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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.

SIGNIFICANT TEXAS NAIAD RECORDS

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In the process of reviewing unionid collections in several museums as part of a survey of the freshwater mussels of Texas, I have encountered specimens which are of distributional significance. Some of these notable records are from recent field collections by various workers.

Anodonta suborbiculata Say, 1831 was not reported from Texas by Strecker (1931) although he stated that it "is likely to occur in eastern Texas" (Strecker 1931:8). The only published record from Texas known to me is Wards Prairie Lake, near Romayer, Liberty County in the Trinity River system (Johnson 1980: 114, 159). The specimen is in the collection of the Museum of Comparative Zoology, Harvard University.

Recently, I have received reports of the species from various Texas localities in several drainages as follows: BRAZOS RIVER, Rock Creek, northwest end of Possum Kingdom Reservoir, Palo Pinto Co., 27 September 1980 (fide Charles E. Fontanier); TRINITY RIVER, Lake Livingston, 6.5 km south of Glendale at end of FM 3188; Trinity Co., August 1980 (fide Charles M. Mather).

Note should be made of the report of A. suborbiculata from Caddo Lake by Vaughan (1893). These specimens apparently were from the Louisiana part of Caddo Lake where "a few small specimens are found," but locality details were not given. A. suborbiculata may well be a native member of the Texas freshwater clam fauna.

The sudden occurrence of multiple collections after a period of only a single collection is significant. Fuller (1980:86) has remarked on a similar expansion in the upper Mississippi River. Occurrence of several scattered populations indicates the likelihood of introduction via glochidia on fish stock. Suitable fish host for A. suborbiculata is unknown (see Fuller 1974). Introduction of Anodonta grandis Say 1829 into an artificial impoundment via fish stock in the Panhandle portion of Texas was reported by Neck (1982). The clustering of reports of A. suborbiculata within a relatively short time period is probably the result of very low lake levels during the extreme drought conditions of 1980.

Strophitus undulatus Say, 1816 appears to be distributed over a large portion of Texas but populations are generally widely separated and always low-density. Strecker (1931:13-14, 70) reported several localities from the following river drainage basins: Red, Sabine, San Jacinto, Trinity and Colorado. The only river in which he found S. undulatus abundant was the San Jacinto.

Specimens of S. undulatus from the Guadalupe River drainage have been located in the collection of Trinity University, San Antonio. These individuals were collected by H.D. Murray on 11 September 1965, in the San Marcos River at Palmetto State Park, Gonzales Co.

Lasmigona complanata (Barnes, 1823) was not reported from Texas by Strecker (1931). Read (1954:45) reported Lasmigona costata (Rafinesque, 1820) from the Elm Fork of the Trinity River, Dallas Co., where it was rare on gravel substrate.

Present in the Dallas Museum of Natural History (DMNH 0355) is one pair of valves referable to L. complanata, because of the relatively smooth shell, roundly-oval shape (rather than elongate) and presence of posterior dorsal wing (see Murray and Leonard 1962; Parmalee 1967; Burch 1975). These valves were collected in Lake Lewisville, Denton Co., in August 1969, by Jerry M. Flook. Interestingly, no mention was made of L. complanata in his survey of metazoan parasites of the unionids of Lake Lewisville (Flook 1972). Until Read's specimens can be located (if ever) his record should be referred to L. complanata.

The Trinity University collection (lot #564) contains one old left valve of L. complanta collected on 11 September 1965 by H.D. Murray in the San Marcos River at Palmetto State Park, Gonzales Co.

Elliptio dilatata(Rafinesque, 1820) was not reported by Strecker (1931:7) from Texas, although he did note that "Mr. Frierson suggests that as (this species is) listed by Lea from the Red and Verdigris rivers, they are likely to occur in the Red River of Texas." I know of no such records, and E. dilatata has not been found in Lake Texoma of the Red River (White and White 1977).

The Trinity University collection (lot #565) has one right valve collected by H.D. Murray on 11 September 1965 in the San Marcos River at Palmetto State Park, Gonzales Co.

Acknowledgements. I appreciate the assistance of C.E. Fontanier, C.M. Mather and H.D. Murray in compiling these records.

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NEW PUBLICATIONS MARKETED LOCALLY

The Houston Gem and Mineral Society has published No. 2 in its Texas Paletontology Series. "Texas Cretaceous Bivalves and Localities" is available for $8.25 plus sales tax (Texas residents add 5% and Houston and MTA add 6%) plus postage and handling $1.00 per volume.

Houston Conchology Society members who went on the field trips to collect fossils in Austin will want this volume which answers the nomenclatural problems of shells collected, especially the oysters.

The TPS Publication No. 1, 1977, "Fossils and Localities of the Claiborne Group (Eocene) of Texas" has been reprinted in 1982 and is available for $6.60 (plus sales tax as above and postage and handling charge of $1.00 per volume).

All orders must be prepaid and check and money order should be made to Paleontology Section, HGMS, and mailed to Paleontology Section HGMS, 7602 Jackwood, Houston, Texas 77074. Please be sure to include your name, address, city, state and zip for delivery.

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Coastal Texas: Water, Land, and Wildlife with photographs and text by John L. Tveten has been published by Texas A&M University Press and is number five of the Louise Lindsey Merrick Texas Environment Series. Cost is $29.95 and books are available at the sales desk of the Houston Museum of Natural Science as well as local bookstores. It is divided into three sections ---the beach, the dunes and the marshes. There are 126 marvelous color illustrations, a good coffee table book for the lover of our coast.

SEARCH AND SEIZURE

By Constance Boone

Rather plaintively I report a paper reviewing the members of the Littorina ziczac complex which appeared in The Veliger in July, 1982 because it is titled "Western Atlantic Species in Nodilittorina" and as far as I can see it simply ignores the Gulf of Mexico.

Besides that, the authors have stated that the specific name we have applied to our common little ziczac Littorina is their designation for a species they consider to be limited to distribution in South America--Brazil and Uruguay.

What then is ours?

Where is the Gulf of Mexico?

Klaus Bandel and Dietrich Kadolsky present a comprehensive report on "Comparative Morphology and its Functional, Ecological, Phylogenetic and Taxonomic Implications" of the Western Atlantic species of Nodilittorina in this paper consisting of 42 pages of review, reassignment, new species, with maps and tables. They place spirally sculptured species which we have known as Littorina and nodulose species we have known as Tectarius and Echininus in Nodilittorina on the basis of biological concepts.

It is understandable that each new study of animals reveals new information. The early describers generally used shell characteristics to separate genera and species. In this paper, some of the species in the ziczac complex may be determined only by radulae studies.

Since I have no background to review this kind of paper, I simply want to bring this new information to your attention and alert you to the fact that once again we do not know exactly what specific name we should apply to our common Littorina.

I do not see any discussion of a littorinid assigned to Nodilittorina by the authors from the Gulf of Mexico or even from the Yucatan area. The discussion is about species from lower Florida, Caribbean and South America but only as far north as Costa Rica in Central America.

This seems so strange since during the years I have worked with several researchers, supplying many, many specimens live and in alcohol of Littorina species from the Texas coast and also from the Yucatan. Several researchers came to Texas to collect with me. The conclusion always was here that we had only one in the ziczac complex that really was established and living here. We do not have the nodulose littorinids in Texas and Louisiana, but I collected these in the Yucatan. Occasionally we have had reports that we verified of rafting in of true ziczac, but the ones we have living on our jetties, concrete walls, piers, etc., seem to be all one species. Perhaps it isn't Nodilittorina lineolata (using the new designation in Veliger) but as of today I do not know what anyone thinks our species is. Maybe it will turn out to be the eighth member of the ziczac complex?

Through the years I have worked to try to establish the range of what we have called Littorina lineolata in the Northwest Gulf of Mexico. As far as I am able to determine our species is also in the Yucatan (the Caribbean islands of Isla Mujeres, Can Cun, and Cozumel, using the criterion I am familiar with and knowing nothing of the animal) and then certainly from

Brownsville around to Holly Beach in Louisiana.

American Seashells (Abbott, 1974) lists two species of the ziczac complex in Texas, lineolata and angustior. The latter does not prove to be in living populations recent workers and researchers have collected here. I did find L. angustior (on shell characteristics only) in the Yucatan and also L. ziczac. One researcher affirmed this some years ago.

Many specimens have been sent to the major Eastern museums from here. I cannot understand why the authors did not have knowledge of them.

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At the meeting of the American Malacological Union this summer at New Orleans, La., I was told something else about a family of shells I like to collect. Everyone knows that I have been trying to study Texas Epitoniums. There is a crying need for work to be done on the species appearing on our shores. When I have been asked to identify the specimens club members and others offer me, I have always qualified designations with some statement to the effect that it was the best I could do and given with understanding the literature and some consultation with the experts. Through the years I have presented museums with lots from our shores. I would talk with researchers and discuss why I thought such a shell was such a species and get a kind of agreement but it was nothing absolute. No one qualified has undertaken the task of studying our Epitoniums in recent years. There has been no animal study certainly, no concrete habitat study even. About all I have known to do is to supply the researchers. Even that does not do much good at this time. Much material from this area has been put in the museums, I believe. It will take a malacologist interested in our fauna and with grant money to pursue his or her interest to get better information. We will not get good answers until that happens.

The constant discussion on names to use is a mark of the amateur, I am often told, and I am learning to be less interested in what the specific name is and am trying to study more about habitats and animals. I confess that I still pursue the game of names. When the light dawns on reading some new report that places a name on one of my unknowns I am so very pleased. At least for the moment I have solved a mystery. It is a changing proposition. Tomorrow the genus may be changed. Tomorrow the family name may be changed also. The specific name may be thrown out. Researchers learn something new everyday. Maybe I can learn something new too. I learn that there may not be general agreement on a name. I learn that more work on animal studies needs to be completed. I learn to be content with knowing more about a species by getting out and collecting it myself. My observations can help solve problems. So can yours. Get in the act with me. Write it up and we'll have copy for Texas Conchologist.

You see------now I have been told that at least one of the species we thought we had figured out is not that species, but I can't tell you what it is! Dr. Robert Robertson, researcher at the Academy of Natural Sciences of Philadelphia, has been studying Epitonium albidum (Orbigny, 1842) in the West Indies. At AMU this summer he made another report on this animal. In general conversation with me he said that he feels that what we have here is

not Epitonium albidum and that what we have occurs also in the Carolinas. That is all I can report at this time. We have always known that our specimens did not have bladelike costae, but we thought other things seemed to compare favorably. We have not been able to observe these Epitoniums in natural habitat. We do collect some at the pass areas and on sandy beaches, but we do think they arrive there from offshore. We have yet to see them on anemones. So from now on, I guess I'll list this as "albidum" or leave the specific name blank. Probably a lot of other Texas species should be treated similarly.

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In cataloging shells at the Houston Museum of Natural Science I set my standards for information added to the book to include the correct author and date for each species I catalog.

For some years, the shell collector who has entered shell shows has been told that complete and correct data include adding the author and date for each specimen exhibited. Sometimes points are awarded or subtracted by judges on this data. I've hunted frantically for dates through the years to add to the authors I could find easier.

As long as I concerned myself with shells from North America and the Panamic Province I had two classics, American Seashells by Abbott and Seashells of Tropical West America by Keen to give me the authors and dates I needed. However, once I branched into shells from other shores, I found difficulties in getting full data. Frequently I could find the author but many popular publications omit the dates. I also had trouble knowing if the name I had was the original one as there was no consistency in publications on using brackets if genera had been changed. Epitonium angulatum (Say, 1830) is correct, for instance. It was originally described as Scalaria clathrus angulata Say, 1830.

At HMNS I started cataloging some of the worldwide shells given by Sam and Fannie Miron recently, and I have had quite a time finding some dates. Most of the major families have been reported in separate books in recent years so cones, olives, volutes, Murex, cowries, etc., are easy to find, unless they are new species. Shells like Calliostoma and most of the bivalves are hard to find.

Dr. T. E. Pulley has been most helpful in guiding me through the books to find authors and dates. He has pointed out that it is easier to find authors and dates if the species is an old one. Sherborn's Index Animalium from 1758-1850 is a wonderful index of specific names. The Zoological Record of Mollusca was started in 1864 by the Zoological Society of London and is done by subject, author, geographical and systematic indexing and is much harder for me to use than Index Animalium, but it is still continued today and you can find authors and dates in time. The period from 1850 to 1870 was completed by Florence A. Ruhoff and issued as Smithsonian Contributions to Zoology #294. It is a continuation of Sherborn's index system and also includes a bibliography of molluscan literature written

during the period as well as a taxonomic list alphabetically arranged by genera.

Solving some of the puzzles is not really easy for me yet, but I am learning to find the authors and dates. I am still stumped on some of the recent names, especially those coming from Japan, usually the fascinating new shells brought up in nets, and some of the new species I learn about but know nothing of author or where the shell was named. Some helpful hints come from dealer's lists. Abbott's and Dance's new Compendium of Seashells, due out before Christmas, promises to list 4,000 shells, all with authors and dates and major synonyms. This will be a big help.

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This is a CORRECTION NOTE.

The April, 1982, issue of Texas Conchologist had a report in Search and Seizure concerning a collection in the bay at Port O'Connor, Texas. I said that Ostrea permolis was everywhere on old shells, etc. I certainly knew better and wrote permolis by mistake. I meant Ostrea equestris.

This gives me the chance to point out to you that this issue of Texas Conchologist carries an outline of how to supply oysters to Dr. Harold Harry for his research program on worldwide oysters. Several members have been involved in bringing back live and alcoholic specimens from travels, and Dr. Harry has been most appreciative of their efforts.

He would be pleased to receive some oysters, including true Ostrea permolis, from divers going to reefs, wrecks, etc., in the Gulf of Mexico.

Dr. Harry's research began when he and his wife vacationed at Puerto Vallarta on the Mexican West Coast. He found that oysters were being sold on the street and questioned the vendors about the source of the shells. He also collected four different species and brought them home for study. Later he researched at the Smithsonian and from time to time works on the collections there for the Smithsonian. Now he has undertaken a worldwide review and is busy acquiring oysters from many sources. Right in the middle of the Falklands war, he received oysters from Argentina brought in by plane to Seattle and mailed to him from there. On my trip to West Australia last spring I was labelled "Connie Oyster" because I kept asking for locations to collect live oysters. We were cruising down the Swan River and I saw oyster bars all along the river at Perth. I found out the oysters were imported from Sydney because the natives of Perth don't think much of their local small oysters. I finally got my fill of oysters at Weld Island up the coast as it turned out to be mostly an island of oysters. (We did not eat them!)

To get back to my goof an equestris, I point out that it is impossible to know if you have this species unless you examine the inside of the shells. Abbott's figure of equestris will explain. See page 455 of the 1974 edition of American Seashells. In our bay areas sometimes young Crassostrea virginica

and Ostrea equestris live together on old shells or cement slabs, etc. You have to open the shells to know the species.

As far as I know, Ostrea permolis only lives offshore today in our area. The Northwest Gulf Mollusk Population Survey material at the Houston Museum of Natural Science includes only a single valve of permolis taken from sponge dredged off Sabine Pass, Texas. The museum does have some of the large old valves from the Port Aransas, Texas area that may be fossil. Dr. Pulley pointed out that some of the valves taken in the dredge in the channel at Port Aransas on one of our trips on the University of Texas Marine Institute boat were this species. The only ones I have from the Gulf of Mexico that were live came in on sponge dredged by a shrimper off Freeport, Texas, and on a piece of coral dredged off Brownsville, Texas.

SHELL COLLECTING IN FLORIDA STATE PARKS By Lucy Clampit

While Helen Eberspacher was visiting the state park in Port St. Joe, Florida in April, she was informed by a park ranger that she should not be collecting shells containing live animals. The park brochure does say that animal life in the park is protected. Since many of us have visited and recommend the park as a good shell collecting area, I felt this should be investigated.

The reply that I received from the Florida Department of Natural Resources contained the following information which pertains to all state parks:

1. Collecting of small quantities of sea shells is permitted, but the state asks that only shells with no living animal in them be removed from the park.
2. Scallops may be collected for food.
3. Under no circumstances are queen conchs and coral to be collected.
4. A permit is required for collecting land and tree snails.

The bay at Port St. Joe is an excellent collecting area, and is accessible in locations other than the park. Regardless of where we collect, we should always practice conservation. Otherwise, we will find more places closed to collecting.

DIRECTIONS FOR COLLECTING AND SHIPPING OYSTERS

A few true oysters are obtained by dredging, but most species live intertidally or in shallow (to 30 meters) depth. The latter are best removed from their attachment with a genuine "oyster knife" used by commercial oyster harvesters. But a strong bladed linoleum knife, or even a sharpened screw driver or similar tool will suffice.

Live oysters for later anatomical study should be put directly into 10% formalin or 70% alcohol (ethyl or isopropyl) soon after they are collected. To ship them, specimens should be wrapped in a small amount of cotton or paper towel wet with the preservative, and placed in a strong plastic bag. The wrapping protects the delicate sculpture, especially the marginal area, and also keeps the specimens wet. All excess fluid should be poured off, only enough left to keep the specimens moist.

A label, written in soft pencil or waterproof ink on a good grade of paper, should have date and locality of the collection, the name of the collector, and pertinent data about the habitat (depth, substrate, etc). The label is put inside the bag, and the latter is securely tied to prevent leaking (Zip-lock bags are useful). To ship, place the bags in a strong cardboard box, with an excess of absorbent packing material, such as crumpled newspaper. The packing will hold any fluid which leaks from the sacks and prevent damage to the package. Wrap the package and address it.
Send by air mail to:

Harold W. Harry
4612 Evergreen Street
Bellaire, Texas
77401
U.S.A.

Identification of the specimens will be furnished the sender, and all specimens will be returned if that is desired. Specimens which I am allowed to keep will ultimately be given to the U.S. National Museum of Natural History, Washington, D.C., with data acknowledging the collector.

If the amount is agreed upon before shipping, I will pay a reasonable price for material which I especially need. Specimens need not be of "superior" quality, indeed, ones showing variation in size, form, etc, are useful, and often specimens which are broken in removing them from the substrate are very useful. Fossil material, and even dead shells, are welcome.

Your consideration will be much appreciated.

DISTRIBUTION AND RECORDS OF THE MARINE MOLLUSCA IN
THE NORTHWEST GULF OF MEXICO
(A Continuing Monograph)

PART II: GASTROPODA

Family CYMATIIDAE (Continued)

Genus Cymatium Roding, 1798

12. Cymatium pileare (Linne,1758)

In Texas offshore waters this is a very confusing species because there are two separable forms living on the coral reefs. The differences are slight, but nevertheless clearly recognizable. One form is of a darker more purplish brown than the other, is more slender and somewhat more finely sculptured. In general, it is somewhat more fusiform. The other form is more orange brown in color, its sculpture is rougher and it has stronger knobs. Both forms occur mixed on the Texas offshore coral reefs. In the Survey Collection we have separated them both in accordance with Clench and Turner's treatment in Johnsonia, Volume 3, No. 36. We have considered them to be the same species. The dark form is the original pileare. The lighter, more orange form with rougher sculpture was originally described as C. aquatile Reeve. As far as I know aquatile is only known from the Indo Pacific (Philippines). A fairly close illustration of these two forms can be found in Eisenberg's Guide to Sea Shells. Unfortunately, however, on this plate the legends of Figures 15 and 15A got switched, so that Figure 15 is aquatile Reeve and Figure 15A must be pileare. Further information about pileare can be found in Dodge, 1957, pages 117-120. Whether both forms which can be easily distinguished should be named differently we cannot decide on the basis of our material. Also Reeve 1844, Plate 7, Figures 23 and 24 gives a more or less adequate illustration of the difference between the two forms. This species is also figured by Lipka 1974, p. 176, figs. 37, 38. Although a few specimens of this species have been collected on South Texas beaches, no material from this source is present in the HMNS Survey Collection. In our collection is present a beautiful protoconch with the beginning of the calcareous shell closely resembling the socalled Dissentoma prima of Pilsbry. Laursen 1981 discussed other juvenile material.

Records HMNS Survey Collection:
Dark and slender form: 7 lots, of which 3 contain live collected material; all except one lot comes from the offshore coral reefs.
Depth range: 6 lots 40-90 feet, 1 lot 40-50 feet, 8 miles south of Freeport.
Maximum size in HMNS Survey Collection: 73 mm.
Records HMNS Survey Collection for coarse, orange forms: 5 lots, 1 containing live collected material.
Depth range: 50-90 feet.
Maximum size in HMNS Survey Collection: 70 mm.
Geographical range: South Carolina to Texas; Brazil; Bermuda; Also in Indo Pacific.

13. Cymatium nicobaricum (Roding, 1798)

This species, formerly known as chlorostomum, is fairly common on the offshore reefs where a fair number of live specimens were collected. Texas material is often, even when alive, rather corroded and the colors are somewhat drab. Apparently, in Texas, the species sometimes attains an unusually large size.

