	229
36. <u>Psammotreta obesa</u> (Deshayes, 1855)	Pacific Grooved Macoma	Santa Barbara, CA, to Ensenada, Baja	508	
37. <u>Donax californicus</u> (Conrad, 1837)	California Donax	Santa Barbara, CA, to Panama	510	236
38. * <u>Donax punctatostratus</u> Hanley, 1843	Donax	San Ignacio Lagoon, Baja, thru Gulf and south to Negritos, Peru	510	239
39. <u>Donax gouldii</u> Dall, 1921	Gould's Donax	San Luis Obispo, CA, to Baja	510	237
40. <u>Cumingia californica</u> Conrad, 1837	California Cumingia	Crescent City, CA, to Baja	515	
41. <u>Sanguinolaria nuttalli</u> (Conrad, 1837)	Mahogany Clam	Bodega Bay, CA, to Baja	511	
42. <u>Semele decisa</u> (Conrad, 1837)	Bark Semele	San Pedro, CA, to Baja	513	
43. * <u>Semele pulchra</u> (Sowerby, 1832)	Semele	Southern California to Ecuador	514	253
44. <u>Tagelus californianus</u> (Conrad, 1837)	California Razor Clam	Monterey, CA, to Baja	516	
45. * <u>Tagelus affinis</u> (C.B. Adams, 1852)	Razor Clam	Gulf of California to Panama	516	246
46. <u>Tagelus subtretes</u> (Conrad, 1837)	Purplish Razor	Morro Bay, CA, to Baja	517	
47. <u>Chione undatella</u> (Sowerby, 1835)	Friiled California Venus	San Pedro, California to Peru	524	185
48. <u>Chione fluctifraga</u> (Sowerby, 1853)	Smooth Pacific Venus	San Pedro, CA, to Gulf of California	524	186
49. <u>Chione californiensis</u> (Sowerby, 1835)	Common California Venus	San Pedro, CA, to Panama	523	183
50. <u>Protothaca lacinata</u> (Carpenter, 1864)	Pacific Littleneck	Aleutians to Baja California	526	
51. <u>Protothaca asperima</u> (Sowerby, 1835)	Littleneck Clam	Gulf of California to Peru	526	193

SCIENTIFIC NAME	COMMON NAME	RANGE	ABBOTT pg.	KEEN
52. <u>Protothaca grata</u> (Say, 1831)	Littleneck Clam	Gulf of California to Peru	526	195
53. * <u>Pitar lupanaria</u> (Lesson, 1830)	Comb Venus	Ballenas Bay, Baja, thru Gulf and south to Negritos, Peru	531	172
54. <u>Tivela stultorum</u> (Mawe, 1823)	Pismo Clam	San Mateo, CA, to northern Baja	529	162
55. <u>Tivela byronensis</u> (Gray, 1838)	Tivela Clam	Baja to Peru	528	176
56. <u>Megapitaria squalida</u> (Sowerby, 1835)	Clam	Baja to Peru	532	
57. <u>Amantis callosa</u> (Conrad, 1837)	Pacific White Venus	Santa Monica, CA, to South Mexico	532	
58. <u>Saxidomus nuttalli</u> (Conrad, 1837)	Washington Clam	Humboldt Bay, CA, to Baja	533	
59. <u>Dosina ponderosa</u> (Gray, 1838)	Disk Shell	Baja California to Peru	533	pg. 178
60. * <u>Rupellaria carditoides</u> (Conrad, 1837)	Hearty Rupellaria	Vancouver, B.C., to Baja California	535	
61. * <u>Cryptomya californica</u> (Conrad, 1837)	California Glass Mya	Alaskan Gulf. to Northern Peru	538	263
62. * <u>Pholas chilensis</u> Molina, 1782	Angel Wing Shell	Gulf of California to Chile	544	275
63. <u>Zirfaea pilsbryi</u> Lowe, 1931	Pacific Rough Piddock	Bering Sea to Baja California	544	
64. <u>Periploma planiusculum</u> Sowerby, 1834	Western Spoon Clam	Point Conception, CA, to Peru	561	293

65. *Atrina sp. indetermined - very worn valve
66. *Chama sp. indetermined - very worn valve

Species marked with asterisk (*) were collected by Katheryn Sheldon on the trip. One species marked with cross (+) was collected by Gene White and has been donated to the HMNS collection. All other specimens were collected by T.E. Pulley and are cataloged at HMNS.

DISTRIBUTION AND RECORDS OF THE MARINE MOLLUSCA IN
THE NORTHWEST GULF OF MEXICO

(A Continuing Monograph)

377. Nuculana (Ledella) bipennis (Dall, 1927).

Leda bipennis Dall, 1927, Proc. U.S.N.M., Vol. 70 (18), p. 1-134.
(See p. 9)

Apparently for the first time illustrated by James (ref. 271), who discussed some material from the Gulf of Mexico. This apparently is a fairly deep water species, but not as deep previous records would one lead to believe. Also occurs in the mudlump fauna. Juveniles of this species are rather flat and more symmetrical than mature specimens identified by James.

Previous records for the Texas faunal province are: 170, (as Nucula Sp. A.) pl. 14, fig. 5, off East Texas; 206, Tex. Conchol., Vol. IX (4), p. 75; 271, discussed on p. 107-109.

Records H.M.N.S.: 13 lots, none alive.

Depth Range: 36-84 fms.

Geographical Range: Apparently restricted to northern and eastern Gulf of Mexico.

Maximum Size: 8.4 mm. (James gives 6.1 mm.).

Eastern Pacific Analogue: Probably Nuculana lucasana Strong and Hertlein, 1937, is quite close. "Cape San Lucas, Baja California, depth 37 to 400 m." Keen, 1971.



Fig. 1 Nuculana bipennis, collected at Stetson Bank, 74 miles SSE of Galveston, Texas, by dredging in 10-50 fms. by T.E. Pulley and Paul McGee in 1963. Size 8 mm. by 5 mm.

Photo by Harold Geis

378. Nuculana (Ledella) spec. indet B.

Although there is a possibility that this very small species is a Yoldiella, I classify it here as a Ledella. It resembles mature specimens of N. bipennis in shape, but is far more inflated, and rather thick shelled and quite a lot smaller. This species was not discussed in reference 271 by James, which is somewhat strange because it is apparently not rare. It is possible that its name should be N. subtumida, a name suggested to me by J. Nyssew-Meyer from the Netherlands.

Previous records for the Texas faunal province are: 206, Tex. Conchol., Vol. IX, p. 76, #694 (as Nuculana sp. B.). Note: this species was reported as Nuculana messanensis Seguenza for the deep shelf assemblage off East Texas pl. 16, fig. 2, in ref. 170. Also ref. 214 reports N. messanensis from the Yucatan Shelf (pl. 10, figs. 1, 2, which probably is this species).

Records H.M.N.S.: 7 lots, none alive.

Depth Range: 50-222 fms.

Geographical Range: Unknown.

Maximum Size: 2.8 mm.

Eastern Pacific Analogue: ?

379. Nuculana hebes (Smith, 1885).

Leda hebes Smith, 1885, Rep. on the Lamellibranchiata, Challenger 1873-1876, 13 (35), p. 234, pl. 19, figs. 7-7a.

Of this medium size Nuculana I am unwilling to assign to a particular subgenus. It is rather smooth, there are fine concentric striae, and is thinner shelled than most other species in the N.W. Gulf of Mexico. The umbo is located rather to the anterior part.

Previous records for the Texas faunal province are: 206, Tex. Conchol., Vol. IX, p. 76, #696, as Nuculana spec. D; 271, discussed on p. 115-117 and figured page 124.

Records H.M.N.S.: 3 lots, not live material.

Depth Range: 67-150 fms.

Geographical Range: Off Louisiana, and in West Indies (Culebra, Cuba).

Maximum Size: 9.7 mm.

Eastern Pacific Analogue: None of the species figured by Keen (1971) appears close.

380. Nuculana (Propeleda) platessa (Dall, 1890).

Leda platessa Dall, 1890, Albatross Rep., p. 256.