Records HMNS Survey Collection: 12 lots of which 5 contain live collected material.
Depth range: 40-90 feet.
Geographical range: Southeast Florida to Brazil; Bermuda; Also in Indo Pacific.
Maximum size in HMNS Survey Collection: 77 mm.

14. Cymatium muricinum (Roding, 1798)

This smaller species is also known as C. tuberosum Lamarck. It occurs like the previous one, in fair numbers on offshore coral reefs and is easily recognized by its backward-pointing siphonal canal, rather coarse sculpturing and extensive parietal shield.

Records HMNS Survey Collection: 3 lots all containing live collected material.
Depth range: 50-90 feet.
Geographical range: Southeast Florida, West Indies to Brazil, Bermuda, Also Indo Pacific.
Maximum size in HMNS Survey Collection: 48 mm.

15. Cymatium cingulatum (Lamarck, 1822)

This species so far reported as C. poulsoni Morch, which is a synonym, is fairly common offshore the South Texas Coast. Beach material can occasionally be found on the beaches of St. Joseph, Mustang and Padre Island. It is rarer east of Matagorda but in the Survey Collection there is material from South of Freeport and from Stetson Bank. The species is easily recognized by its spiral sculpture, thinner shell and wide mouth. The species has not been taken on the coral reefs.

Records HMNS Survey Collection: 6 lots, no live material.
Depth range: 0-30 fms.
Geographical range: Mexico, Texas to North Carolina, Brazil, Bermuda.
Maximum size in HMNS Survey Collection: 57 mm.

16. Cymatium parthenopeum (von Salis, 1793)

This is a relatively uncommon species off the Texas coast. There are some live collected juvenile shells in the Collection which are remarkable by their golden brown and hairy appearance. It should be noted especially that as the previous species it is not taken on the coral reefs, but derives from Stetson Bank (shale) and a similar bank off Louisiana and various outcrops on the sea bottom. It may also be mentioned here that beautiful fresh material has been collected on Mexican beaches 70 miles south of The Texas border.

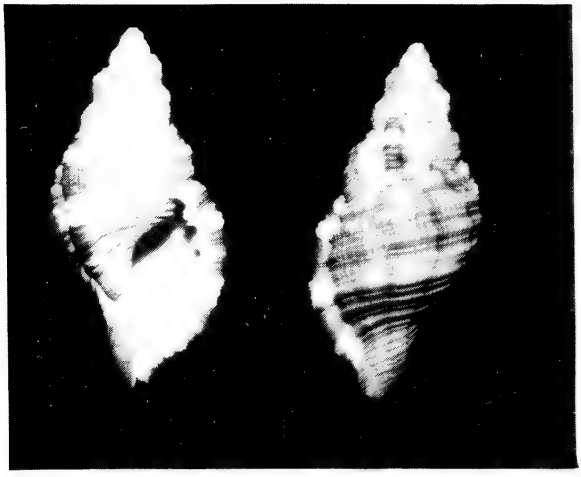

Fig. 1 Cymatium pileare (Linne, 1758) collected at Three Hickey Rock, shale dome 98½ miles SSE of Cameron, La. Collected by divers from a USS destroyer trip helping to get material for the Northwest Gulf Mollusk Population Survey, 50-60 feet. July 9, 1972.

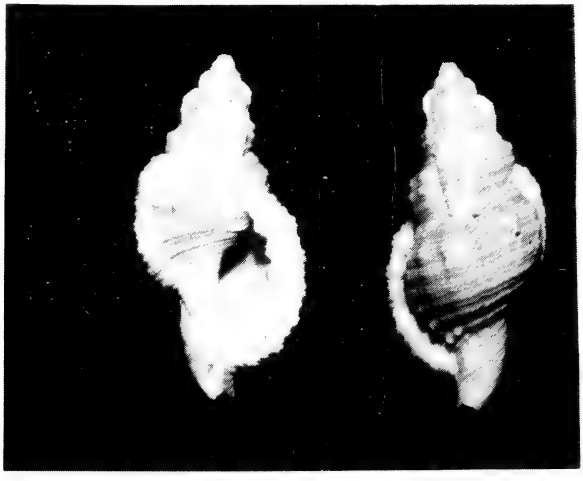

Fig. 2 Cymatium pileare (aquatile form) collected at Stetson Bank by divers from the USS Ault August, 1971. This miocene shale outcrop was at 70-90 ft. depth and is 74 miles SSE of Galveston, Texas.

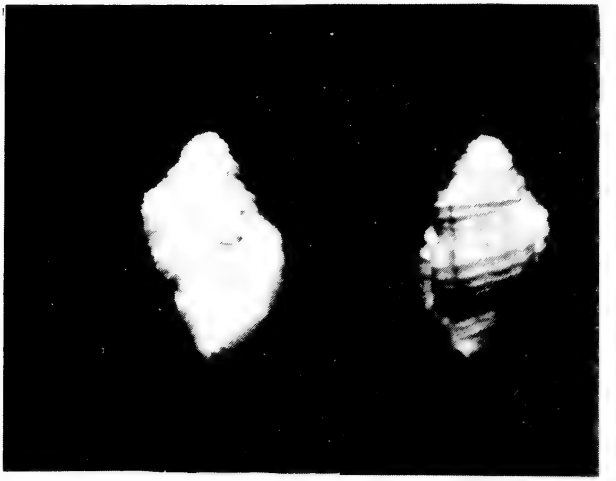

Fig. 3 Cymatium rubeculum occidentale Clench and Turner, 1947 was collected by divers from the USS Haynsworth from the "18 fathom lump" at 180-185 ft. This calcareous algal bio-hermal lump is 114 miles SSE of Cameron, La. Collection was made August 9, 1969.

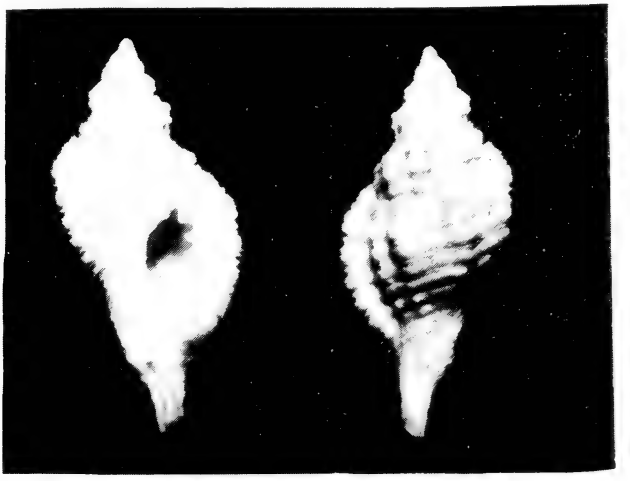

Fig. 4 Cymatium vespaceum (Lamarck, 1822) was collected by divers on a destroyer trip to Claypile Shale Dome some 79 miles SE of Galveston, Texas at 100 ft., July 9, 1972.

Photos by Constance E. Boone

Records HMNS Survey Collection: 6 lots of which 3 contain live collected material.
Depth range: 70-185 feet.
Geographical range: Texas to North Carolina, Brazil, Bermuda, Also in Indo Pacific.
Maximum size in HMNS Survey Collection: 83 mm.

17. Cymatium krebsi Morch, 1877

Apparently a rare species off the Texas coast. In the Survey Collection are 4 lots each of a single specimen, one collected alive. Three of these lots derive from shale outcrops - not from the coral or algal environment - and one comes from a shelly bottom at 20 fms. south of Galveston. Our material agrees closely with the discussion of Clench and Turner in Johnsonia; the color is whitish and indeed two larger collumellar lamellae are present in the mouth. Laursen 1981 has identified a single juvenile fragment from a shale uplift off Louisiana as this species.

Records HMNS Survey Collection: 4 lots, 1 alive.
Depth range: 17-40 fms., alive at 17 fms.
Geographical range: Florida, North Carolina, Caribbean
Maximum size in HMNS Survey Collection: 48 mm.

18. Cymatium vespaceum (Lamarck, 1822)

There is only scant material of this small species present in the Survey Collection. Only three small lots are present, none from the coral reefs, but one from a shelly bottom, another from a shale uplift, and a third lot comes from the algal reef.

Records HMNS Survey Collection: 3 lots, no live material.
Depth range: 16-30 fms.
Geographical range: North Carolina to West Indies, Brazil and Bermuda.
Maximum size in HMNS Survey Collection: 22 mm.

19. Cymatium rubeculum occidentale Clench and Turner, 1947

Three lots of this unusual species were obtained, one alive from the algal reef and the others dead material from Stetson Bank. The identification of some heavily encrusted shells from the algal reef is not always certain because their size appears to be on the large side for this species (36 mm).

Records HMNS Survey Collection: 3 lots, one containing live collected material.
Depth range: 15-30 fms.
Geographical range: Southeast Florida; West Indies, Brazil
Maximum size in HMNS Collection: 36 mm.

References Used:

Reeve, L. 1844 Conchologica Iconica, Vol. 2, Plate 7, 1 Triton See figures 23 and 24.
Eisenberg, J. M. 1981 A Collectors Guide to Seashells of the World, 158 plates (see pl. 65).

Dodge, H. 1957 A Historical Review of the Mollusks of Linnaeus, Part 5, The Genus Murex of the Class Gastropoda. Bull. Amer. Mus. Nat. Hist., Vol. 113, (2), pp. 77-222. (See pages 117-120)

Family TONNIDAE Peile, 1926.

In the Survey Collection are only two species of this interesting family. One of them is the sometimes very large tun shell, Tonna galea; the other belongs to the deep water genus Oocorys.

Genus Tonna Brunnich, 1772

20. Tonna galea (Linne, 1758)

This species is well known and is figured in most popular books for collectors. It is well distributed along the Texas coast, but live material has not been obtained in our survey. On rare occasions live, rather juvenile, material has been taken on the beach but no such material is in our collection. Broken and fragmentary material is often dredged along the Texas coast. Characteristic are the green, non-calcified protoconchs which are deformable without breaking and which are sometimes present in dredgings.

Records HMNS Survey Collection: 24 lots, no live material
Depth range: 0-65 fms.
Geographical range: North Carolina to Texas; to Brazil;Medit.,Indo-Pacific
Maximum size in HMNS Survey Collection: The largest obtained specimen, now on permanent display, was not measured.

Genus Oocorys Fischer, 1883

21. Oocorys bartschi Rehder, 1943

A single immature specimen of this rather unusual species was dredged in 70 fms. southeast of Corpus Christi. It is a somewhat thin but strong shell, with a rather reduced spire.

Records HMNS Survey Collection: 1 lot, no live material.
Depth range: 70 fms.
Geographical range: Texas here reported; off Southeast Florida
Maximum size in HMNS Survey Collection: 60 mm.

Family STROMBIDAE Rafinesque, 1815

Of this well known family two species are common along the Texas coast, each in its own type of environment. Two other species have been taken, but the records are rare.

Genus Strombus Linne, 1758

22. Strombus alatus Gmelin, 1791

Extremely common along the Texas coast where it is often dredged alive. It lives on shelly and sandy and even quite

muddy bottoms. Sometimes dead specimens can be found on the beaches and occasionally live material has been collected on the beach, mainly from Port Aransas southward. Abbott (1960) in Indo Pacific Mollusca, Vol. 1(2), states that in all known cases Strombidae are herbivorous or detritus feeders. The extremely dark and muddy waters of the Texas coast makes a herbivorous mode of life for this species quite unlikely. Juvenile specimens are often spotted brown. Laursen 1981 studied some of the protoconchs.

Records HMNS Survey Collection: 60 lots of which 17 contain live collected material.

Depth range: 0-50 fms.; alive: 0-25 fms., with optimum at about 8-15 fms.

Geographical range: Texas, both sides of Florida to North Carolina

Maximum size in HMNS Survey Collection: 104 mm.

23. Strombus costatus Gmelin, 1791

Only a single, huge specimen was dredged in 100 feet off Louisiana (Clay Pile Dome). It is an old senile specimen.

Records HMNS Survey Collection: 1 lot, no live material.

Depth range: 100 feet.

Geographical range: South Florida, West Indies to Brazil, Bermuda.

Maximum size in HMNS Survey Collection: 208 mm.

24. Strombus raninus Gmelin, 1791

This species lives in fair abundance on the offshore coral reefs and somewhat deeper algal environment.

Records HMNS Survey Collection: 7 lots of which 4 contain live collected material.

Depth range: 10-30 fms.

Geographical range: Southeast Florida, West Indies to Brazil, Bermuda.

Maximum size in HMNS Survey Collection: 82 mm.

25. Strombus gigas Linne, 1758

A fair sized specimen of this species was collected on the Texas Flower Gardens, but unfortunately it is no longer present in the Survey Collection. When it was brought up alive, the author handled it and was surprised and shocked when he was hit hard by the operculum and almost dropped the specimen overboard. So far as it is known to me this is the only specimen reported with certainty from Texas. Vague rumors persist that other specimens have been taken at the same location.

Records HMNS Survey Collection: none present.

Depth range: ±15 fms. (alive)

Geographical range: Southeast Florida, West Indies, Bermuda.

Maximum size in HMNS Survey Collection: not measured.

Family XENOPHORIDAE Philippi, 1853

Only a single species of the genus Xenophora is present in the HMNS Survey Collection. The genus Tugurium has as far as I know not yet been found in the Gulf of Mexico west of the Mississippi. The genera

Xenophora and Tugurium were treated by Clench and Aguayo in 1943 in Johnsonia, Vol. 1, (18).

Genus Xenophora G. Fischer, 1807

26. Xenophora conchyliophora (Born, 1780)

A considerable number of specimens of this well known species in the HMNS Survey Collection is remarkable by the fact that instead of shell fragments the animals have cemented pieces of dark Miocene shale to their shells. These specimens derive from Miocene shale uplifts such as Stetson Bank off the Texas and Louisiana coast. However, material collected on shelly bottoms invariably shows only cemented bivalve fragments such as Corbula, Anadara, Chlamys, and Gouldia.

Records HMNS Survey Collection: 20 lots, no live but some quite fresh dead material.
Depth range: 15-55 fms.
Geographical range: West Indies to North Carolina; Bermuda, Brazil.
Maximum size in HMNS Survey Collection: width base 45 mm, height 35 mm.

Family NATICIDAE Gray, 1846

This family occurs with a fair number of species in all 3 subfamilies in the Western Gulf of Mexico. In the HMNS Survey Collection there are a number of species, which although they are present in many lots nevertheless have not been reported before from the Gulf of Mexico. In previous listing I had given them as Natica sp. A, B, etc.

The Polinicinae which have a chitinous operculum, and an umbilicus partially or completely filled by a button-like callus are represented by the genus Polinices - 3 species in different environments - the genus Sigatica - 1 species, the genus Lunatia - possibly several species in deep water, and the genus Amauropsis, a probably undescribed species, which may be a Pleistocene fossil.

The Sininae which have a shell with a very much enlarged last whorl and large aperture, are represented by the genus Sinum - 2 species.

Finally the Naticinae are represented by five different species, occurring from shallow to very deep water. Often the calcareous opercula are found in dredgings and of one species it is only the operculum that is present in our collection.

Genus Polinices Montfort, 1810

27. Polinices duplicatus (Say, 1822)

This is an extremely common species in shallow water and along the sandy beaches of Texas, where it can be collected in the sand and mudflats during low tide burrowed in the sand. In juvenile material (very young) the umbilicus is already closed, then at the same time a button and an opening form. Offshore dredged material is quite often covered by bryozoa commensal with hermit crabs. It

is quite remarkable that bay material is shaped somewhat differently from offshore shells. The bay populations have a deeper suture, are rounder, and are somewhat thinner shelled, and in general are darker colored. In other words the typical flattening of the offshore form is not present, so that sometimes the bay populations produce forms in which the height exceeds the width.

Records HMNS Survey Collection: 65 lots of which 28 lots contain live collected material.

Depth range: 0-26 fms.; alive: 0-7½ fms. One live shell from 25 fms. remains somewhat of a puzzle. Most live material comes from the beach, but one lot from Ship Shoal Bank off Louisiana at 7½ fms.

Geographical range: Western Gulf of Mexico to Florida to Massachusetts.

Maximum size in HMNS Survey Collection: 82 mm width, 63 mm height from Galveston West Beach.

28. Polinices lacteus (Guilding, 1834)

The material in the HMNS Survey Collection derives from the offshore coral banks, algal reefs, and Miocene shale uplifts such as Stetson. I do not believe that there is more than one species in this material although a few could be called P. uberinus (Orbigny). It is quite likely that the latter is merely a form of lacteus and does not deserve specific rank. Many of our lots consist merely of a number of very juvenile shells ranging in size from ½-2mm. These are common on the reefs and can be easily recognized by their translucent character, spherical form and clearly accentuated but extremely minute brown apex on the white shell.

Records HMNS Survey Collection: 14 lots, no live collected material.

Depth range: 12-30 fms.

Geographical Range: Gulf of Mexico to North Carolina; Bermuda, Brazil.

Maximum size in HMNS Survey Collection: 19 mm.

29. Polinices hepaticus (Roding, 1798)

Only a single immature of this species is in the HMNS Survey Collection. It was collected on Stetson Bank. The species was once found alive on the beaches of Padre Island.

Records HMNS Survey Collection: 1 lot

Depth range: ± 30 fms.

Geographical range: Southeast Florida, Texas; West Indies and Brazil.

Maximum size in HMNS Survey Collection: 5 mm.

Genus Sigatica Meyer and Aldrich, 1886

30. Sigatica carolinensis (Dall, 1889)

Only 3 lots of this small and characteristic shell were collected. They are recognizable by the spiral grooves below the suture. All three lots come from relatively shallow water, and sandy, shelly bottoms, from an area south of Galveston and Heald Bank. It could be that they are Pleistocene in age.

Records HMNS Survey Collection: 3 lots, no live material.

Depth range: 6½-11 fms.

Geographical range: Florida to North Carolina; West Indies.
Maximum size in HMNS Survey Collection: 5 mm.

Finally there is in the Collection some material from deeper water, very incomplete and unfortunately juvenile that in all probability belongs to the genus Lunatia. We will not try to attach a trivial name to it, but list them here.

Lunatia sp. A. One lot, juvenile, from 450 fms.
Lunatia sp. B. One lot, juvenile, from 450 fms. (Clearly different from Species A)
Lunatia sp. C. One lot, juvenile, from 50 fms.
Lunatia sp. D. One lot, juvenile, from 56½ fms.

Genus Amauropsis Morch, 1857

31. Amauropsis sp. A.

A single specimen of an unknown species was taken in rather shallow water. It is possible that it could be a Lunatia but the entire shell form is much closer to Amauropsis. The umbilicus is a quite narrow slitlike opening. The suture is quite deep and it looks like a very depressed islandica. It is possibly a Pleistocene fossil.
Records HMNS Survey Collection: 1 lot.
Depth range: 7½ fms.
Maximum size in HMNS Survey Collection: 5 mm.

Genus Sinum Woodring, 1928

32. Sinum perspectivum (Say, 1831)

This well known species is usually quite common in beachdrift along the Texas coast. The animal is much larger than the shell and when collected alive on the sand flats look like a piece of salted pork, rather firm but slimy. It burrows in the sand. Quite unusual even in shallow offshore water. Juveniles of up to a few millimeters can be picked up from beach drift. The very young have an open umbilicus which soon becomes overgrown by a callus. Abbott reports sizes of up to 2 inches for this common beach shell but material that large is not known from Texas. Some fragments are present in the Survey Collection that come from Stetson Bank. These in all probability are fossils, which lived in shallow water (Pleistocene) before the rise of the sea level. They look quite old.
Records HMNS Survey Collection: 19 lots, of which two contain live collected material.
Depth range: 0-30 fms.; alive; 0 fms. All material in our Survey Collection collected below 9 fms. is probably fossil.
Geographical range: Maryland to Florida to Texas and West Indies; Bermuda; Brazil.
Maximum size in HMNS Survey Collection: 26 mm.

33. Sinum minor Dall, 1889

This species was described by Dall, (Bull. Mus. Comp. Zool., Vol. 8, p. 297) is the deep water representative of Sinum and

much smaller than S. perspectivum. Although Dall gives as 4.0 mm. for altitude and 6.0 mm. for its width, the species grows at least twice that large. Superficially it resembles S. perspectivum quite closely but is more inflated and hence less flat. It may be merely a deep water form of S. perspectivum, but against that hypothesis the argument can be advanced that no Sinum is found in the depth range 10-35 fms.

Records HMNS Survey Collection: 3 lots, none alive.
Depth range: 35-70 fms.
Geographical range: Florida Keys, West Indies.
Maximum size HMNS Survey Collection: 13 mm.

Finally it may be mentioned two other species not present in the HMNS Survey Collection have been taken in the Western Gulf of Mexico. Sinum maculatum is present in the Houston Museum collection from the beaches of Mexico south of the Rio Grande. Also Haliotinella patinaria was reported from the Flower Garden coral reef.