This large and slender Nuculana is immediately separated from Nuculana carpenteri Dall, which it closely resembles in shape, by the quite different construction of its chondrophore, which is oblique and slanting. Previous investigators have figured the species as N. carpenteri Dall. (Parker, ref. 175; Rice and Kornicker, ref. 214). Some specimens in the H.M.N.S. collection were kindly identified by Dr. James.

Previous records for the Texas faunal province are: (Apart from those above) 206, Tex. Conchol., Vol. 9, p. 75, #692; 271, discussed on p. 117-119, figure on p. 124.

Records H.M.N.S.: 6 lots, of which 2 contain live collected material.

Depth Range: 110-228 fms., alive 133-228 fms.

Geographical Range: Off Rio de Janeiro (type locality) and off Texas and Louisiana.

Maximum Size: 17.2 mm.

Eastern Pacific Analogue: None.

381. Nuculana (Saccella?) solidula (Smith, 1885).
Leda solidula Smith, 1885, Challenger Rep., p. 233, pl. 19, figs.
6, 6a.

Only a single valve from very deep water is in the H.M.N.S. collection. It agrees in all respects with description and figure by James.

Previous records for the Texas faunal province are: 7, listed for deep water; 271, discussion on p. 122, 125, figure p. 124.

Records H.M.N.S.: 1 single valve.

Depth Range: 1050 fms., due south of Galveston.

Geographical Range: Off Brazil, and Cuba.

Maximum Size: 4.6 mm. (Slightly broken).

Eastern Pacific Analogue: None.

382. Nuculana (Jupiteria?) spec. indet. C.

A single lot of 3 valves from very deep water (900 fms.) off the Mississippi Delta is probably congeneric with one of the small Nuculana species discussed in ref. 271. More material of these species must be collected before a definite opinion about these very small deep water species can be given.

Previous records for the Texas faunal province are: 271, Nucula sp. B, (probably the same species), p. 128-129.

Records H.M.N.S.: 1 lot, none alive.

Depth Range: +900 fms., off Mississippi Delta in mud.

Geographical Range: Unknown.

Maximum Size: 2.6 mm.

Eastern Pacific Analogue: None.

383. Nuculana (Jupiteria?) spec. indet. D.

A single lot of 2 valves represents a much shallower living species in this group (60 fms.). It is unknown to us, and more material is needed for better evaluation.

Previous records for the Texas faunal province are: None.

Records H.M.N.S.: 1 lot, none alive.

Depth Range: 60 fms.

Geographical Range: Unknown.

Maximum Size: 2.0 mm.

Eastern Pacific Analogue: None.

384. Yoldiella spec. indet. A.

A single small valve is the only material of this minute species in H.M.N.S. collection. It is a rather rounded thin valve, obtained in 720 fms. off the Mississippi Delta. More material is needed for a proper evaluation. James (ref. 271) cites three species in this genus for the Gulf of Mexico.

Previous records for the Texas faunal province are: None.

Depth Range: 720 fms., in mud.

Geographical Range: Unknown.

Maximum Size: 2.3 mm.

Eastern Pacific Analogue: Unknown.

Remarks:

Other species reported are:

Nuculana semen (Smith, 1885) in ref. 271, p. 119-122.

Prestigloia nitens (Jeffreys, 1876) in ref. 271, p. 134-135.

Yoldiella mirmidina (Dautzenberg and Fischer, 1897) in ref. 271, p. 141-142.

Yoldiella pachia Verrill and Bush, 1898, in ref. 271, p. 142-144.

Yoldiella quadrangularis (Dall, 1881), p. 145-149.

Family Malletiidae H. and A. Adams, 1858.

Small deep water taxodont bivalves, without chondrophore. In the N.W. Gulf of Mexico the genera Tindaria and Saturnia.

Sources: B.M. James, Ph.D. Thesis, Tex. A&M, 1972.

Genus Tindaria Bellardi, 1875.

For this family rather thick shelled, and inflated.

385. Tindaria amabilis (Dall, 1889).

Malletia amabilis Dall, 1889, Blake Report, p. 438.