Sources: Eveline and Ernst Marcus (1965), "On Haliotinella patinaria (Gastropoda: Naticidae), Bull. Marine Science, Vol. 15, (1), pp. 211-215.
D.A. Lipka: Mollusks, in Bright, T. J. and Pequenat, L.H. (editors), 1974. "Biota of the West Flower Garden Bank. pp. 142-163.

Genus Natica Scopoli, 1777

34. Natica canrena (Linne, 1758)

A fairly common offshore species but exceedingly rare on the beach. There exists a difficulty in identification in older worn material without color pattern especially in immature shells. The small radial grooves close to the suture, in early whorls are characteristic, but another species also has them, but more closely spaced. The color pattern of some fresher material is clearly that of canrena. Opercula are often found in dredgings and differ characteristically from those of related species. Live material is somewhat rare.

Records HMNS Survey Collection: 33 lots of which 1 contain live material at 10 fms.
Depth range: Zero (beach) - 55 fms.
Geographical range: Key West to North Carolina; Bermuda; Brazil.
Maximum size HMNS Survey Collection: 27 mm.

35. Natica pusilla Say, 1822

This is with P. duplicatus the most common naticid of the Louisiana Texas coast. In its very juvenile stages difficult to separate from canrena. It occurs along all beaches but descends into deeper water than P. duplicatus. Elevation of the spire is rather variable and juvenile specimens are never so depressed as P. duplicatus. Also the suture is deeper and the shell far more spherical. Natica canrena is as juvenile quite similar but its apex is somewhat different. The species has a very faint color pattern mostly

consisting of regularly arranged brown blotches or is somewhat banded. Normal is a whitish band near the suture on a blotchy background. Others show, however, a more zigzag pattern and still others a more or less livid color. It is often taken from starfish stomachs. The operculum is quite different from the multigrooved operculum or canrena. N. pusilla has only a single groove close to the outer edge of the operculum. It is remarkable that in this species often shells are collected which have been drilled by some natacid and the question may be asked whether this species eats its own kind.

Records HMNS Survey Collection: 105 lots of which 36 contain live collected material.
Depth range: 0-40 fms.; alive 0-23 fms.; but mostly shallower than 12 fms.
Geographical range: Maine to Florida, Gulf States: Brazil.
Maximum size HMNS Survey Collection: 7 mm.

36. Natica marochiensis Gmelin, 1791.

This fairly widespread form lives in deeper water than Natica pusilla all along the Texas coast. We have previously reported this species as Natica sp. B. (Ode, H; Tex. Conchol, Vol. 9 p. 66). The color pattern consists of a whitish band around the suture below which are placed some irregularly spaced stripes. The operculum is quite different from canrena. There are only a few grooves close to its edge. For a precise description see Dall 1889, reprint 1967, Blake Report p. 292. Dall called this species maroceana Dillwyn.

Records HMNS Survey Collection: 27 lots, two of which contain live collected material.
Depth range: 10-51 fms.; alive 30-35 fms.
Geographical range: Southeast Florida to Brazil.
Maximum size HMNS Survey Collection: 11 mm.

37. Natica castrensis Dall, 1889 (See Blake Report, p. 293)

This deep water species is superficially fairly close to N. canrena, but differs in being smaller, the umbilical callus is more slender, the upper whorls are somewhat more elevated and carry deeper and more closely spaced wrinkles than N. canrena. The color pattern is somewhat spotty and blurred. Most specimens in the Survey Collection are worn but one specimen is very fresh from 140 fms.

The operculum is probably quite unlike that of canrena but quite close to that of marochiensis. We have some loose opercula collected with specimens of castrensis, but we have no definite proof that they belong together. Most of our lots come from between 50-70 fms.

Previously reported as Natica sp. A. (Ode 1973, Texas Conchologist Vol. 9, p. 66).

Records HMNS Survey Collection: 12 lots, no live material.
Depth range: 25-140 fms.
Geographical range: Florida Keys, West Indies
Maximum size HMNS Survey Collection: 18 mm.

DRIFT SAMPLE FROM PORT O'CONNOR By Jim Keeler

The morning after our rained-out field trip to Matagorda Island it was bright and sunny in Port O'Connor, Texas. A small group had stayed overnight and it was decided that we would do a little shelling on the bay side of town. After poking through sandy shallows near the jetties we went to the sandy/muddy clay bay shore just beyond the northern edge of town. This area is known for the presence of boring bivalves such as Cyrtopleura costata and other similar species.

It was here that I scooped up about a quart of drift material at Connie Boone's suggestion. Since then I've spent a number of evenings armed with a low-power microscope and a small artist's paint brush sorting the small shells out of the waste material.

Everyone seems to have his or her own particular way of sorting through dredgings, drift, or grunge for microshells. My approach is a modification of the technique demonstrated to me by the Academy of Natural Sciences of Philadelphia. I use a 6-inch by 8-inch plastic meat tray from the grocery store on the stage of a low-power (10 to 30X) binocular microscope with high intensity lamp illumination from above. (A clamped magnifying glass, a headband incorporating magnifying eyepieces, or magnifying lenses attached to eyeglass temples as used by jewelers can be used since the needed magnifications are usually 10 to 30 times. A microscope is much easier to use although more expensive. Sometimes a used microscope can be purchased if one is lucky.)

A piece of black cardboard (or black paper) is placed in the bottom of the tray and 2 or 3 ounces of material to be sorted is spread out on the black surface in the half of the surface away from me. I also place 3 or 4 one-inch diameter plastic medicine vial covers with the lips up in the tray along the left side. One of these is for gastropods and scaphopods, one for tiny bivalves, one for unusual specimens to be reexamined at the end of the sorting, and the fourth for any particular family I am searching for.

The actual process of sorting is done with an artist's small watercolor paintbrush which is used as a minute broom. (Some people like to use tweezers, or the flat-surfaced postage-stamp tweezers.) I hold the brush as I would a pen or pencil and sweep the material to be discarded toward me as I observe through the microscope. When a desirable shell is found I push the bristles of the brush down over the shell spreading the bristles out around the shell. Then when the brush is raised the bristles are allowed to contract around the shell. The shell can then be lifted in the grasp of the bristles and put in the appropriate vial cover at the left of the tray. If the shell is too large for the bristles of the brush, fingers or a tweezer can be used. Sometimes I moisten the wooden tip of the brush with my tongue and use the tip to pick up a particularly flat, stubborn shell.

When the tray is completed, the contents of the vial covers are poured into individually labelled medicine vials to be added to as other trays of the same sample are sorted.

After sorting of the Port O'Connor sample, Tucker Abbott's American Seashells, various issues of Texas Conchologist dealing with the Northwestern Gulf Survey material, and Jean Andrews' Shells and Shores of Texas were used for identification along with a confirmation session or two at the Houston Museum of Natural Science.

Generally for Caribbean microshells, references such as Warmke and Abbott's Caribbean Seashells, Perry and Schwengel's Marine Shells of the West Coast of Florida, Percy Morris' Field Guide to Shells of the Atlantic and Gulf Coasts and the West Indies, Clench and Turner's The Western Atlantic Marine Mollusks Described by C.B. Adams (Occasional Papers of the Harvard Museum of Comparative Zoology), Kaicher's Card Catalog of World Wide Shells, and others are used. In this case these latter references were not necessary.

The following list of seventy species of marine shells found in this drift sample is an indication of the variety that can be obtained at one time.

GASTROPODS

Acteocina canaliculata (Say, 1822)
Acteon punctostriata (C.B. Adams, 1840)
Anachis obesa (C.B. Adams, 1845)
Boonea impressa (Say, 1822)
Caecum pulchellum (Stimpson, 1851)
Cerithidea pliculosa (Menke, 1829)
Cerithium lutosum (Menke, 1828)
Crepidula fornicata Linne, 1758
Crepidula plana Say, 1822
Creseis acicula (Rang, 1828)
Diastoma varium (Pfeiffer, 1840)
Epitonium angulatum (Say, 1830)
Epitonium rupicola (Kurtz, 1860)
Eulimastoma harbisonae Bartsch, 1955
Litiopa melanostoma Rang, 1829
Littorina nebulosa (Lamarck, 1822)
Meioceras nitidum Stimpson, 1851
Mitrella lunata (Say, 1826)
Modulus modulus (Linne, 1758)
Nassarius acutus (Say, 1822)
Neritina virginea (Linne, 1758)
Odostomia gibbosa Bush , 1909
Pyramidella crenulata (Holmes, 1859)
Pyrgocythara plicosa (C.B. Adams, 1850)
Rissoina catesbyana Orbigny, 1842
Sayella livida Rehder, 1935
Seila adamsi (H.C. Lea, 1845)
Sinum perspectivum (Say, 1822)
Tectonatica pusilla Say, 1822
Teinostoma biscayense Pilsbry and McGinty, 1945
Texadina barretti (Morrison, 1965)
Texadina sphinctostoma (Abbott and Ladd, 1951)
Truncatella caribaeensis Reeve, 1842
Turbonilla interrupta (Totten, 1835)
Turbonilla (Chemnitzia) sp.
Turbonilla (Pyrgiscus) sp.
Vermicularia spirata Philippi, 1836

BIVALVES

Abra aequalis (Say, 1822)
Aligena texasiana Harry, 1969
Amygdalium papyria (Conrad, 1846)
Anadara ovalis (Bruguiere, 1798)
Anadara transversa (Say, 1822)
Anomalocardia auberiana (Orbigny, 1842)
Anomia simplex Orbigny, 1845
Barbatia domingensis (Lamarck, 1819)
Brachidontes exustus (Linne, 1758)
Crassinella lunulata (Conrad, 1834)
Crassostrea virginica (Gmelin, 1791)
Cyrtopleura costata (Linne, 1758)
Diplodonta semiaspera (Philippi, 1836)
Diplodonta soror, C.B. Adams, 1852
Donax texasianum Philippi, 1847
Ensis minor Dall, 1900
Gemma gemma (Totten, 1834)
Lyonsia hyalina floridana Conrad, 1848
Macoma constricta (Bruguiere, 1792)
Macoma fragilis Gmelin, 1791
Macoma mitchelli Dall, 1895
Mulinia lateralis (Say, 1822)
Mysella planulata (Stimpson, 1851)
Nuculana concentrica Say, 1824
Periploma margaritaceum (Lamarck, 1801)
Petricola pholadiformis (Lamarck, 1818)
Sphenia antillensis Dall and Simpson, 1901
Tagelus plebius (Lightfoot, 1786)
Tellina Tampaensis Conrad, 1866
Tellina Versicolor DeKay, 1843

SCAPHOPODS

Dentalium texasianum Philippi, 1849

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A poster featuring jellyfish, rays, toadfish, bristle worms, catfish, sea urchins, scorion fish, stargazers, fire sponges and octopi, "all dangerous marine organisms found in the Gulf of Mexico", has been published by the Texas A&M University Sea Grant College Program. A note in the paper said it is available from that program for $1.00. The poster is an effort to increase the awareness of swimmers, boaters, fishermen and even shellers in the dangers in Gulf waters. It would make a good gift for your youngster. It would be an aid to teachers. You might want one.

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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.

HARBOUR ISLAND REVISITED by Helen Eberspacher

I wish it wasn't always such a hassle to get to Harbour Island in the Bahamas. Of course, after getting to this beautiful place with its wonderful shelling, I have always decided the effort was worth it.

In May, 1982, I made my third trip to this island, this time accompanied by Carol Courtade, whom some of you know. This time we flew from Houston to Fort Lauderdale, Florida, where we changed planes for North Eleuthera, our last air stop before taking a boat the rest of the way. Our connection in Fort Lauderdale was with Pompano Airlines. We boarded their small plane that held six to eight people, including the pilot. When we were loaded and about to take off, the pilot told us all to get off and return to the airport. When we were all gathered around Pompano's ticket desk, we were told the plane weighed too much and that some of our luggage would have to be left behind for the next flight which was the next morning. We then were asked for a show of hands of those who would be willing to leave a bag. When no one else raised a hand, good old Carol and Helen each volunteered one bag. We thought we would be allowed to say which bags we were willing to leave, but instead, both my bags and one of Carol's were brought in while we were still at the desk. Fortunately, from past experience, I had had the foresight to put overnight necessities and minimum shelling clothes, plus a little food in a tote bag which I was carrying. Therefore, I was able to survive that first night and the next day. Before going on to Harbour Island, our plans were to spend our first two nights in the little town of Current on Eleuthera Island and we had reservations at the Sea Raider Cottages there. It so happened that a lady on the Pompano plane worked for Pompano Airlines and lived just across the street from our cottage and she promised us that she would see that our bags caught up with us the next day.

We had read about how good shell collecting is supposed to be on Eleuthera, so we arranged with the manager of the cottages to rent a car the next day. Early the next morning we took off for Governor's Harbour, about 40 miles from Current, having to remember to drive on the left side of the road according to British custom. As so often happens when looking for shells in strange places, no one at Governor's Harbour could tell us where to go. We picked up some very small stuff in the drift at the water's edge of the harbor. A curious native passing by asked us what we were doing and then she told us about a place where we might find some shells. We found the place, but the only shells there were about a hundred long-dead, sun bleached Milk Conchs, all about the same size - about half-grown I would guess. We picked up a few of the best. We don't know why all these Milk Conchs happened to be way up on the bank, but decided they were washed up there by high winds and waves during a storm. If we could have found that spot a week or so after it happened, we could have gathered enough pretty little Milk Conchs to give one to every member of the Houston Conchology Society!

On our way back to Current, we stopped here and there without much luck, finding only halves of Atlantic Winged Oysters, some dead Chitons and many small West Indian Top Shells. Near Current, we investigated some exposed sand bars and shallow grasses and found two live immature Queen Conchs, two Milk Conchs, small star fish, several Amber Pen Shells, two Atlantic Pearl Oysters which were attached to the Pens and several Olives popping up on the bars. After that, we returned to our cottage and found our missing luggage on the sidewalk in front of our door, much to our relief!

The next morning, we went to the dock and caught a boat to Harbour Island where we had reservations at the Coral Sands Hotel for the little cottage where we had stayed before. However, upon arriving at the Hotel, we found that the cottage was occupied for the next couple of days and we would have to stay in the hotel annex until the people left. Our apartment was very nice, but had only a small refrigerator in the way of kitchen facilities. That meant we would have to wait until we got in the cottage to to take care of our live shells.

On our first morning at Harbour Island we shelled the Girls Bay, our favorite place which was always productive. The tide was quite low and while I was wading quite a way out from shore, a nice looking young man came up to me and said, "Hello, you look like you know what you're doing - like a real expert." I told him I wasn't an expert, but just loved to collect shells and that I belonged to two shell clubs back home in Houston. He then asked, "The Houston Conchology Society?" When I said yes, he put out his hand and said "So do I! My name is Don Hart." Continuing our conversation, I found out that he and his wife, Sherrie, were the ones occupying our cottage. It seems that they too were inconvenienced upon their arrival at the Coral Sands and had to spend a few days elsewhere before they could move into the cottage which they had reserved. Through some sort of mixup, the cottage had been rented to some other people whose reservations overlapped part of the Harts' and the Harts' overlapped ours.

The next day, Don, Sherrie, Carol and I went out in a boat with Berlin Cleare and his son, Rocky, and had a wonderful time. Have you ever waded from one island to another? Well, the tide was so low that day that we did just that and never got in water over knee deep. We collected huge Star Fish, Queen Conchs, Gaudy Asaphis and I found a whole, though dead, Lima, my first and only. The Harts left the next day and Carol and I moved to the cottage. If any of you ever go to Harbour Island, the cottage on the grounds of the Coral Sands Hotel is the place to stay, because it has a real kitchen and lots of room to clean and spread your shells out to dry.

Another day, Carol and I decided to walk to the Narrows, another good shelling place on the island. Rocky was supposed to go with us and show us a path that led from Girls Bay to the Narrows, some distance away. At the last minute, he couldn't go , but Carol knew where the path started, so we went on. It was a mistake, because after awhile we got lost, walked through some jungle, saw a huge snake, and finally got out in the water and waded the rest of the way over and through rocks of all sizes. The weather turned bad while we were at the Narrows. The wind blew and it rained, so we didn't stay very long. While there, we did find a few Queen Conchs, Apple Murexes and two Helmets so encrusted with lime that we didn't keep them. Of course, we had to walk back to the hotel, but this time we started wading and didn't come out of the water until we could see the path. This was an experience I don't care to repeat. Almost forgot, just before leaving the Narrows we saw a tremendous stingray.

Our best collecting on this trip was in Girls Bay, where we found many of the same shells we had found on previous trips. They included Amber Pens, Angular Tritons, Egg Cockles, Speckled Tellins, Tiger Lucines, True Tulips, Strawberry Cockles, Large Cross-Barred Venus Clams, Star Fish and Sea Urchins.

As you can tell, I think this is a wonderful place to collect shells and if I could just wish myself there, I'd go again in a minute.

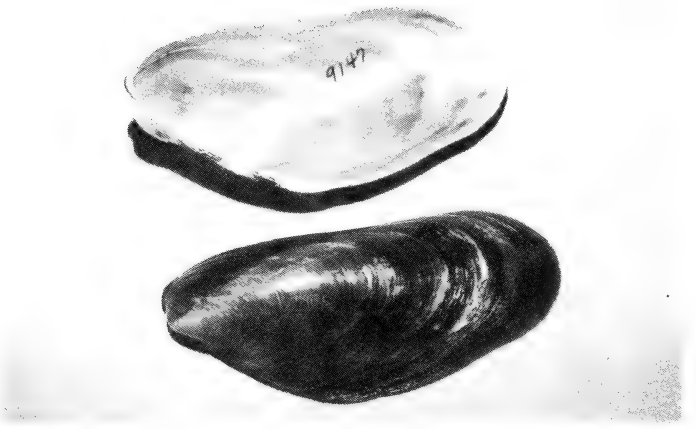

Fig. 1 Modiolus modiolus squamosus Beauperthuy, 1967, was collected by Helen Eberspacher in Girl's Bay, Harbour Island, off Eleuthera, Bahamas. This species is supposed to occur in Texas according to American Seashells, 1974, but it does not seem to appear in the material at the Houston Museum of Natural Science. See Abbott for the discussion of the differences of this species from our Modiolus americanus (Leach, 1815). Helen collected this latter species at Harbour Island also.

Photo by Constance E. Boone

I was pleased to read in the October issue of the Texas Conchologist that Connie Boone made a mistake. (Let me try that again.) I was pleased to note in the October issue that Connie Boone admitted making a mistake. (Maybe the third time is the charm. After all, this has to get by the Editor.) I was pleased by the "Correction Note" in the October Texas Conchologist which stated that somebody made a mistake. The author of the note is irrelevant, but the fact that anyone would admit to a goof in our present-day, "we're No. 1" Society is phenomenal. It is refreshing to see goofs recognized and corrected in the Conchologist because this relationship -- trial, error and correction -- is the essence of most scientific endeavor. This relationship is also the core of the learning process for most of us -- amateurs and professionals alike. This, then, is a trilogy of goofs. I am not necessarily the protagonist of each tale, but I was, at least, present during each "learning experience".

The first tale of woe involves a marine biologist who, early in his career as an environmental consultant doing marine benthic (bottom dwelling) invertebrate identifications, was puzzled by a certain, clear, hard animal part which had turned up in samples from as diverse origins as the Gulf Coast of Mexico, the estuaries of New Jersey, and the coastal waters of Iran. These translucent objects had a recognizable shape, were too hard to pierce or break with a dissecting needle, and could only be seen under a dissecting microscope. Our protagonist assumed that the object was an animal skeletal fragment and that since the object was translucent, almost transparent, that the object was probably made of silicon rather than carbonate. Thus, the "unknown" was possibly an aberrant sponge spicule, or something similar. Finally in frustration, the biologist sent the hard "unknown" off to a more experienced invertebrate taxononist for identification. Alas, the ID came back something like this, "Unknown object was probably a piece of plastic; it dissolved when alcohol was added." The red-faced biologist hence surmised that the objects were plastic shavings introduced to the samples either from the plastic liners of the collection vials, or from the plastic containers of the formalin preservative added to all the samples.

The second tale involves several graduate biology students during a field trip taken early in their marine careers. The collection trip, I believe to Galveston Island, involved opportunistic sampling (beach combing) of several different habitats including a tidal mud flat. On this mud flat, our heroes encountered numerous vertically dug holes, and wanting to find out what critters were responsible for the holes, they commenced digging (the heroes, not the critters). But the critters had excavated a deep hole, so that after several attempts with a garden spade, all our heroes had to show was a few pieces of a worm-like organism. This unknown was soft, delicate, whitish with parallel openings running the length of the body. One of the graduates offered that it might be a sipunculid, a type of marine worm. But no one knew the identity of the creature for sure. Then one day several weeks later, one of the students returned from another field trip with a whole, live specimen of the unknown creature -- a live angel's wing with a beautiful, delicate siphon projecting out of the shell. The unknown biologists had performed proboscisectomies on several indignant, perhaps even furious bivalves.