This is probably a widespread deep water species, which is rather large among the taxodont bivalves of its depth range. It has an inflated valve, lengthened posteriorly, sometimes with a heavy dark yellow periostracum, often the middle of the disk is smoother, but concentric undulations are present near the ventral margin.

Previous records for the Texas faunal province are: 206, (as Nuculana spec. C), Tex. Conchol., Vol. IX, p. 76, #695; 271, discussion on pages 83-88.

Records H.M.N.S.: 5 lots of which 1 contains live collected material.

Depth Range: 50-228 fms.; alive: 140 fms.

Geographical Range: Gulf of Mexico and West Indies (Abbott, 1974).

Maximum Size: 7.7 mm.

Eastern Pacific Analogue: Not determined, but some of the species figured by Keen (1971) appear similar.

Genus Tindariopsis Verrill and Bush, 1897.

Abbott (1974) uses the genus Saturnia Seguenza, 1877, but according to James (1972) this is a junior homonym of Saturnia Sebrach, 1802, a lepidopterous insect.

The precise characters of this genus are not clear to me, but James figures precisely the species here under discussion as Tindariopsis.

386. Tindariopsis aeolata (Dall, 1890).

Malletia (Tindaria?) aeolata Dall, 1890, Proc. U.S.N.M., 12, p. 252. (Albatross Rep.).

The single valve of this species was obtained in very deep water (1050 fms.) due south of Galveston. It conforms very well with description and figure by James (ref. 271).

Previous records for the Texas faunal province are: 271, discussion on p. 97-98.

Records H.M.N.S.: A single lot of a single valve.

Depth Range: 1050 fms.

Geographical Range: Gulf of Mexico and N.E. of Tobago.

Maximum Size: 4.3 mm. (James gives 4.8 mm. for the material he studied.)

Eastern Pacific Analogue: Not in Eastern Pacific.

Genus Neilonella Dall, 1881.

Placed by the Treatise in synonym with Saturnia Seguenza, 1877, but here used as a separate genus, following James, 1972, although the generic characters are not clear to me. Only a single unidentified species.

387. Neilonella spec. indet. A.

Only a single lot of this species is present in the H.M.N.S. collection from very deep water. It is probable that it is the same as Neilonella spec. A of James. More material is needed for certain identification.

Previous records for the Texas faunal province are: 271, discussion on p. 76-77.

Records H.M.N.S.: 1 lot, no live material.

Depth Range: 1050 fms. due south of Galveston.

Geographical Range: Unknown.

Maximum Size: 4.0 mm.

Eastern Pacific Analogue: Unknown.

388. Unknown genus.

In Vol. XI, (2) (page numbers omitted) I published 6 figures of what is probably the smallest bivalve species in the H.M.N.S. collection. The lack of a well defined resilifer puts this species in the Mallettiidae. Apart from a specimen from the N.W. Gulf of Mexico also a lot from the Florida Straits is in the H.M.N.S. collection.

Previous records for the Texas faunal province are: 206, Tex. Conchol., Vol. XI, (2), Dec., 1974.

Records H.M.N.S.: 2 lots, (only one from N.W. Gulf of Mexico), none alive.

Depth Range: 450-558 fms.

Geographical Range: Texas offshore, Florida Straits.

Maximum Size: .5 mm.

Eastern Pacific Analogue: None.

Remarks:

Other species reported are:

Tindariopsis agathida (Dall, 180) in ref. 271; the same species probably also as Leda pusio Philippi (Dall, not Philippi, 1844) in ref. 7.

Also:

Malletia species A in ref. 271.

Neilo bermudensis (Haas, 1949) in ref. 271.

Neilo sp. A in ref. 271.

Neilo sp. B in ref. 271.

Neilonella guineensis (Thiele, 1931) in ref. 271.

Neilonella sp. B, in ref. 271.

Tindariasp. A in ref. 271.

SUPERFAMILY SOLEMYACEA

Family SOLEMYCIDAE H. and A. Adams, 1857.