The third tale, mercifully the last, has to do with some mysterious scales which appeared in a taxonomist' plankton samples. The scales were ever-present in a series of samples and the planktologist pondered what creature could be swimming through the sea losing scales in such vast numbers as to be present in all the samples from a certain field trip. Fish scales were ruled out but worm scales were considered the leading possibility, until an insect expert glanced in the microscope and asked why the marine biologist was studying moth scales. Probably, some curious moth was flitting around the lab, peeked into a container of formalin, gagged on the smell and fell to his demise. The scales of his wings were dispersed throughout the preservative and then introduced into each sample in the field.

This triad of errors illustrates several important points to collecting and identifying unknown objects on the seashore. In order to minimize embarassing, albeit humorous taxonomic errors, I suggest the following set of questions before you consult your identification keys or collector's handbooks. First, is your object of study animal, vegetable or mineral? To this stock question, we must nowadays add "Is it plastic?" Second, do you have all of it, or only a portion of the unknown? A corollary to this question is "Which part do you have?" I suspect all of us amateurs have known the frustration of finding a beach worn bivalve with a faded pallial sinus and a non-committal beak and have pondered if we had the left or the right valve. Third, does the object you found really belong on the beach? The seashore is the hall closet of the world; eventually, everything ends up there. But not everything found on the beach lives there. Thus, expect to find fresh-water and even terrestrial shells and organisms on the beach.

Lastly, ask lots of questions of people with more experience than yourself. You may make a few bloopers, but you'll learn the answer common to most collectors -- "What is it?"

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S.O.S.

We have a great need for short fillers for Texas Conchologist. TC is published in multiples of 4 pages. Articles turned in seldom conform exactly to our typed pages. We dislike blank spaces that you could fill with collecting notes, book reviews, travel tips, etc. Deadline for material for the next issue is March 1, 1983.

Constance E. Boone, Editor

CASUAL SHELLING IN IXTAPA, MEXICO By Jim Keeler

Our week in early October, 1982 in Ixtapa, Mexico was not a shelling trip. We took golf clubs, "who-done-its" and "sci-fi" to read, and leisure clothes. However, a sheller can't resist a little beachcombing and poking among rocks.

Ixtapa, a relatively new resort area adjacent to the old fishing town of Zihuatanejo, is approximately 125-150 miles northwest of Acapulco. Ixtapa's beautiful main beach is perhaps 2 miles long and bounded at each end by rocky cliffs. In an adjoining bay is Ixtapa Island, a small recreational island with several small beaches and rocky areas, used for local excursions.

We found the Ixtapa area very clean and the beach almost "too clean". At first we thought the beach was devoid of shell drift. However, there were patches of wash-up material, mostly limpets and single valves of bivalves (except for the Tivelas). The rocky areas at both ends of the beach and the rocky area on Ixtapa Island provided most of the gastropods.

Our few hours of casual shelling provided over 60 species of mollusks not including an additional ten that didn't quite fit the descriptions or figures in Myra Keen's Sea Shells of Tropical West America, Second Edition. Since the shells were not live collected and had some wear, identifications were not as positive as would be the case for live collected material. For the most part, however, identification was not difficult.

The following list is of those species identified:

Diodora inaequalis (Sowerby, 1835)
Fissurella gemmata Menke, 1847
Fissurella microtrema Sowerby, 1835
Fissurella decemcostata McLean,1970
Fissurella rubropicta Pilsbry, 1890
Fissurella nigrocincta Carpenter, 1856
Collisella pediculus (Philippi, 1846)
Notoacmea fascicularis (Menke, 1851)
Astraea unguis (Wood, 1828)
Nerita scabricosta Lamarck, 1822
Nerita funiculata Menke, 1851
Cerithium maculosum Kiener, 1841
Hipponix panamensis C. B. Adams, 1852
Hipponix pilosus (Deshayes, 1832)
Calyptraea spirata (Forbes, 1852)
Crepidula lessonii (Broderip, 1834)
Crucibulum spinosum (Sowerby, 1824)
Crucibulum scutellum (Wood, 1828)
Crucibulum lignarium (Broderip, 1834)
Cypraea arabicula (Lamarck, 1811)
Morum tuberculosum (Reeve, 1842)
Vitularia salebrosa (King and Broderip, 1842)
Thais speciosa (Valenciennes, 1832)
Thais triangularis (Blainville, 1832)

Columbella haemastoma Sowerby, 1832
Columbella fuscata Sowerby, 1832
Mitrella baccata (Gaskoin, 1852)
Mitrella santabarbarensis (Gould and Carpenter, 1857)
Agaronia testacea (Lamarck, 1811)
Olivella tergina (Duclos, 1835)
Mitra lens Wood, 1828
Conus nux Broderip, 1833
Bulla punctulata A. Adams in Sowerby, 1850
Siphonaria palmata Carpenter, 1857
Noetia reversa (Sowerby, 1833)
Glycymeris delessertii (Reeve, 1843)
Glycymeris multicostata (Sowerby, 1833)
Ostrea columbiensis Hanley, 1846
Ostrea palmula Carpenter, 1857
Cardita crassicostata (Sowerby, 1825)
Cardita grayi Dall, 1903
Cardita laticostata Sowerby, 1833
Ctena mexicana (Dall, 1901)
Transennella puella (Carpenter, 1864)
Chama mexicana Carpenter, 1857
Trigoniocardia obovalis (Sowerby, 1833)
Laevicardium elatum (Sowerby, 1833)
Tivela byronensis (Gray, 1838)
Tivela delessertii (Sowerby, 1864)
Pitar lupinaria (Lesson, 1830)
Megapitaria squalida (Sowerby, 1835)
Chione amathusa (Philippi, 1844)
Chione tumens (Verrill, 1870)
Chione subimbricata (Sowerby, 1835)
Chione pulicaria (Broderip, 1835)
Chione purpurissata Dall, 1902
Chione subrugosa (Wood, 1828)
Prothaca metodon (Pilsbry and Lowe, 1932)
Donax contusus Reeve, 1854
Donax culter Hanley, 1845
Donax punctistriatus Hanley, 1843
Amphichaena kindermanni Philippi, 1847
Semele lenticularis (Sowerby, 1833)
Corbula ovulata Sowerby, 1833

SEARCH AND SEIZURE

By Constance Boone

This is about the faces of lace---the Lace Murex.

One of the very first Murex I collected was the white, pink-tipped "Lace Murex" on the sand bars on the Gulf Beach at Sanibel Island, West Florida. That was in August, 1956. I had a borrowed copy of American Seashells, Abbott's First Edition, 1954. The identification seemed clear enough.

Since that time I have continued to add to my collection of this species from other localities in the Western Atlantic, and I have continued to try to understand the different opinions on the names used for different populations.

This present review is for the many club members who like Murex and was prompted by recent gifts of shells to the Houston Museum of Natural Science by club members. It is also prompted by the recent visit to the Houston Museum of Natural Science by the noted Murex authority Dr. Emily H. Vokes of Tulane University. She was kind enough to look over the material at HMNS and expressed her views on the "Lace Murex" once again to help jell my understanding of the nomenclature.

In 1956 when I began collecting seashells in earnest I had no problem naming my Sanibel "Lace Murex". What I collected looked like Abbott's picture and what I had matched his discussion of the ecological variety named arenarius by Clench and Perez Farfante. I didn't know where arenarius had been named because this was not stated in the actual discussion of Murex florifer in American Seashells. Had I been told it was reviewed in Johnsonia I would not have known what that meant.

It is obvious that I had very little scientific background. I didn't have the faintest idea how a shell got a name.

Some years later when the Houston Conchology Society (of which by then I was a member) set up a library with a core gift of reference books, including Johnsonia, a continuing monograph series edited by Dr. William J. Clench at Harvard on Western Atlantic shells, I was able to read in Volume I, #17, 1945, about Chicoreus florifer (Reeve, 1846) and the new C. florifer arenarius Clench and Farfante, 1945. The glimmering of the problems of solving some of the names earlier proposed by authors began to sink in a little bit. There had been many names proposed for the "Lace Murex". Reeve named Murex florifer in 1846 in Conchologia Iconica. It seemed to be the earliest good name and thus chosen to be the right one by modern workers. Clench and Farfante designated Honduras as the type locality since Reeve's types were in the British Museum from Honduras. Figure 188, plate 36, Volume 3 of Conch. Icon., was the illustration of this species. The range in Johnsonia said the species was found in the Northern West Indies, Southern Florida, Bahamas, Greater Antilles and the Central American coast.

Clench and Farfante discussed C. florifer arenarius as a narrower, lighter spired shell with pinkish upper whorls and stated it was limited to Florida. The holotype was from Sanibel Island.

Time passed and several of us had long discussions about where the real Chicoreus florifer existed and what it looked like. In those days I wasn't traveling very much, and I also wasn't purchasing many shells. I was an avid collector who had the notion I wanted to do my own collecing or not acquire the shells. (This has long since been changed.)

The club library was a good one, but it did not have the classics such as Reeve or Sowerby. It has only been in recent years that I am able to lovingly peruse again and again the pages of such early books. The Houston Museum of Natural Science has now probably the finest malacological library in the Southwest or even South.

Real Chicoreus florifer from the West Indies was supposed to be more triangular, with darker brown fronds and with a larger and more elongated tubercule between each of the three varicles. For a long while I was sure the little brown Murex Mildred Tate and her husband collected in the Florida Keys one year was the real florifer.

Then someone, probably in a shell magazine I took, mentioned that a specialist named Dr. Emily Vokes said that the right name for the Sanibel "Lace Murex" was really Chicoreus dilectus A. Adams, 1855. Mildred Tate had been in contact with both Dr. Emily and Dr. Harold Vokes at Tulane concerning a large Lima she had from dredgings and had some of the early issues of Tulane Studies in Geology. Dr. Emily Vokes had begun a series on Cenezoic Muricidae of the Western Atlantic. Volume 3, #4, pages 181-204, 1965, discussed recent Chicoreus dilectus Adams and designated a lectotype in the British Museum from the three specimens Adams had. She stated that arenarius was preoccupied and decided that it was not necessary to find a new name since A. Adams' description for dilectus was clear and that the illustration by Sowerby in Thesaurus Conchyliorum (Vol. 4, pts. 33-34, 1879) was "unmistakable". Adams had described dilectus with no locality in Proc. Zool. Soc. London, pt. 23, p. 120. Dr. Vokes designated the type locality as Sanibel Island, Florida, after Clench and Perez Farfante. The recent range was said to be the Gulf of Mexico and northern Caribbean. Dr. Vokes said that dilectus could be distinguished from florifer by its narrower shell and generally lighter color but did say that dilectus could be brown and have brown apices as well as pink ones.

In her discussion of Chicoreus florifer, Dr. Vokes designated a lectotype from Reeve's lot from Honduras in the British Museum and made Honduras the type locality as had Clench and Farfante. The species was described as being generally more imbricated, larger and heavier and with one spine longer at the shoulder, with only one intervarical node, stronger than in dilectus. Darker--wider--more triangular. She said Reeve's figure was satisfactory.

Chicoreus florifer continued to elude me. One problem was lack of material from the Caribbean.

Collectors have always liked Murex. We all eagerly awaited the publications that became available to us. In 1971 Dr. Vokes published the catalogue of the Genus Murex Linne (Mollusca: Gastropoda); Muricinae, Ocenebrinae in Volume 61, #268 of the Bulletin of American Paleontology. It was a complete review of the names available, sources, opinions on on legitimacy---but no pictures! Ruth Fair later published a popular book on Murex, with illustrations. And in 1976 the long-awaited book on Murex Shells of the World by George E. Radwin and Anthony D'Attilio was published. George was very proud of the photos. I had seen a preview of several pages in 1976 at the Columbus meeting of the American Malacological Union. The photos were made by a friend, David K. Mulliner. The Murex were shown about life-size.

The Radwin-D'Attilio book was very conservative and lumped many species. In this the "Lace Murex" was "Chicoreus florifer. Other names, including dilectus and arenarius were placed in synonymy. The photos showed both the larger triangular form from the Caribbean and the narrower smaller shell from Sanibel as C. florifer. The range was listed as Cape Hatteras, North Carolina, and the northern Gulf of Mexico to northern Cuba and the northwestern Bahama Islands.

Abbott's Second Edition, American Seashells, was published in 1974 and had also made changes in "Lace". Abbott said arenarius was a synonym and listed the Sanibel variety as a subspecies, using Adams' name---thusly, Murex florifer dilectus A. Adams, 1855. He used Linne's Murex throughout except for Subgenus headings. Therefore you see that his name does not have A. Adams, 1855 in parenthesis to designate a change in Genus.

So we have some opinions. There is not agreement among professionals, but this isn't unusual. You can decide what you think is best, or you can catalog your shells mentioning all the most important opinions. I like to know the opinions in my material.

I would not have thought much more about this until two club members gave shells to the growing collection at the Houston Museum of Natural Science.

From the Miron collection we received a number of very good lots of "Lace Murex" from off San Augustine and Cape Canaveral, Florida, dredged by Ted Yocius. Many club members got some of these from the dredge material they purchased also from Yocius. Most of the "Lace Murex" were white with pink spires and very frilly. Sam and Fannie Miron worked out everything and had many young specimens as well as adults. In cataloging their gift at HMNS I noticed that some of the specimens seemed more triangular. However, I was conservative and they were cataloged as C. florifer, following Radwin and D'Attilio.

From Helen Eberspacher HMNS received some shells from Harbour Island, Bahamas, off Eleuthera. I had been there in 1977 and had collected

several larger, darker and more triangular Murex I had dubbed in my collection as Chicoreus florifer. I considered this collection my first encounter with the real C. florifer. Helen gave HMNS one specimen which she had named Chicoreus brevifrons (Lamarck, 1822). It was, however, true C. florifer. Chicoreus brevifrons is even larger, generally, and has spiral bands of dark brown between the spiral ridges and the spiral ridges are white. It can also be almost all cream. It has more open spines and 2½ nuclear whorls in comparison to 1½ nuclear whorls for florifer. C. brevifrons has an unguiculate operculum (= clawlike) and C. florifer has a round operculum that is concentric with a subcentral nucleus.

In late October, 1982, Dr. Vokes visited the Houston Museum of Natural Science to see the library available and also looked over the Murex collection. We looked especially at the material in the Northwest Gulf Mollusk Population Survey and you will hear more about this later. She did look at the San Augustine "Lace Murex" and I asked her what she thought about the specimens that were more triangular, among the dilectus appearing specimens. She had not seen the Yocius material but remarked that where this material came from was close to the Bahamas where true C. florifer did occur. Later she wrote us concerning these specimens and said she had examined her material of young "Lace Murex". She stated that "young dilectus has big widespread flanges (Ed. note---flange refers to the projecting rim, edge or extended rib) with the shoulder not very much longer than the other. After about one inch high it then turns the flanges in a bit but not completely, the shoulder spine becomes very apically directed, and the space between the suture and the shoulder spine is almost non-existent."

"In the young florifer, however, from the earliest stages, the shoulder spine is very long and straight out, but the others are very small and turned under--in other words it looks almost like an adult. The overall shape is very markedly triangular from the earliest stages, with a long shoulder spine sticking almost straight out."

Dr. Vokes judged that the HMNS lots from off San Augustine were all good dilectus.

The brown specimens from the Tate collection from the Keys are dilectus also. I collected some in the Keys myself, all darker brown but narrow and they are dilectus also. I have some collected from the Florida West Coast Panhandle area and they are brown dilectus. I have some from shrimpers from the Veracruz area, and they are dilectus, mostly gray white.

So far I have only a few true C. florifer from the Caribbean. I do not know how common it is. I have a large collection of shells acquired from two collectors who lived many years in Aruba. The Chicoreus all seem to be brevifrons. From a trader from Curacao I do have one little puzzle, a Chicoreus that is not a young brevifrons because the spiral ridges are brown not white. I do not yet know what it is although Dr. Vokes thought it might be the long-lost pudoricolor (Reeve, 1845) and Fair pictured it thusly. Dr. Tucker Abbott borrowed it when he described Chicoreus cosmani in Nautilus, October, 1979, and he pictured

it questioning whether it might be a variety of his new Chicoreus. He does not think it is Reeve's pudoricolor.

The C. dilectus species is supposed to be what we have in the Gulf of Mexico and it does range around Florida and up to North Carolina apparently. True C. florifer, according to Dr. Vokes, does not occur in the Gulf of Mexico. In the Northwest Gulf of Mexico Mollusk Population Survey there are no specimens of either dilectus or florifer, despite the dredge material from such areas as the coral reefs (Flower Gardens) where Caribbean material is common. I do not know the "Lace Murex" from the Texas coastline. Shrimpers may bring some in from Mexican waters or southern Gulf of Mexico but I do not know it otherwise.

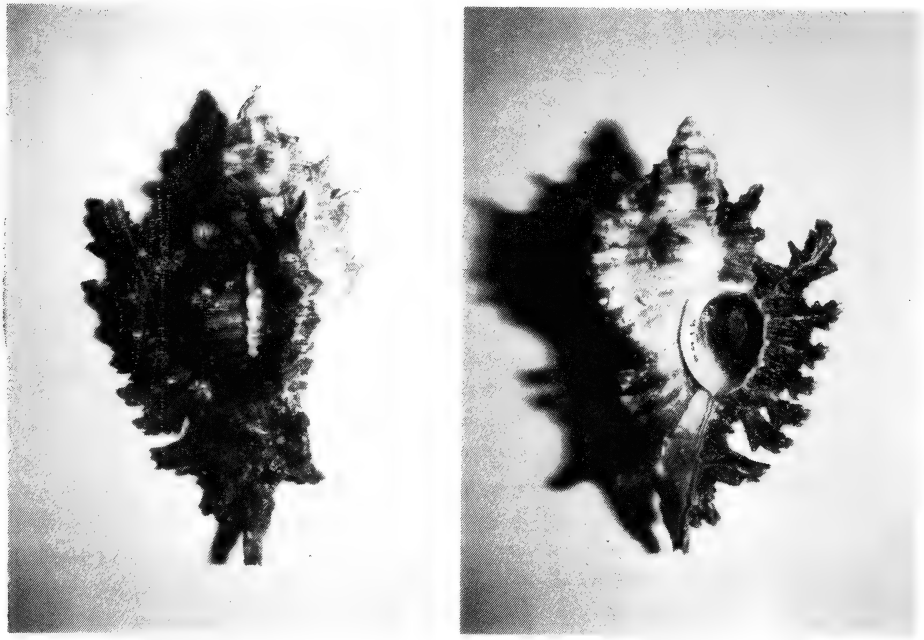

Fig. 1 Chicoreus florifer (Reeve, 1846) collected by Helen Eberspacher at Girl's Bay, Harbour Island, off Eleuthera, Bahamas, at low tide in grasses and shallow water. Specimen donated to Houston Museum of Natural Science.

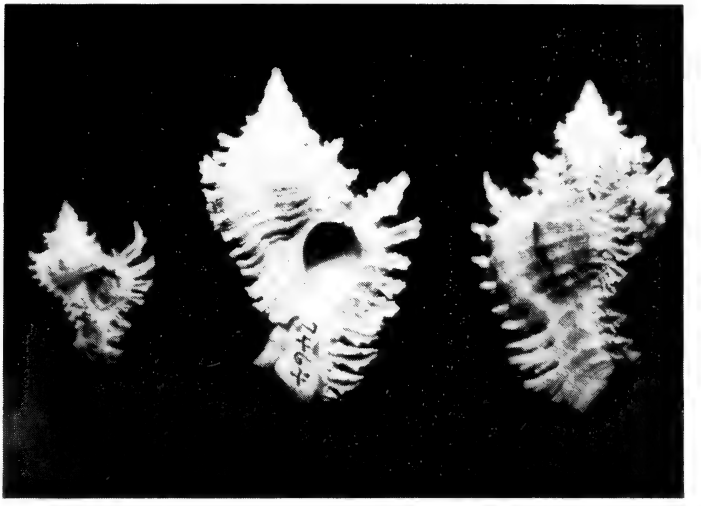

Fig. 2 Chicoreus dilectus (A. Adams, 1855) collected by dredging NE of Cape Canaveral, Florida, from 270 ft. by Ted Yocius, December, 1973. Miron Collection, now cataloged at HMNS.

Fig. 3 Chicoreus dilectus (A. Adams, 1855) collected by Margaret Teskey in the Florida Keys, by snorkeling, grasses and rocks, 1977.

Photos by Constance E. Boone

BOOK REVIEW by Harold W. Harry

Davis, Jack R. (Editor)
1982 Proceedings of the Symposium of Recent Benthological Investigations in Texas and Adjacent States
Aquatic Science Section, Texas Academy of Science
278 pages, (11204 Brunt Drive, Austin, Texas 78758, price, $6.00)

The 21 papers in this volume are important because they are of permanent interest, meaning they will be as useful to scholars many decades hence as during the next few years. The book is well edited and the price is most reasonable. This work is particularly valuable to malacologists because a third of the 15 papers on the freshwater environment and half of the six on the marine environment deal with mollusks.

The papers on freshwater mollusks, taken together, constitute a veritable summary, with revisions and extensions, of knowledge of the freshwater snails and clams of Texas. The absence of a paper on the fingernail clams (Sphaeridae) does not detract from that conclusion, for that group has been well treated by recent papers by H. B. Herrington (1962, Misc. Pub. Museum of Zool., Univ. of Michigan No. 118) and W. H. Heard (1965, Amer. Midland Naturalist 74:309-317).

Joseph Britton's "Biogeography and Ecology of the Asiatic Clam, Corbicula, in Texas" discusses the history of the invasion of this clam and has a map indicating the date of first record at each locality within the state. Raymond Neck has two papers on pearly freshwater mussels, one discussing their ecological zoogeography in Texas, the other being a review of the interactions between humans and the unionids here. These may be the most fundamental papers on Texas unionids since Strecker's work, half a century ago. Artie Metcalf's paper, "Fossil Unionacean Bivalves from Three Tributaries of the Rio Grande", reports the fossil occurrence of 10 unionids, distributed over 12 fossil sites and 6 localities where the species are now living, in Mexico, New Mexico and Texas. Richard Fullington's paper, "The Recent and Fossil Freshwater Gastropod Fauna of Texas", is the result of extensive field work in the state and study of several collections in major museums.

Of the three papers on marine mollusks, "Death Assemblage as a Key to the Past" by Eric Powell, Robert Stanton, Hays Cummins and George Staff, deals explicitly with the controversial problem of how to evaluate dead shells in studies of benthic marine mollusks and presents several new ideas and techniques. Despite its technical approach and jargon, the difficulties of reading it are well worth the effort.

"The Diversity and Distribution of Living Mollusks in the Lower Laguna Madre of Texas" by Howard Wilhite, Terry Allison and Jack Rickner, is a welcome addition to knowledge of mollusks of this very unusual environment, where logistic problems greatly impede field work.

Thomas Littleton's paper, "A Comparison of the Distribution of Two Species of Periploma (Bivalvia, Periplomatidae) in Matagorda Bay, Texas" is the kind of study of which we need many more, because it defines more precisely the environments of species.

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

(A Continuing Monograph)

PART II: GASTROPODA

Family NATICIDAE Gray, 1846 (Continued)

38. Natica floridana (Rehder, 1943)

The only evidence for this species in the offshore Texas waters is furnished by a single operculum obtained on Stetson Bank. Because fossil material is obtained at this spot, it is probably that the species no longer lives on the Texas coast, because in our extensive material no other evidence for this species was ever found.

Records HMNS Survey Collection: 1 lot (operculum from ± 30 fms. at Stetson Bank.)

Finally it must be remarked that there is in the Survey Collection a number of lots which I cannot place even generically. They mostly come from deeper water and are all juveniles. Unless better material becomes available it will be impossible to place most of this material even generically.

Family CREPIDULIDAE Fleming, 1822

In this remarkable family of gastropods the usually spirally coiled shell is hardly recognizable. The early whorls form but a minute part of the shell, which is almost exclusively formed by the enormously expanded last whorl. The animal inside this shell is thus, unless special measures are taken not well anchored. In the genus Crepidula a large deck is formed, in Calyptraea there is an internal spiral diaphragm, which is an extension similar to the deck in Crepidula. In Crucibulum this structure has evolved to a complete cup and finally in Cheilea the cup is incomplete.

Genus Calyptraea Lamarck, 1799

39. Calyptraea centralis Conrad, 1841

One of the smallest, but easily recognized species in this family. It is quite common on shelly bottoms between 8 and 20 fms. along the Texas coast. It also occurs in the Mudlump fauna. From Port Aransas southward it is on rare occasions taken in beachdrift. Not taken on the offshore coral and algal reefs but known from the shale domes such as Stetson Bank.

Records HMNS Survey Collection: 52 lots of which 9 contain live collected material.
Depth range: 0-55 fms.; alive 10-55 fms.
Geographical range: Texas to North Carolina; West Indies; Brazil.
Maximum size in HMNS Survey Collection: 8 mm.

Genus Crucibulum Schumacher, 1817

40. Crucibulum auricula (Gmelin, 1791)

This quite common species is often dredged alive along the Texas coast in waters between 8-25 fms. depth in many types of environments. Specimens from deeper water are often flatter and less elevated. C. striatum is apparently not found along the Texas coast. Juvenile specimens of auricula sometimes have the internal cup attached over a considerable distance along the rim of the cup so that these specimens could be mistaken for C. striatum. A very few specimens are known from the beaches.

Records HMNS Survey Collection: 48 lots of which 28 contain live collected material.
Depth range: 11-55 fms.; alive 11-43 fms.
Geographical range: Off South Carolina to Texas; West Indies to Brazil (Abbott, 1974).
Maximum size in HMNS Survey Collection: 25 mm.

Genus Crepidula Lamarck, 1799

In our area live 4 species none of which is particularly rare. The genus was recently discussed by Hoagland 1977 in Malacologia, Vol. 16, (2), pp. 353-420. All species are said to be protandrous, i.e. they start out as males and later become female. This change of sex has been well studied in the Calyptraeidae. See for further information Chapter 4 by Fretter and Graham in: Physiology of Mollusca, ed. by Wilbur and Yonge, Vol. 1, 1964.

Genus Crepidula Lamarck, 1799

41. Crepidula fornicata (Linne, 1758)

This species now lives in many parts of the world because it got transported with oyster brood for human consumption. The species originated in the Western Atlantic. The rate of progress of the species in Western Europe has been well documented (see v. Benthem Jutting in Fauna van Nederland). It also now lives on the West Coast of the USA.

Along the Texas coast the species is widespread and is often found on the beach both dead in drift or alive attached to other shells. It is remarkable that in many places in Western Europe the animal lives in stacks of sometimes 7-10 animals on oysters (f.i. Scheldt Estuary) but that along the Texas coast the animal is seldom if ever found on oysters. Instead, it lives attached to large specimens of Polinices, Busycons, etc. It lives on shelly bottoms and one lot comes from the algal reef at 18 fms.

Records HMNS Survey Collection: 61 lots of which 43 contain live collected material.
Depth range: 0-30 fms.; alive 0-27 fms.
Geographical range: Canada to Florida, Texas, introduced to west coast (Abbott, 1974)
Maximum size in HMNS Survey Collection: 44 mm.

42. Crepidula convexa (Say, 1822)

This smaller species is fairly common in Texas bays. It resembles a small fornicata but differs in several respects. At the place where the deck reaches the shell there is a clear muscular impression which is missing in fornicata. In the Texas bays often very slender and high forms are found presumably shaped that way because they were attached to eelgrass. Crepidula glauca Say is the same. Almost all our material comes from Matagorda and Aransas Bays and the Laguna Madre, but a few specimens were taken in the Mudlumps in the Mississippi Delta, Clay Pile Dome off Louisiana and one lot was dredged at 25 fms. These lots are probably Pleistocene in age.

Records HMNS Survey Collection: 16 lots of which 5 contain live collected material.
Depth range: 0-25 fms.; alive 1 fm.
Geographical range: Massachusettes to Texas, West Indies, Bermuda, California (Abbott, 1974).
Maximum size in HMNS Survey Collection: 11 mm.

43. Crepidula aculeata (Gmelin, 1791)

This well known species which lives on both coasts of the USA is the least common Crepidula in Texas. It occurs on shelly bottoms and has been taken once on the beach of Freeport.

Records HMNS Survey Collection: 11 lots of which 2 contain live collected material.
Depth range: 0-40 fms.; alive 8-25 fms.
Geographical range: North Carolina to Texas and to Brazil, Bermuda, and Central California to Chile (Abbott, 1974).
Maximum size in HMNS Survey Collection: 20 mm.

44. Crepidula plana Say, 1822

This quite common species is often found inside empty Polinices shells. Such specimens have as it were a negative curvature. In Texas sometimes specimens can be found that have reddish stripes and banding on them.

Records HMNS Survey Collection: 97 lots of which 58 contain live collected material.
Depth range: 0-50 fms.; alive 0-40 fms.
Geographical range: Canada to Texas and to Brazil; Bermuda (Abbott, 1974).
Maximum size in HMNS Survey Collection: 36 mm.

Genus Cheilea Modeer, 1793

45. Cheilea equestris (Linne, 1758)

This fairly thin shelled species is not rare along the Texas coast. Although we have a considerable number of lots, we have not seen live material but some material is rather fresh. Mostly on shelly bottoms, and rare on the coral reefs. In our collection

there is beautiful juvenile material which shows a smooth and somewhat inflated nuclear shell. These show that the cup originates as a continuation of the whorls, whereas the final shell is a large skirt-like structure.

Records HMNS Survey Collection: 25 lots, no live material but some fresh looking shells.

Depth range: 10-55 fms., optimal 15-30 fms.

Geographical range: Both sides of Florida, the West Indies to Brazil. Gulf of California to Chile. (Abbott, 1974)

Maximum size: 32 mm.

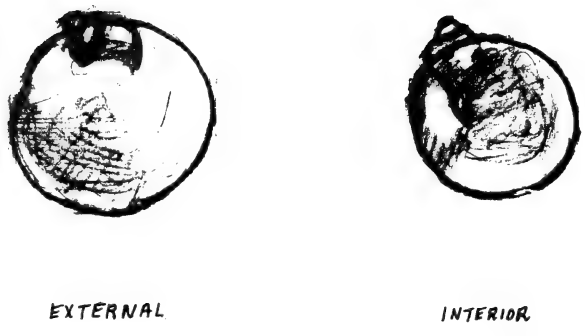

Fig. 1 Cheilea equestris (Linne, 1758) juvenile showing protoconch which is smooth and projecting. It helps form the adult cup. These drawings by Odé are from a shell from 24 fms. dredged 55 mi. SE of Freeport, Texas by the Bureau of Commercial Fisheries December 7, 1966.

Fig. 2 Cheilea equestris (Linne, 1758) is apparently a species that is found in several oceans. The specimen above was collected by Constance Boone in April, 1982, in the Indian Ocean off Onslow, West Australia. It occurs in the Atlantic and Pacific Oceans off our continent, according to Abbott, and Kay in Hawaiian Marine Shells says it is circumtropical.

Photo by Constance E. Boone

Family CAPULIDAE Fleming, 1822

Only a single species in the Western Gulf of Mexico. Abbott (1974) mentions that the Gulf of Mexico material is quite small compared to material from elsewhere in the Western Atlantic.

Genus Capulus Montfort, 1810

46. Capulus ungaricus (Linne, 1767)

This little shell has been taken but once off the Texas coast but a few times off Louisiana. The collection contains several quite juvenile specimens. These show a nuclear shell which is quite smooth. Only in the later growth stages the shell acquires the spiral striations. The only Texas material comes from 110 fms., 70 miles south of Freeport.

Records HMNS Survey Collection: 4 lots, no live material.
Depth range: 55-110 fms.
Geographical range: Greenland to off Florida, Bermuda. Arctic seas to Mediterranean (Abbott, 1974).
Maximum size: 9 mm.

(to be continued)

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DON'T BRING THESE HOME ALIVE

The Giant African Snail is common now throughout the Pacific and easily collected. In Guam we couldn't walk at night without stepping on them. However, please resist all temptation to bring them home alive. They are pests and we don't want them here. Achatina species may seem like exotic mollusks to be kept in captivity like the Florida tree snail, but it is against the law to bring them into the U.S. and customs inspectors will take them from you if you have them alive.

A recent story in the newspaper retold the story of the boy who returned from Hawaii in the 1960s with two live snails he released in his Miami, Florida yard. Inspectors had missed the snails in customs. These snails (which can grow to a foot in length and can weigh up to two pounds) multiplied, destroyed gardens and shrubs and ate paint off houses. Though the snails were confined to a 16-block area, it took years and cost $1 million to kill them.

In Vol. 62 (1), July, 1948, G.D. Hanna wrote that indiscriminate scattering of this mollusk in the Pacific islands prior to or during the war (II) by Japanese caused many beautiful islands to become barren wastes. The animals are extremely prolific, he said, and remarked that two snails left at Steinhart Aquarium on loan laid 246 eggs at one period.

C.E.B.

OCCURRENCE OF A DECLINING AQUATIC GASTROPOD, *Elimia comalensis*, IN A RESERVOIR HABITAT (PLEUROCERIDAE)

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Elimia (*Elimia*) *comalensis* (Pilsbry, 1890) is an aquatic gastropod restricted to limestone substrates in moderately fast flowing waters (generally associated with springs) in the Texas Hill Country (see Fullington 1978:71 *et seq.*). As the easternmost representative of the western American subgenus *Elimia*, this species is of particular zoogeographic significance. This species is also of special concern due to drastically declining population levels (Neck, in press). Many of the relatively few known localities are also the site of thriving populations of the introduced thiarid species *Melanoides tuberculata* (Muller, 1774) and *Melania granifera* (Lamarck, 1822); see discussions by Fullington (1978) and Murray (1966, 1976) for details.

On 11 March 1982, I collected five living individuals of *E. comalensis* from the bottom (then subaerial) of Town Lake (Colorado River) in Austin, Travis County, Texas. Recovered specimens were of a size comparable to other modern population samples. Length ranged from 12.4 to 16.7 mm with an average length of 14.9 mm. All specimens were of the smooth form.

The collection site consisted of a rock and silt substrate about 3 meters from the edge of the lake. A substantial growth of water milfoil (*Myriophyllum* sp.) had occurred at the collection site. Of possible significance was the absence of either thiarid species. Also of probable importance were the adjacent intake pipes to provide cooling water for a nearby electrical generation plant. Water currents generated by removal of this water may elevate oxygen levels and reduce levels of metabalites and silt.

Normal water depth was approximately 70 cm; water level had been dropped on 8 March to a level of 127.6 meters msl (approximately 1 m below normal level). The normal level of Town Lake is regulated very tightly under normal conditions. The spring 1982 lowering allowed bridge construction activities at a site below the collection locality. This lowered lake level was the lowest allowed since 1973; impoundment of Town Lake began in September 1960 following construction of Longhorn Dam.

The significance of this record is the occurrence of a scarce lotic water species in a shallow reservoir habitat. *E. comalensis* may be able to establish populations in microhabitats previously thought to be unsuitable.

Additionally, this record constitutes a new county record for E. comalensis. Previous compilations of freshwater gastropod records of Texas (Singley 1893; Strecker 1935; Fullington 1978) have reported no records for Travis County. However, this record should not be considered to be an expansion of the macro-geographic range of this species. Rather, this reservoir population is derived from a population which has existed in Barton Creek close to the herein reported locality (see fig. 1). Populations at Barton Springs have been long impacted by development of a creekbed swimming pool, but populations have been able to survive in this area.

Acknowledgement. I thank T. B. Samsel III for drafting Figure I.

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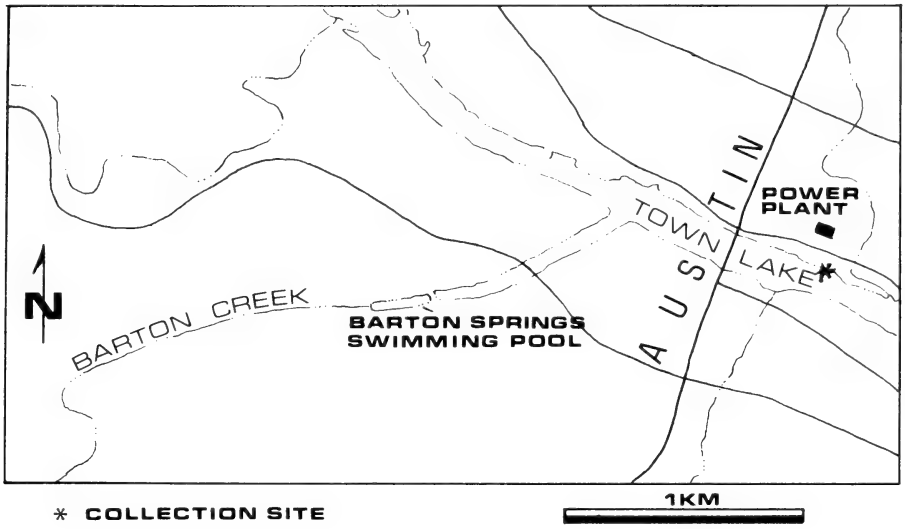

Figure 1. Map of portion of Town Lake, Austin, Travis Co., Texas, showing location of Elimia comalensis.

AMERICAN MALACOLOGICAL UNION MEETING 1983

The 49th annual meeting of the American Malacological Union will be held August 7-13, 1983 on the campus of the University of Washington, Seattle, Washington.

Dr. Alan Kohn, President, has announced that a varied program planned to interest both professional and amateur members is planned, including marine, terrestrial and fossil field trips mid-week, an auction of shells and malacobilia, a banquet cruise through the Lake Washington ship canal locks to an island in Puget Sound for a Northwest Indian style salmon barbecue. Plans include an optional weekend field trip to the Friday Harbor Laboratories after the meeting.

Featured symposia will include one on contributions to medicine and physiology through the study of mollusks and another on mollusks of the past. The Western Society of Malacologists will join AMU at this meeting planning a symposium on avian molluscivores. There will be workshops on malacological publications, both professional and non-professional. There will be sessions on Cephalopods and Pacific Northwest marine mollusks.

HCS members are welcome to attend the AMU meeting. Information on registration and housing reservations (on campus this year) will be available at the April meeting.

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WE ANNOUNCE

A new and willing aide in producing Texas Conchologist!

Emily Oakes is our club member who has typed this issue of TC and who has volunteered to continue this chore. We are grateful for her help. Perhaps members are not aware that we maintain editorial standards requiring all articles to be retyped by our typist using certain type so our journal looks more professional. Emily purchased the proper type ball and has arranged to use her church's typewriter. Thank her next time you see her.

The Editor

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Texas CONCHOLOGIST

VOLUME XIX NO. 3

APRIL, 1983

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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.

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 quarterlies of that fiscal year. Members receive meeting Newsletters and have all other privileges provided by the Society's by-laws.

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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.

SIMNIA HOLOTYPE MEASUREMENT CORRECTION

By Constance Boone

The most common Simnia found on Texas beaches is the one that washes up with rolls of the soft coral gorgonian Leptogorgia setacea, commonly called sea whip. This Simnia was named Simnialena marferula by Crawford N. Cate in 1973 in "A Systematic Revision of the Recent Cypraeid Family Ovulidae", supplement of The Veliger, Vol. 15, January 31, 1973, page 75. Measurements of the holotype were given as L. 8.4; W. 5.6; H. 3.9 mm. The paper states that the holotype was No. 1293 at the Los Angeles County Museum.

In January, 1983, measurements of the holotype at LACM revealed the holotype measures L. 15.4; W. 5.9; H. 4.2 mm. Dr. James H. McLean, Malacology Section of the Natural History Museum of Los Angeles County, did the measurement with caliper under a microscope.

The measurement was judged necessary because for some time workers in Texas have been unable to understand the small length size for our common Simnia. Dr. T. E. Pulley, director emeritus and manager of collections of the Houston Museum of Natural Science, responded to this author's question concerning the published photo on the holotype by figuring dimensions mathematically from the photo and pronouncing that an error had been made in the published measurement.

The published measurements of the holotype have been repeated in Andrews' Shells and Shores of Texas, 1977, page 123, using an enlargement of the same photo used in her earlier book Sea Shells of the Texas Coast, 1971, page 98, where the shell was called Neosimnia uniplicata. Cate had informed Andrews that this photo was his new Simnialena marferula and Andrews gave the photo that name in her 1977 edition. In 1971 Andrews gave measurements of the shell as 12 to 18 mm. in length. In 1977 she used the name given by Cate and also his measurement of 8.4 mm. for length.

The recent Supplement 2 of Standard Catalog of Shells, October, 1982, repeats the Cate measurements.

It is likely that the stated length of 8.4 mm., as published in the original description, was a typographical error for 18.4 mm., since the measurements by Cate were not very accurate for the other dimensions either.

The Los Angeles County Museum does not have paratypes of Cate's Simnialena marferula. We do not know if any exist in other museums. The Cate collection has been sold, and some of it has been placed in the American Museum of Natural History in New York. The late Bill Old had promised to check whether specimens of this Simnia were in the material AMNH had received.

The holotype we viewed at LACM is definitely like our commonly beached Simnia. It is yellow and has irregularly incised, transverse lines covering the entire dorsal area, one of the distinctions made by Cate in separating this from S. uniplicata.

TEXAS CONCHOLOGIST Vol. XIX, No. 3, April, 1983

TRACHYPOLLIA SCLERA WOODRING, 1928, IN THE RECENT FAUNA OF THE GULF OF MEXICO

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The genus Trachypollia was named by Woodring (1928, p. 268) for a species of small gastropods from the basal Pleistocene of Bowden, Jamaica. He compared the species to members of Engina and Pollia and obviously considered it to be a Buccinid. At the time he noted that there were "no similar fossil or living species" in the West Indian region and named as type a new species T. sclera.