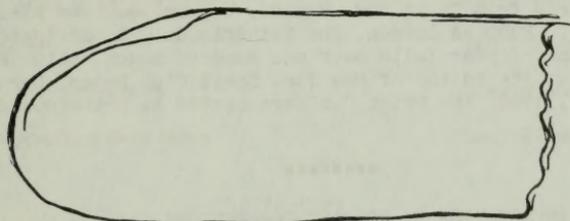
Edentulous small bivalves, but in soft parts related to Nuculidae and Nuculanidae.

Genus Solemya Lamarck, 1818.

Fragile elongate, without teeth. The scarce material in the H.M.N.S. collection is not well identifiable.

389. Solemya spec. indet. A.

2 fragments of a small species probably S. occidentalis Deshayes, 1857, were obtained in 140 fms. depth, in mud.



On the anterior margin there is in both available valves a slight fold. There appear to be some radial striae radiating from the umbo.

There is an unconfirmed record of a live specimen of Solemya dredged several years ago off Port Aransas, but I have not seen the specimen. More material needs to be collected for a proper evaluation.

Previous records for the Texas faunal province are: 7, listed for deep water.

Records H.M.N.S.: A single lot of 2 broken valves.

Depth Range: 140 fms., mud.

Geographical range: Not determined.

Maximum Size. 4 mm. (broken).

Eastern Pacific Analogue: Not determined.

FROM THE EDITOR:

(To be continued)

The survey pelecypods are being catalogued as part of the growing mollusk collection of the Houston Museum of Natural Science. Researchers are invited to visit and use the collection at H.M.N.S. Contact Dr. T.E. Pulley, Director of H.M.N.S., P. O. Box 8175, Houston, Tx., or at the museum, 1 Hermann Park Circle, Hermann Park, Texas.

PUBLICATION ON RECENT CONIDAE REPORTED

From the New York Shell Club Notes, No. 262, May, 1980, we have learned about a series of publications on recent Conidae which would be of interest to serious cone collectors.

The Dutch Malacological Society has started in Vol. 43 (1979) of *Basteria* a series of publications on recent Conidae. The authors are Dr. H.E. Coomans, R.G. Moolenbeek and E. Wils, malacologists at the Zoological Museum Amsterdam.

For this revision the authors have studied the original descriptions, the type material (when available), and they have consulted museum and private collections in the Netherlands and abroad. The series is entitled "Alphabetical revision of the (sub)species in recent Conidae" and will be continued for a number of years. Black and white photographs of shells and distribution maps are supplied.

Conus abbas to Conus albuquerquei were published in *Basteria* Vol. 43.

Conus albus to Conus antillarum will be published in the first issue of *Basteria* Vol. 44 (1980). This issue will have 6 distribution maps and 60 photographs of Conus shells.

Basteria may be ordered from Dr. A.S.H. Breure, Rijksmuseum van Natuurlijke Historie, P. O. Box 9517, 2300 RA Leiden, The Netherlands. Subscription price for one volume, in two issues per year (with over one hundred pages, illustrated), is 42,50 Dutch Guilders. The Editor of New York Shell Club Notes, Dorothy Raeihle, reported as of April, 1980, the Dutch Guilders listed as price would equal approximately U.S. \$19.13.

AMU COMMITTEE SEEKS INFORMATION ON DORMANT COLLECTIONS

The AMU Council of Systematic Malacologists has established a "Committee for Relocating Unused and Unwanted Malacological Collections" (RMC Committee). The main functions of the ad hoc committee are: (1) to investigate the status of dormant collections, both private and institutional, and (2) to follow national guidelines for malacological collections to find the best repository for the unwanted collections.

Your help in letting both private and institutional keepers of the dormant collection know of our activity is greatly appreciated. Furthermore, please notify me if you know of any dormant malacological collections at the following address:

Shi-Kuei Wu, Chairman RMC Committee
Museum - Box 218
University of Colorado
Boulder, CO 80309

DUES SHOULD BE MAILED TO THE TREASURER NOW

We make up a membership roster in the Fall and need to count you in as a member. Send Jim Sartor your dues and please do not forget to indicate if you have a new address. (5606 Duxbury, Houston, Texas 77074)

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