The name has been completely ignored by all workers except Wenz (1941, p. 1197, fig. 3408), who just repeated Woodring's illustration and placement. It was not until 1972 that Radwin and D'Attilio recognized it for what it was--a member of the Ocenebrinae, with three living species: "Buccinum" lugubre C. B. Adams, 1852; "Drupa" didyma Schwengel, 1943; and "Purpura" nodulosa C. B. Adams, 1845. In their work they figured the radulae and protoconchs of these three species, one of which is reproduced here.

The genus is characterized by being rather small, nonvaricate, with small denticles on both the inner and outer apertural lips. All species have a protoconch of several papillose whorls and an ocenebrine operculum. The known species were originally placed into a variety of genera and it was obvious that the group needed a new genus; recognition of Trachypollia as that taxon is a major coup for Radwin and D'Attilio.

Although the species of this group have been referred to the genus Morula Schumacher, 1817 (type species: Morula papillosa Schumacher = Drupa uva Röding, 1798), only T. nodulosa bears any resemblance to the typical Morula uva, and this is due more to convergence than to especially close relationship. The overall "black-berry" shape is similar, but the inner lip in Morula is the patulous thaid type and the inner lip of Trachypollia is the erect muricoid type. In Morula there is a strong median columellar fold not seen in Trachypollia. In addition, the radulae are dissimilar in that the rachidian tooth in Morula is flat and that of Trachypollia is curved in the typical ocenebrine manner.

It is obvious that the Muricidae grade into the Thaididae and it is in the vicinity of Morula that the distinctions become the most blurred, but I still feel that there is enough morphological difference to separate the two families.

In the collection of the Houston Museum of Natural Science, as part of the Northwest Gulf Population Survey, there are numerous lots of small muricid species tentatively identified by Helmer Odé as Risomurex roseus. Some time back he sent a sample to me for identification and at that time

the best I could say was that it was not roseus, but I had no idea what it could be.

A recent visit to the museum reawakened my curiosity over the group and I decided to "try harder". By chance, in the interval since I had looked at Ode's "roseus" we had collected a large lot of material at Moin Bay, Costa Rica, and in this I had identified a species as Trachypollia sclera--alive and well in Costa Rica. To my surprise, when I began searching for a name for the Gulf shell I compared it with the Costa Rican specimens and, amazingly, it was the same.

Thus, Trachypollia sclera is not only alive, but evidently thriving in the Gulf of Mexico, if the Houston collection is any indication. There are numerous lots, mostly from depths of 10 to 25 fms. Radwin and D'Attilio (1976, p. 134) cite Trachypollia didyma as occurring on the Texas offshore reefs. I have not seen any specimens of T. didyma from Texas and they may well have mistaken T. sclera for T. didyma, which is more inflated, more heavily beaded shell.

The presence of the denticulated inner lip causes the species of Trachypollia to have a superficial resemblance to the members of Risomurex which I consider a subgenus of Muricopsis, but the two groups have very different protoconchs. All members of Risomurex have a smooth, one and one-half whorl, keeled protoconch, in contrast to the four or five markedly papillose whorls in Trachypollia.

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PLATE EXPLANATION

Figure

1. Trachypollia sclera Woodring (X 3)

   44 m, 92 km southeast of Freeport, Texas; Houston Museum Northwest Gulf Population Survey

   Height 16. 3, diameter 8.0 mm.

2. Trachypollia didyma (Schwengel) (X 3)

   50 m, off Palm Beach, Florida,

   Height 13.5 mm, diameter 7.2 mm,

3,4. Trachypollia lugubris (C. B. Adams)

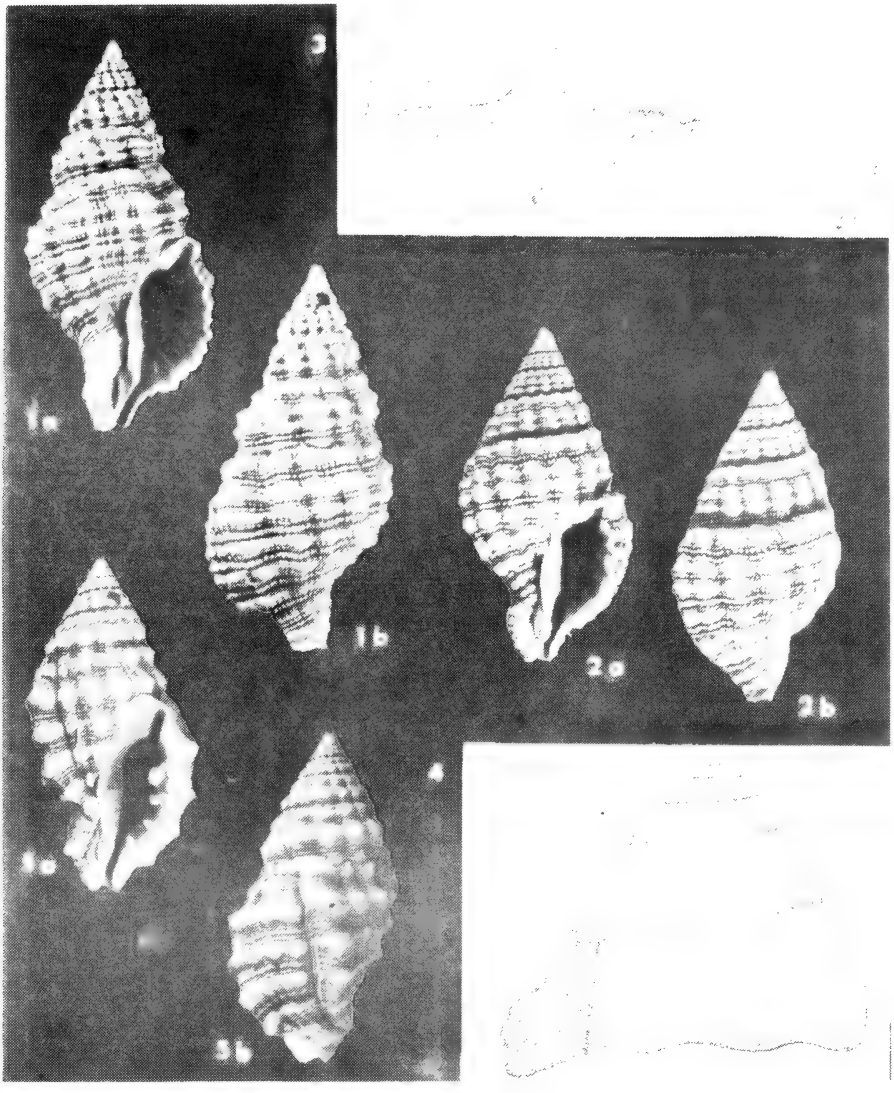
   3. Radula (Radwin and D'Attilio, 1972, fig. 5)

   4. Protoconch (Radwin and D'Attilio, 1972. fig. 4)

5. Trachypollia nodulosa (C, B. Adams) (X 2)

   Bone Key, Florida.

   Height 19.9 mm, diameter 10.4 mm.


3
1a
1b
2a
2b
4
3a
3b

MONOGRAPH

By H. Odé

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

(A Continuing Monograph)

PART II: GASTROPODA

Family BUCCINIDAE Rafinesque, 1815

Several species of this worldwide family live in the Western Gulf of Mexico in various types of habitat. The assignment of the various genera to a number of subfamilies is not quite clear. In Texas the genera Bartschia, Bailya, Engina, Colubraria, Pisania, Cantharus and Antillophos occur. Most of these genera are restricted to warmer waters.

Genus Cantharus Roding, 1798

In the Western Gulf of Mexico live two species, each in a different environment. Two other species formerly placed with Cantharus we list now, in accordance with the usage of Abbott, 1974, in Pisania subgenus Pollia. These four species form the bulk of all Buccinidae in the Western Gulf.

47. Cantharus multangulus (Philippi, 1848)

In our collection are 3 lots: one consists of a single live collected specimen from the offshore coral reefs. The color of its operculum is a golden brown, much lighter than that of P. tincta or C. cancellarius. The other two lots consist of old, fragmented material.

Records HMNS Survey Collection: 3 lots, one containing live collected material.
Depth range: 25-28 fms. (live); 33-55 fms. (dead).
Geographical range: North Carolina to Yucatan, Cuba and Bahamas (Abbott, 1974).
Maximum size: 23 mm.

48. Cantharus cancellarius (Conrad, 1846)

This is by far the most common buccinid of the Texas Coast, where it lives in the shallow depth zone between the beach and 55 fms. (dead), to 25 fms. (live), on sand and mud bottoms. Not a single specimen has been found on the offshore coral reefs, where it is replaced by Pisania auritula. On rocky and shelly bottoms such as the fossil beach ridges offshore Freeport or on some of the shale domes offshore Texas and Louisiana (f. i. Stetson Bank) one finds populations of Pisania tincta. Cantharus cancellarius is often found on on the beach, where it is an important source of shelter for

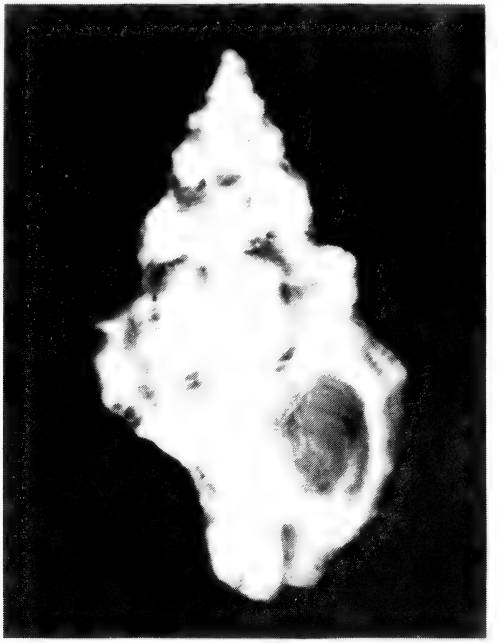


Fig. 1 Cantharus multangulus (Philippi, 1848) taken by divers from algal clumps, called the "24 fm. lump," 113 miles SE of Galveston, Texas, October 7, 1967.

Fig. 2 Cantharus cancellarius (Conrad, 1846) trawled at 7½ fms., 7 miles SSE of Port O'Connor, Texas, by the Bureau of Commercial Fisheries, trip of August 10-25, 1965.

small hermit crabs.

The nuclear whorls of C. cancellarius are quite regular. There are about 2-3 whorls, regularly increasing in size. They are glassy and smooth; the mature shell starts suddenly. In mature specimens the costae quite clearly diminish in strength on the last whorl and the shell assumes a spirally obvious sculpture. The coloring of this species is uniform, most a dirty brown or reddish dark brown with periostracum or whitish without periostracum.

Records HMNS Survey Collection: 55 lots of which 29 contain live collected material.
Depth range: 0 (beach) to 25 fms. (live); 0 (beach) to 55 fms. (dead).
Geological range: West Coast of Florida to Texas and Yucatan (Abbott, 1974).
Maximum size: 36 mm.

49. Pisania tincta (Conrad, 1846)

Although now placed in Pisania this species is closely related to Cantharus cancellarius. I do agree, however, with its placement in Pisania because its nucleus is definitely of a different shape than that of cancellarius. It is more bulbous and shorter but is very close to that of its closese relative P. auritula (Link) which has the same type of nucleus. The main difference between these two species (auritula and tincta) seems to be their habitat along the Texas-Louisiana coast. P. auritula lives exclusively in coral and algal reef environment, whereas P. tincta can establish itself in sandy shelly habitats and on rocky substrate, but avoids calcareous environment. In Texas P. tincta is found on the Pleistocene beach ridges off Freeport and sometimes on manmade jetties. It has been taken on the beach. Cold winters appear to wipe out populations close to the shoreline. In general, P. tincta is more slender, darker colored, and less sculptured than P. auritula.

Records HMNS Survey Collection: 14 lots, of which 8 contain live collected material.
Depth range: beach to 12 fms. (live); beach to 15 fms. (dead).
Geographical range: North Carolina to Florida; Texas, West Indies; Brazil (Abbott, 1974).
Maximum size: 32 mm.

50. Pisania auritula (Link, 1807)

This species can be mistaken for P. tincta but its habitat is quite different. Mature specimens are much broader and coarser than those of P. tincta, but very small juvenile material is almost impossible to identify on shape alone. This species is widespread throughout the offshore calcareous environment.

Records HMNS Survey Collection: 10 lots of which 4 contain live collected material.
Depth range: 13-16 fms. (live); 13-16 fms. (dead).
Geographical range: Southeast Florida and the West Indies to Brazil; Bermuda (Abbott, 1974).
Maximum size: 35 mm.

Fig. 3 Pisania tincta (Conrad, 1846) taken by a diver from a limestone lump, 25 to 50 feet, one and one-half miles off Padre Island, Texas, September 25, 1966.

Fig. 4 Pisania auritula (Link, 1807) taken by a diver from "East Flower Gardens," coral reef 103 miles SE of Galveston, Texas. 13-16 fms., October 8, 1967.

51. Pisania pusio (Linne, 1758)

A single very worn, but still colorful, specimen was taken from the coral reefs. It is a very characteristic form. It must be noted that no juvenile material was taken,

Records HMNS Survey Collection: 1 lot; no live material.
Depth range: 13-16 fms. (dead)
Geographical range: Southeast Florida and the West Indies to Brazil; Bermuda (Abbott, 1974).
Maximum size: 34 mm.

52. Colubraria lanceolata (Menke, 1828)

This easily recognized species, of which there are several lots in our collection, has not been found alive. Its nuclear whorls appear at the same time somewhat bulbous and flattened because they seem to be planispiral, in contrast with the nucleus of Colubraria obscura which is quite different (not planispiral). Most of our specimens have lost their color but in some brown flecks can be observed.

Records HMNS Survey Collection: 10 lots, no live material.
Depth range: 10-51 fms. (dead).
Geographical Range: North Carolina to Florida to Brazil (Abbott, 1974).
Maximum size: 24 mm.

53. Colubraria obscura (Reeve, 1844)

Fragments of this species in shell rubble taken from the coral reefs are fairly common, but good perfect shells are quite rare. We have two huge specimens, the largest of which measures almost 2 inches in length, which was collected alive on the reef. The nucleus consists of two whorls on top of each other and the upper one is rather bulbous.

Records HMNS Survey Collection: 11 lots, one containing live collected material.
Depth range: 10 fms. (live); 13-36 fms. (dead).
Geographical range: Southeast Florida to Lesser Antilles to Brazil (Abbott, 1974).
Maximum size: 49 mm.

54. Bailya parva (A. Adams. 1850)

Somewhat of a surprise are 4 lots of this small species which we did not recognize in the past. One specimen was taken alive off Freeport from a sponge in water of 28 fms. depth. This specimen is not flesh colored but has a background of cream white with brown flecks. There is an area without brown forming a white band on the last whorl. The nucleus is depressed and smooth.

Fig. 5 Colubraria lanceolata (Menke, 1828) 14.4 mm., collected by dredging, 30-40 fms., at Stetson Bank, 74 miles SSE of Galveston, Texas, by T. E. Pulley and Paul McGee, 1963.

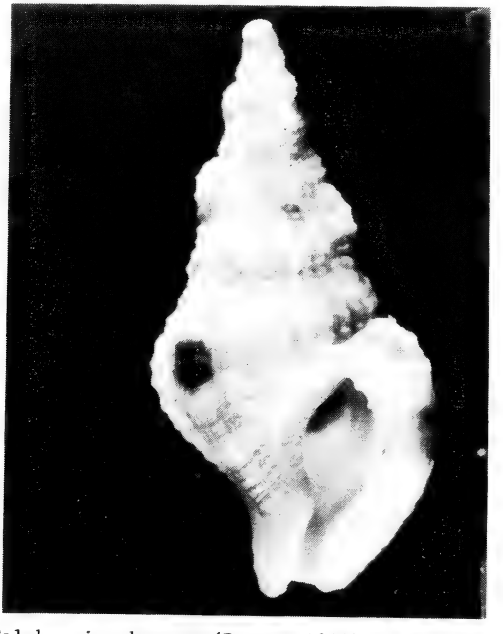


Fig. 6 Colubraria obscura (Reeve, 1844) 12.35 mm., taken by a diver from 65-85 ft., at a coral reef 103 miles SE of Galveston, Texas, Oct. 6, 1967.

Records HMNS Survey Collection: 4 lots of which one contains live collected material.
Depth range: 28 fms. (live); 4-12 fms. (dead).
Geographical range: Bahamas and the West Indies (Abbott, 1974).
Maximum size: 13½ mm.

55. Engina turbinella (Kiener, 1835)

This well known species is restricted to the coral reefs. The Texas material appears to be more nodulose than the figure in Abbott and approaches E. corinnae in that respect. It may be observed that very small juvenile material appears to be much more slender than full grown material. When the animal grows the shell assumes the knobby and colored aspect of the mature animal.

Records HMNS Survey Collection: 7 lots of which 2 contain live collected material.
Depth range: 10-16 fms. (live); 2-16 fms. (dead).
Geographical range: Southeast Florida to Brazil (Abbott, 1974).
Maximum size: 12 mm.

56. Engina corinnae Crovo, 1971

This is definitely a surprise. We did not recognize this species when we first worked through the material of the coral reefs, but set it apart for further consideration. It differs from the other Engina in that it appears knobbier and its color is much lighter. Quite characteristic is the brownish band between the knobs and the lavender or mauve aperture. In my opinion it remains somewhat doubtful whether this somewhat different looking shell is truly a different species.

Records HMNS Survey Collection: 1 lot, containing live collected material.
Depth range: 18 fms. (live).
Geographical range: Only reported from Southeast Florida (Abbott, 1974).
Maximum size: 9.3 mm.

57. Bartschia agassizi (Clench and Aguayo, 1941).

In the collection are two lots of this slender fusiform buccinid which earlier has been reported as Antemetula agassizi. It is a deeper water form about which practically nothing is known.

Records HMNS Survey Collection: 2 lots, no live material.
Depth range: 70 fms. (dead).
Geographical range: Known from the Gulf of Mexico only (Abbott, 1974).
Maximum size: 26 mm.

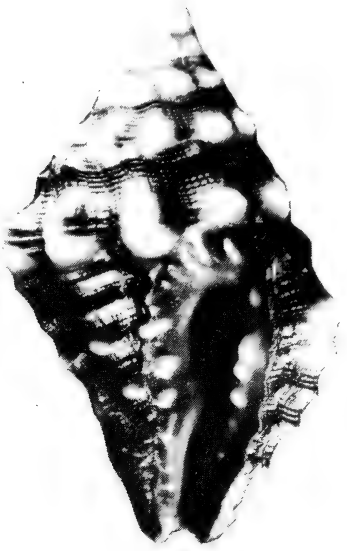


Fig. 7 Engina turbinella (Kiener, 1835) 11.6 mm., collected by divers, 13-16 fms., at "East Flower Gardens," coral reef 103 miles SE of Galveston, Texas, Oct. 8, 1967.

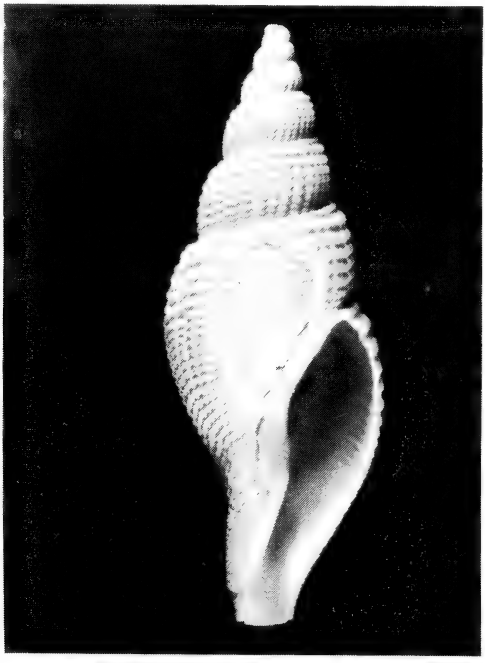


Fig. 8 Bartschia agassizi (Clench and Aguayo, 1941) 18.8 mm., dredged from 70 fms., mud bottom, 68 miles SSE of Freeport, Texas, by H. Geis and S. Stubbs, July 18, 1967.

58. Antillophos candei (Orbigny, 1842)

This is a fairly common species in somewhat deeper water. In our collection there is no live taken material, but there are some rather fresh shells. These sometimes show vague yellow bands on the whorls. In our material is mixed another somewhat smaller species, that must be quite closely related and which shows 3 brown bands. It is considerably smaller than candei, has a deeper suture and is clearly less beaded. Specimens of candei of the same length are more squat in outline and much coarser looking. Since I do not know the name I will call it here Species A. Abbott, 1974, mentions two other species--A. adelus (Schwengel, 1942), and A. beauii (Fischer and Bernardi, 1860). Antillophos is immediately recognized by its glassy, shiny and carinated nucleus which is different from other buccinids here discussed.

Records HMNS Survey Collection: 18 lots, no live material.
Depth range: 4 fms. to 70 fms. (dead).
Geographical range: Both sides of Florida, West Indies to Brazil (Abbott, 1974).
Maximum size: 27 mm.

59. Antillophos sp. A

A smaller, more slender species with deeper suture, finer cancellation, deeper color and less beaded.

Records HMNS Survey Collection: 5 lots, no live material.
Depth range: 10-55 fms. (dead).
Maximum size: 16mm.

(To be continued)

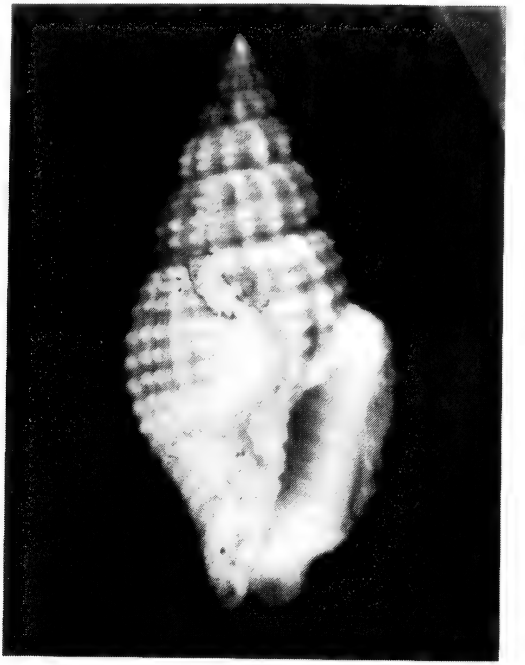


Fig. 9 Antillophos candei (Orbigny, 1842) dredged from 50 fms. by Bureau of Commercial Fisheries, 69 miles SSE of Freeport, Texas, Sept. 1, 1966.

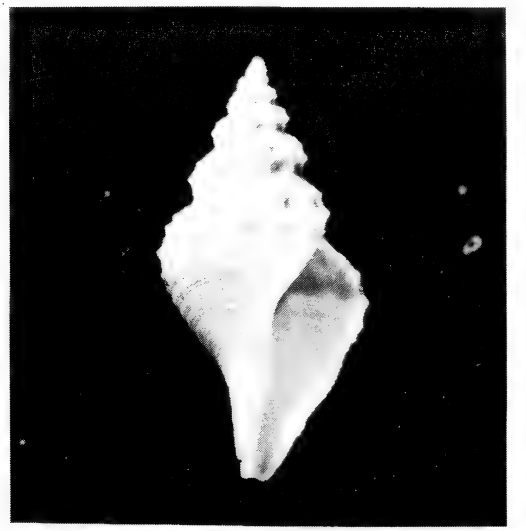


Fig. 10 Antillophos sp. A. 8.5 mm., dredged from 30-40 fms., Stetson Bank, 74 miles SSE of Galveston, Texas, by T. E. Pulley and Paul McGee, 1963.

SEARCH AND SEIZURE

BY CONSTANCE BOONE

In a separate article in this issue, the correction is made on the measurement of the holotype of our common Simnia. We address remarks here to other problems, because we seek help from our members and from readers elsewhere.

In reviewing the material at the Houston Museum of Natural Science we see several groups of Simnias from Texas waters. An error was made by Cate in naming what gorgonian rolls up commonly on southern beaches in Texas. Cate said his Simnialena marferula washed up on Leptogorgia virgulata. This is incorrect, and Andrews and other workers have stated correctly that this sea whip is Leptogorgia setacea. However, we do have Leptogorgia virgulata, which is a sea whip looking very much like L. setacea to me except that Dr. T. E. Pulley explains that it is branched. L. virgulata occurs attached to the jetties and has been collected even on the Freeport jetties, I understand. It may also occur offshore at oil rig sites. We know that gorgonia is collected there, as well as one more smaller "fan" coral.

We need to have information on the Simnias collected specifically from the different types of coral and need to have animal observations. What we really have we do not know. There do not seem to be animal studies to help us in making determinations. Names we have used may not be correct at all for the material we have from various localities, including the offshore material.

Personal communication with one collector in Texas, Carl Young of Corpus Christi, confirms that he collected Simnias on the branched gorgonian on the jetties at Port Aransas and that they seemed different. However, he states the gorgonian was usually yellow and the shells were usually yellow. Following Cate, Andrews in 1977 states that the color was deep rose brown overall for this Simnia she designated Simnialena uniplicata. We do not know of any Simnia in Texas that is always this color. Simnias seem to take the color of the host coral and may be yellow, orangish, purplish or rose.

We also wish to discover whether there are any differences in the animal patterns. Identification of Ovulidae often depends on the animal mantle patterns. We have been trying to find pictures of living animals named. It has become a puzzle even here. American Seashells, Abbott, 1974, has a picture of Simnia acicularis (Lamarck, 1810) on page 152 showing a geometric pattern of black "blocks" on the mantle. There is no way for me to tell what gorgonian it shows. In Compendium of Seashells, Abbott and Dance, 1982, there is a color photo of a Simnia acicularis animal and it seems somewhat different, a less dense pattern. Again, in The Audubon Society Field Guide of North American Seashells, Rehder, 1981, on page 687 of photos there is a picture of what is supposed to be Simnia acicularis and it is quite different with a clear looking mantle with white tufts. I do

not know what we are really seeing in the photos. Nor do I know what S. uniplicata really looks like. Our common Simnia marferula seems to have a black border geometric design on the exposed mantle. Nobody has really looked enough at the animals to say for sure if there are differences in Simnias occuring in Texas waters. I do not have photos of animals.

We need comparison material from everywhere in the Western Atlantic. If you collect in Florida or the Caribbean this summer, please keep in mind we would like to have Simnias, preferably preserved in isopropyl alcohol, at least, with some of the host coral, if possible. If you are a photographer, help us take some closeup photos. Maybe we can solve something.

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Janey Moore of Clute, Texas, has added another record to collections in Texas by discovering live Brachidontes domingensis (Lamarck, 1819) on the jetties on both sides of the Brazos River at Freeport. She found the first ones on March 21, 1982, at the Surfside jetty about half way out the jetty in a tide pool at low tide. The small dark brown mussel is similar to B. exustus (Linne, 1758) but is "more arched and with fewer radial riblets forming about 50 to 70 small denticles on the edge of the valves" according to Abbott's American Seashells, 1974. The small shells were found among striped anemones, according to Janey, and with Isognomon alatus (Gmelin, 1791). Janey found the mussels several months later about halfway out the Quintana side jetties at Freeport. This mussel normally occurs in the Caribbean. Specimens have been donated to the Houston Museum of Natural Science and identification confirmed by Dr. T. E. Pulley.

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Last November while on an HMNS field trip to Port Aransas, we crossed over by boat to San Jose Island to collect. We were told by the University of Texas Marine Institute that we should confine our collecting to the area along the beach to the fence because the area beyond that was patrolled and privately owned. It is maintained as a ranch. At the end of our day I met up with Theresa Stelzig of Portland, an active sheller with the Coastal Bend Shell Club at Corpus Christi. She has made some spectacular finds farther up the island of San Jose and had that day been up about 3½ to 4 miles where the better finds are made. You will recall we published a story of many Amaea mitchelli being collected there. I remarked to her about our information about going up that beach.

Theresa has now given me more information. Yes, that is private land, of course; and yes, it is patrolled and you may be asked to leave. It seems that the patrols don't bother "older couples or older shellers" but that anyone younger may be asked to leave. Others have reported this also. You do not have the right to collect beyond that fence. It is true that shellers from the Corpus club continue to go up that island. Many of them do know the patrollers.

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And, finally, there is always one good story to tell about a fabulous find!!

Our member, Bart Jones who has Shells and Accessories on Chimney Rock north of the Southwest Freeway and close to Westheimer, took a family cruise to the Caribbean and stopped at the island of St. Martin. At a little side shop he found a few shells he bought for $2.10.

One of the shells has now been identified as Morum dennisoni, (Reeve, 1842), a RARE Morum. One other is as yet an unidentified, unusual Lyria, I think. The other shell is Tugurium caribaeum (Petit, 1856), the carrier shell many of us got from the dredge baskets from the Gulf of Mexico.

What he didn't take, because he couldn't stand what the woman had done with it, was a Pleurotomaria!!!!! It seems the shop owner was making animals out of the shells her husband got from deep dredging. They knew nothing about shells. Bart's wife told him he would regret not buying that shell! He does!

So, call Bart and find out where that shop is if you are going there this summer. Who knows what you will find.

In this case, Bart didn't even try to drive a hard bargain. The price he paid was what was asked and he didn't know what he had either!

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SHELLS IN THE NEWS

In the last issue of TC we had a short note on the devastation wrought by the Giant African Snail wherever it was introduced. In the Travel Section of The Houston Chronicle, March 6, 1983, there was a funny, but sad perhaps, note about the owner of a resort, Coco Palms, on Kauai, Hawaii, who paid $3,000 for wood ducks to add color to the lagoon on her property. To her horror, the ducks ate the elegant water lilies in the lagoon, so the owner put a bounty on the head of every duck! Guests were encouraged to help catch the ducks. According to the story, "yesterday's wood ducks are today's snails". Now the owner, every Wednesday, gives guests plastic gloves, plastic pickle buckets and sticks and asks them to catch the African Snails eating the resort's foliage. The guest who comes back with the most snails earns a free dinner at the resort's restaurant. During the first week of the hunt 188 pounds of snails were gathered!

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Via the Southwest Florida Shell News, Vol. 17, No. 2, March, 1983, we learned that the Sanibel City Council has again rejected restrictions on taking live shells in the waters around the island city. This time the restriction proposed was rejected because the City Attorney ruled that a municipal ordinance would be unconstitutional. Only the State of Florida has the power to regulate mollusks and

other saltwater resources on sovereign owned lands to the State of Florida. State lawmakers have refused so far to consider adopting special legislation to ban or restrict shelling around Sanibel because of the lack of scientific evidence that the mollusks are actually threatened.

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Also from the Southwest Florida Shell News of March, 1983, we gleaned some facts about experiments in hatching and rearing Strombus gigas being conducted by Scott Siddall and others at the University of Miami. The article had appeared originally in the Wall Street Journal, authored by James P. Sterba.

Mr. Siddall said five persons operating a modest hatchery could produce three million to 11 million five-month-old, one-inch-long conchs for from 1.7 cents to 5.6 cents each. Only 4 to 14 percent of them would have to survive the 2½ years to adulthood to pay the hatchery's operating costs.

Queen Conchs are cheap to raise because they are vegetarians. He stated that, like other marine animals, many conchs die as infants in the ocean. To protect itself, the conch, though slow moving, learns to make an occasional leap of several inches to cut the trail of slime it leaves and thus confounds its pursuers.

The conch can also regenerate a part lost from an underwater predator. Even the male can regenerate his most important part, the researcher stated.

The Miami research team has related field-testing projects in the Caribbean. This is considered very important because conchs are a major food source throughout the islands. The report says that tourists are learning to enjoy conch fritters, conch salad, conch chowder, even conchburgers and conch pizza. Conch meat has also become a "chic import in the U. S. , selling for $4 a pound in Miami and as 'Atlantic Abalone' for $7.99 at points north." It takes four adult conchs to make a pound. That's four million of them each year to provide the million pounds of frozen conch meat entering the U. S.

Therefore, conchs are getting harder to find throughout the Caribbean. This makes the conch hatcheries very important for the future survival of Strombus gigas.

Strombus gigas also is a historic symbol in Florida. The article pointed out that British loyalists during the Revolutionary War fled to Florida. When Britain gave Florida to Spain about 5,000 of them moved to the Bahamas. They came to be known as "the conchs". They drifted back to the Florida Keys later and used conch shells as their symbols. Only recently the Keys threatened to secede and be known as the Conch Republic in a fight with the U. S. Border Patrol.

At the 1981 meeting of the American Malacological Union at Ft. Lauderdale, Florida, one of Mr. Siddall's hatchlings was offered in the auction with papers to prove it was truly a hatchling. This Editor tried to get it but was outbid finally!

C. B.

CABO SAN LUCAS, BAJA CALIFORNIA By Cynthia Biasca

The week before Christmas, Frank and I stayed with our daughter and son-in-law and their 9 month old son at a house they had rented 5 miles from Cabo San Lucas in a fairly new development associated with Hotel Cabo Baja. From the upper floor of the house we had a spectacular view of Cabo San Lucas, the bay in front of it and the famous arch in the rocky point that juts out from behind the Hotel Solmar. A 5 minute walk took us to the rocks below the Hotel Cabo Baja, where I spent several afternoons combing them for shells, the low tide coming in late afternoon.

The 5 of us also went to other bays and rocky areas along the coast east of Cabo San Lucas, where we snorkeled and clambered over rocks. We all took turns carrying the baby in his backpack, and grew adept at walking over rocks with the utmost caution, bending carefully to pick up shells so we wouldn't catapult him onto the rocks! We liked Santa Maria Bay, east of Hotel Twin Dolphins, best for snorkeling, and the rocks in front of the hotel and to the west best for rock shells. A curious finding was that in only one small set of rocks, protected somewhat, perhaps, by larger rock formations nearby, were the Collisella atrata (Carpenter) absolutely clean, whereas everywhere else along the coast, even a few yards away, they were heavily encrusted.

While snorkeling, we collected 5 Hexaplex princeps Broderip, 2 in quite good condition, the others badly eroded; 5 Conus diadema Sowerby; 1 Opeatostoma pseudodon Burrows; and a few Patella mexicana (Broderip and Sowerby) which Abbott says in American Seashells is the largest living limpet in the world, although ours were a mere 2 or 3 inches.

Most pleasurable were the hours exploring the rocks (sometimes with waves crashing over them) and the tide pools at lowest tide. At the highest levels were the Littorina (5 species) and the nerites, Nerita funiculata Menke and Nerita scabricosta Lamarck. However, at a certain point in the tide change, the N. scabricosta were found huddled in large groups just above the tide line, and only gradually climbed much higher up on the rocks as I watched.

At mid-tide line were many Collisella atrata (Carpenter) and Acmaea fascicularis (Menke); Siphonaria maura Sowerby, Siphonaria palmata Carpenter and 1 Trimusculus stellatus Sowerby; and hundreds of Purpura patella pansa Gould. At the lowest tide line were the pretty Fissurella rubropicta Pilsbry; several Thais planospira Lamarck, a most beautiful shell; a few Thais triangularis (Blainville); Thais speciosa (Valenciennes) with its yellow columella; and Thais haemastoma biserialis (Blainville) very much like the Texas T. haemastoma.

In the tide pools, mostly in crevices and not easy to spot, were Mitra tristis Broderip, Morula ferruginosa Reeve, Columbella fuscata Sowerby and Conus nux Broderip. The C. nux came out just after the tide turned very suddenly; one minute there were none, then the place was crawling with the tiny cones. Frank found a live Morum tuberculosum (Reeve) that measures 40 mm. whereas Abbott lists it as 12 to 20 mm.

Coming home, our plane was delayed at San Jose del Cabo airport by 2½ hours, so we missed our Los Angeles connection. Aeromexico was able to reserve space for us on a later PSA flight (Christmas Eve would have been a sad time to be stranded in L. A.) and rushed us through customs,

remarking our bags and putting them on the Interline moving belt. When we reached Oakland, only 6 of the 7 bags came down the chute, the missing one being mine. I really didn't care - it had clothes that were easily replaceable - because my other bag, with all my shelling and snorkeling gear and all my shells, was safely in my possession. The shells had been cleaned, identified, catalogued and put away before the other bag mysteriously reappeared three weeks later.

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BACK TO MATAGORDA ISLAND - AT LAST! By Helen Eberspacher

They say the third time's the charm. And so it was for me, because it was my third attempt to get back to Matagorda Island. (I had been once before on 3/7/81 with HCS.) The first attempt, which was last year, my foursome did not get to Port O'Connor due to car trouble near Port Lavaca. (It was good timing; otherwise we would have been caught in the violent rainstorm on the island as were so many HCS members.) The second attempt was February 5 of this year when the Outdoor Nature Club's trip was cancelled that morning at 10:00, with 30-plus shellers ready and waiting. The weather was stormy, and rain was predicted to continue all day. So, on March 5, the ONC group made it and had a beautiful day on the island. As before, when I made the trip with the HCS, we were dropped off in small groups at intervals along the Gulf Beach.

Speaking for my foursome, we found quite a few whole Scotch Bonnets, mostly old, but one of mine was immature and still had its colorful spots. Two of us found Distorsios in good condition. I found a young Tun in good color and shape and a beautiful large double pink Tellin. There were lots of very large Moon Snails, large double Disks and single valves of the Greatheart Cockle. We picked up many Sun Dials, some quite colorful. I guess the biggest thrill for all of us was each finding several recently dead Sun Dials with animals and operculums. All of these were about the same size (a little larger than a quarter) and very dark in color and markings. It was the first time any of us had ever seen a Sun Dial operculum. We also found some Sea Beans which are always fun to find. The tide was going out while we were there but nothing was found alive or dead as it receded. Everything we found was in the debris left behind from previous high tides. The beach was quite littered with the usual flotsam and jetsam, including many hard hats in bright colors.

(Note: Matagorda Island will be maintained by the State of Texas in the future if plans go through. We do not know what public access will be afforded visitors. At this time shellers are taken by vehicles to the beach arranged with the help of U. S. Fish and Wildlife Service.)

ADULT Panopea bitruncata DUG IN TEXAS

Janey Moore
137 Dodge
Clute, Texas 77531

ABSTRACT A live adult Panopea bitruncata (Conrad, 1872) dug at South Padre Island, Texas, in January, 1983, provides pertinent details on the burrow and animal in situ. This appears to be the first adult dug in Texas, although records exist for dredged specimens.

On a business trip to South Padre Island at the end of January, I found time to make the most exciting shell collecting trip of my life. On Sunday, January 30, 1983, during a very low tide in Laguna Madre Bay, I chanced upon what appeared to be a large Angel Wing hole in about ankle deep water. It was perfectly round, clean-edged, and about one and a half inches wide. I reached into the hole with my fingers and felt a tough leathery siphon. Although it did not feel like an Angel Wing siphon, I still assumed it was one and removed my jacket in preparation for digging it out. After digging about six inches deep, the hole expanded to a diameter of about four and a half inches. It curved down and back into the mud. I reached into the hole as far as my arm would go and was unable to feel the bottom.

The sides of the hole were smooth, well-worn, and clean without any slimy feel. By then, I knew this was definitely not an Angel Wing, but I had no idea what it might be.

I checked my position with thoughts of bringing back a shovel and continued looking for shells. About twenty feet farther I found a slight depression in the mud which was about a foot across. In the center was a mound of soft mud which appeared to have boiled up and settled gently, unlike the worm casting mounds in the area. I dug my fingers through the mud and again felt a tough leathery siphon. This time I held onto the siphon as it slowly pulled a couple of inches down into the hole and stopped. I began to dig into the firm packed mud and sand with bare fingers and a tablespoon I had brought along. After digging about six inches, I could feel a large firm lump of animal in the hole but felt no signs of a shell. I began to think it must be some type of sea cucumber or anemone. Only my curiosity kept me going at this point because the digging was not easy. After digging past about eight inches of lumpy animal, I finally felt the hardness of shell and grew excited, because in my wildest imagination there was only one thing this shell could be. I continued digging carefully until the shell was loose, then grabbed the siphon and pulled. My suspicions were correct. It was a Panopea bitruncata or Geoduck Clam.

The animal of this P. bitruncata was very swollen and bulging out of the shell. It's siphon extended to about seven inches long. The shell itself later measured 131 mm. long, 78 mm. wide and 60 mm. across with the animal intact. It was kept alive in sea water for two days. During that time the animal slowly emitted water and it's siphon shrank down to three inches and the valves would come to within

an inch of closing.

From my observations of the first hole I discovered, P. bitruncata lives in a burrow. This burrow accommodates the size of the shell except for the top six inches, which is large enough only for the siphon to reach the surface. The animal moves up and down in the burrow at will. The reflexes of the P. bitruncata appeared much slower than the Angel Wing. When I held onto it's siphon, the animal was not able to go to the bottom of the burrow quickly enough. It then pumped itself full of water as a defense and became lodged in the upper portion of its burrow so that I was able to dig it out.

After discovering what was making these unusual holes, it was only natural that I wanted to dig the first hole out and obtain the other shell as well. With the aid of my brother, his friend and two shovels, we dug a hole three feet deep and as wide. We were unsuccessful in finding the shell or the continuing burrow before the tide came in on us and made further digging impossible.

On my next trip to South Padre three weeks later, I relocated the hole. It was almost refilled with sand and the mud was very putrid. The water level ranged from one and a half to three feet deep during the four days I was there and redigging was impossible.

At the present time the hole has been filled in and will be difficult to relocate. It is my hope, though, that sometime soon when the tides cooperate, I will be able to dig deeper and claim the dead valves for my dry collection.

The P. bitruncata which I did obtain will be preserved with the animal intact and will be displayed at the Brazosport Museum of Natural Science in Lake Jackson, Texas.

It is very exciting and gratifying to me to be one of a minute few who know the feeling of digging a live P. bitruncata with their own hands.

NOTES FROM THE LITERATURE

By Constance Boone

Dr. Robert Robertson reviewed the literature of Panopea bitruncata in Nautilus, Vol. 76, No. 3, January, 1963, giving us information that this shell seems to be rather rare throughout its range, principally the Carolinian Province. That review updated the known range and depth information from 1956 and included two records from dredging in offshore Texas waters in the Gulf of Mexico. Until his report the literature included this species as far west only to Alabama.

W. C. DeWitt, now deceased, provided Dr. Robertson with a preserved adult shell taken by shrimp fishermen from 17-25 fathoms near some oil rigs off Galveston Island. This shell was 17.7 cm. long, 11.9 cm. high and valves closed were 8.6 cm. wide. DeWitt reported that the partially contracted siphons extended 7½ ins. beyond the posterior end of the shell. There were several other animals taken by that shrimper, but the location of these shells is not known.

Fig. 1 Panopea bitruncata (Conrad, 1872) Collected by Janey Moore, Jan. 30, 1983, at South Padre Island, Texas.

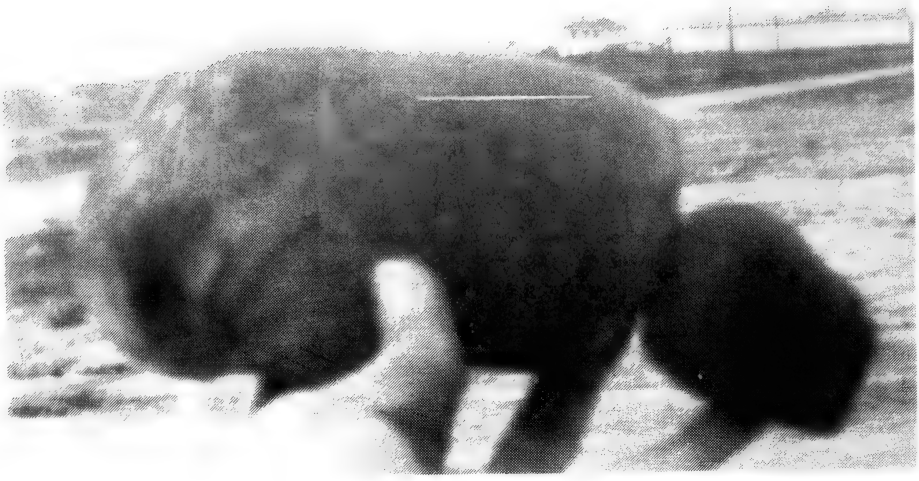

Fig. 2 Panopea bitruncata (Conrad, 1872) length 131 mm., compared to hand, held in triumph.

Photos by Janey Moore

The DeWitt shell is still on view today at the Brazosport Museum of Natural Science on the campus of the Brazosport College near Lake Jackson, Texas.

The Robertson paper also reported that Larry Allen, late husband of member Betty Allen of Port Isabel, Texas, recovered a live specimen of Panopea bitruncata while shrimping when the boat's shrimping boards buried in a mud lump. This specimen, according to Betty Allen, was damaged. The animal was given to the marine lab at Rockport, Texas.

Robertson reported recovery of other animals, including one taken alive apparently from the surface in the St. Augustine Inlet, Florida, whick revealed barnacles on the siphons indicating the animal had been exposed for some time, suggesting it could not reburrow.

Charles W. Johnson's paper on this species in Nautilus, Vol. 18, No. 7, November, 1904, discussed finding a whole specimen on a sand bar near St. Augustine, Florida, near a favorable habitat of sand and mud. He repeated the excellent discussion by Dall in Contributions to the Tertiary Fauna of Florida in Transactions of the Wagner Free Institute of Science, which pointed out that the substrate of such animals as Panopea may alter the size and appearance of the shells.

This paper also united the recent and Pliocene forms of Panopea in U. S. Eastern shores under Conrad's Panopea bitruncata. A synonymy is given. He also pointed out that Conrad's type was obtained at Fort Macon, North Carolina and that it was an injured specimen with the upper or dorsal portion of the posterior end being broken away. The type is at the Academy of Natural Sciences of Philadelphia.

There have been very few reports of this species being hand dug. A few were reported from the Florida West Coast. In Texas we know that one juvenile was collected alive by Carl Young at the Aransas Pass to Mustang Island Channel. Andrews in Shells and Shores of Texas, 1977, states "live, juvenile specimens" were taken in the Aransas Pass Channel and reports that she collected the species at Port Mansfield. Except for the Young specimen, we know no particulars.

The species was reported by Ode in his discussion of the bivalves of the Northwest Gulf of Mexico. The survey material, housed at the Houston Museum of Natural Science, contains 6 lots. Ode pointed out that, except for Atrina, this is the largest bivalve in Texas waters. (Texas Conchologist XIII, (1) p. 24)

A large pair is on display in the Texas Shells exhibit at HMNS on the second floor. It is from the survey material.

Janey Moore's feat is indeed an accomplishment to be proud of and we expect that she will report on other recoveries of this species as she already has made several other attempts to dig other specimens. By the time this is in your hands she may have been successful.

She reports finding more "depressions" in the mud she considers evidence of other burrows. We will keep you informed.

As recently as 1954, Abbott's American Seashells, First Edition, proposed that this species might actually be extinct. American Seashells, 1974, states it is "uncommon" and said it lives as deep as 4 feet below the surface. There is evidence it might live off-shore where it is hard to retrieve. Dr. T. E. Pulley, director emeritus HMNS, says divers have reported holes in the substrate where valves have been found on the surface.

Janey Moore's saga is even more interesting, I think. Just a short time before she made her trip to South Padre, she was in Florida and visited Jack Rudloe's marine specimen establishment at Panacea, West Coast of Florida. There in an aquarium she saw a bivalve alive that she thought must be a Panopea. It had been dredged. It was apparently a juvenile. Janey asked what it was, received no identification from Rudloe but did manage to get the specimen and to bring it home alive to deposit in an aquarium at the Brazosport Museum of Natural Science where it lived for a few days. It is somewhat differently shaped from the adult Janey dug in Texas, but this bears out the statements made about substrate affecting the size and shape of the shell made by Dall. I have seen the shell, and both Mildred Tate and I do think it is Panopea bitruncata. For Janey to bring this home to Texas and then to go out and dig a bigger one in Texas makes Janey's story quite remarkable. The day she called Mildred Tate from South Padre she asked her to guess what she had found. Mildred immediately guessed Panopea! And so it was!

****

BOOK REVIEWS

COMPENDIUM OF SEASHELLS by R. Tucker Abbott and S. Peter Dance, 410 pp. + lx, 4200 color photographs, taxonomic classification and bibliography, brief index to common names, index to scientific names. 8 5/8 x 11" hardbound, E. P. Dutton,, Inc. 1982.

The "Compendium of Seashells" by R. Tucker Abbott and S. Peter Dance is, in some ways, much like a delightful little book called "Index Testaceologicus" by W. Wood, which was published over 150 years ago. Both are filled with beautiful colored pictures of seashells; there are 4,200 in Abbott and Dance's book and 2,780 in Wood's.

In his preface Wood stated: "It has therefore been the endeavor of the author, in the absence of larger and more costly publications, to supply their place by a work which will incorporate in one volume figures of all the known shells, reduced indeed to small size, but with a degree of accuracy that, it is hoped, will not only enable the conchologist to fix upon any particular species he may wish to define, but also to arrange his collection by inspection, without the trouble of consulting other publications on the subject."

In their preface, Abbott and Dance say: "About 30,000 species of marine mollusks are known. Thousands are less than half an inch in size, even in the adult stage; many hundreds are confined to the great depths of the oceans. Our book concentrates on all the others. Their inclusion here is based on several factors: attractiveness, desirability, rarity, and availability. Included are most species belonging to popular groups, such as the cones, volutes, cowries, murexes, scallops, and thorny oysters."

The "Compendium of Seashells" is unlike any other modern book. Most recent conchological books have either been intended as monographs of particular families or genera or they have been identification manuals for all the mollusks of a particular area. The "Compendium of Seashells" includes most of the major groups of mollusks for the entire world, but it can do so only by eliminating the smaller and less attractive species. Who, then, will use this book, and how?

As the authors state in the preface, this new book is intended primarily for the amateur shell collector. But there are many kinds of amateurs, and many of them have interests that are quite different from the interests of others.

About the only thing that all amateurs (and professionals too) have in common is the desire to put a name on everything, and the "Compendium" is not very useful for that. It is true that many beginning collectors will find a photograph that is close enough to something they have in hand that they are satisfied with the name they can put on the shell. More experienced conchologists know that such names are often wrong. For an amateur wanting to put names on all the shells collected in a particular area, such as the Texas coast, the "Compendium" is of no help at all.

The real audience for the "Compendium" is the amateur who is thrilled by the beauty in form and color that can be seen in endless array in the shells of mollusks. For most amateur collectors, however, these shells come from far away exotic places, and the only way to get them is from shell shops and dealers' lists. Such shells usually come with identifications already made, and so naming them is not a problem.

The "Compendium" is an excellent guide to all of the most beautiful shells in the world, and it is amazing how many of them can be obtained from dealers and in trade at very modest prices. As any collector knows, however, it is not too long after acquiring the first Tiger Cowry that a Golden Cowry seems almost a necessity to fill out the collection.

For someone who loves the beauty of nature and wishes to capture some of that beauty in a carefully selected collection of shells, the "Compendium of Seashells" is an excellent guide.

No book review can be completed without a little fault-finding by the reviewer, and I have two complaints. Although most of the color plates are excellent, there are several in which the colors are so muddied that definition is lost. The second complaint is the lack of any system in the way the species are arranged on the page. Up to 12 species are illustrated on each page, and for large groups, such as

the cones with 29 pages, it would have helped if the species had been listed in alphabetical order. More useful would have been placing closely related species together, but no such organization is apparent. In families which include several genera, not even all of the species in a genus are placed together. These would be regarded as minor faults, I suppose, by the people who find the "Compendium" mose useful.

T. E. Pulley

SEASHELLS OF OMAN by Donald and Eloise Bosch, edited by Kathleen Smythe. 208 pages, over 350 color illustrations, 246 x 189 mm. hardbound. Longman Group Limited, London and New York, 1982.

This beautiful book is authored by two enthusiastic amateur collectors who have spent over 27 years as medical officer and teacher for the Sultanate of Oman. Early on in their hobby they found literature on the area was extremely difficult to obtain. When they returned to the United States to visit they would also consult with professional malacologists who were often eager to see their material. Tributes to them, according to R. Tucker Abbott's foreword, are in the form of recently described species--Conus boschi, Cymatium boschi, and Acteon eloiseae. There are already more.

All shells are shown in color, often with variations, sometimes with the shells a bit encrusted as if to remind you that this is the way the shell was found. It is true that many of the shells have never been found alive by the authors. Their hunt for the habitats of the shells continues, but some rare shells show up washed up on the beaches.

This is a good guide, I think, for identification of shells from Oman. There is no pretense that it would be used for any other area in the vicinity. Each discussion is related to what the couple has found in Oman. There are 46 pages of bivalves, especially valuable to collectors.

Having met the authors at the 1981 AMU meeting where they presented a slide lecture and where they displayed some of their shells, this was a book I looked forward to getting. Dr. Bosch showed us a cover with the magnificent Acteon eloiseae on it. Since then I have acquired many of the shells, including this Acteon with its marvelous pattern and its operculum, not often seen.

Constance E. Boone

(Note: Both books reviewed have arrived for the HCS library)

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VOLUME XIX NO. 4

HOUSTON CONCHOLOGY SOCIETY

Epitonium angulatum

JULY, 1983

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.

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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.

MARINE SHELLS OF THE OUTER BAJA CALIFORNIA COAST

By T. E. Pulley

There have been few published reports of the shells of the outer Baja California coast. Until recently, it has been very difficult to travel anywhere in Baja California, and there is still only limited access by road to the outer coast.

This report is based on shells that were collected during whale watching expeditons sponsored by the Houston Museum of Natural Science during the years 1980 to 1983. Mrs. Constance Boone was the principal collector in 1981, and Dr. T. E. Pulley in the other years. The places visited were about 200 miles apart and included the following: Todos Santos Islands off Ensenada, San Martin Island, San Benito Island and nearby Cedros Island, San Ignacio Lagoon, Magdalena Bay, and a beach near Pulmo Reef about 40 miles north of Cape San Lucas on the eastern shore of the Peninsula. Also visited were Isabella Island and San Blas on the west coast of mainland Mexico, about 300 miles southeast of Cape San Lucas.

Since the trips were planned primarily for whale watching, only a limited time was available for shell collecting, and rarely could shore visits be timed for low tides. The list of species is therefore far from complete, but it probably does include most of the common things that are likely to be found on the beaches.

The list for San Ignacio Lagoon is the longest, because much more time was available for collecting there. It was also visited on each of the four trips, as were all of the localities to the north. Magdalena Bay, Pulmo Reef beach, Isabella Island, and San Blas were seen only on the 1983 trip.

Baja California has long been known as a faunal transition zone between the cool water to the north and the warmer water which extends from the Gulf of California to Peru. This species list amply confirms the fact that almost everything on the outer Baja California coast is either at the northern limit or the southern limit of its range.

The Baja California Peninsula is about 700 miles long. It is shorter than the distance between Miami, Florida and Cape Hatteras, and yet there are almost no species that occur on the northern Baja California coast and also in the warmer water of western mainland Mexico. This is in sharp contrast to the fairly large number of species found both at Miami and Cape Hatteras.

The two most useful publications for the shells of the outer Baja California coast are Sea Shells of Tropical West America, 1971, by Myra Keen and Marine Shells of Southern California, 1978, by James H. McLean. In this list, the species number used by each author is given. Note how few species are listed by both authors.

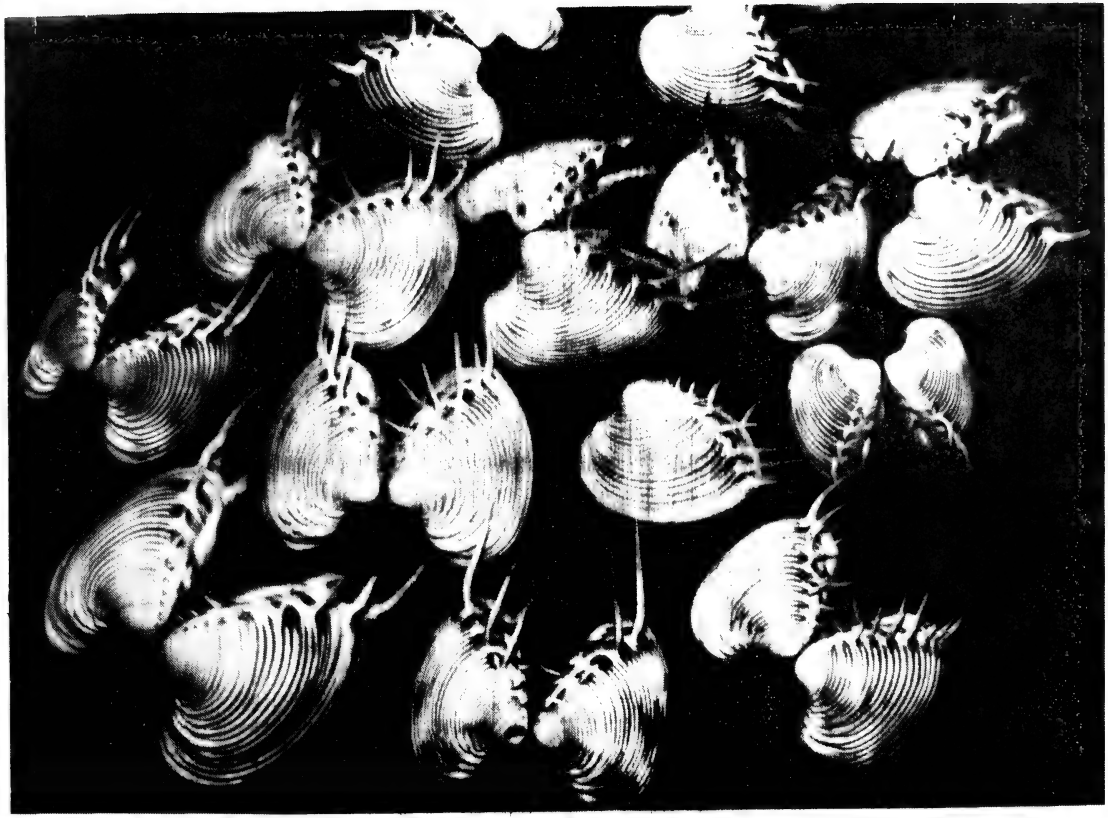

Fig. 1 Pitar lupanaria (Lesson, 1830) was found in abundance on the sand beach at San Blas, Mexico (mainland Mexico on the Gulf of California) by Dr. T. E. Pulley in February, 1983, on a visit there by the Houston Museum of Natural Science whale-watching expedition.

Photo by Constance E. Boone

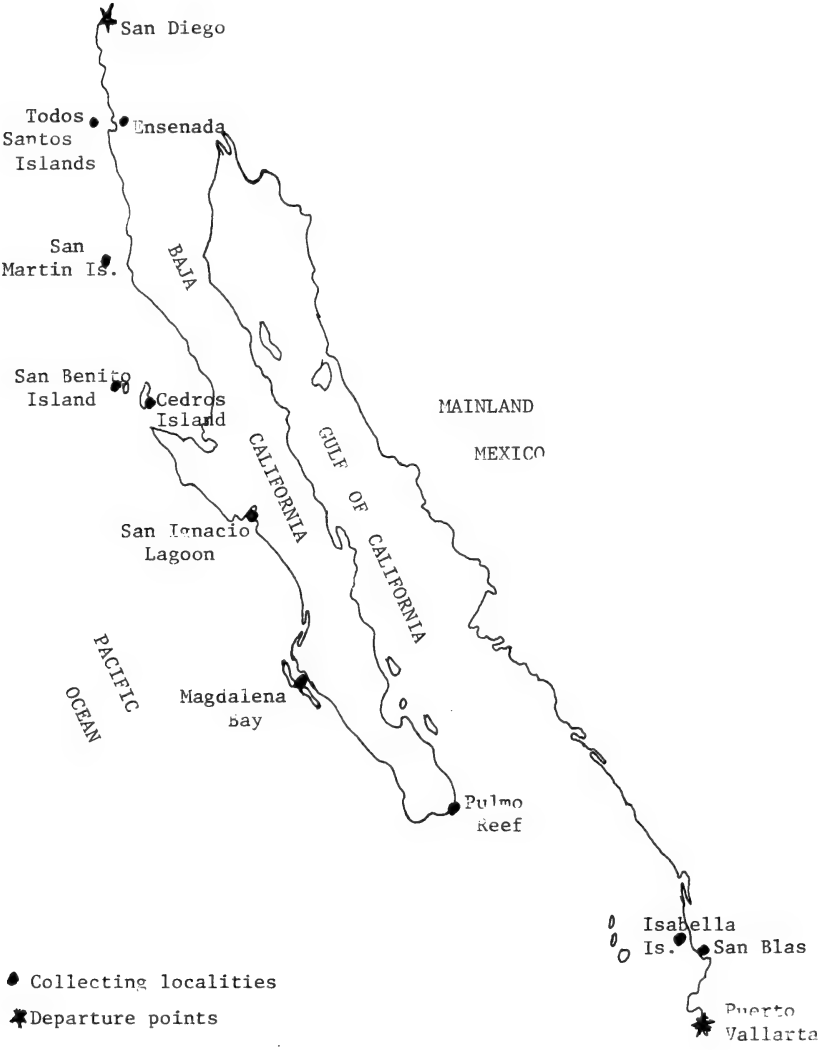

Fig. 2 Localities for collection of mollusks on HMNS whale watching expeditions form 1980-1983 are pinpointed on the map above of Baja California and mainland Mexico.

KEEN NUMBER	MCLEAN NUMBER	CLASS GASTROPODA SUBCLASS PROSOBRANCHIA ORDER ARCHAEOGASTROPODA	TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY HALIOTIDAE									
	1.1	Haliotis corrugata		x	x		x				
	1.2	" cracherodii	x	x	x	x	x				
	2.1	" fulgens			x	x		x			
		FAMILY SCISSURELLIDAE									
5	3.1	Sinezona rimuloides		x							
		FAMILY FISSURELLIDAE									
16		Diodora digueti					x				
18		" inaequalis							x		
25	3.6	Lucapinella callomarginata		x							
31		Fissurella asperella							x		
40		" rubropicta						x			
42		" virescens								x	
	3.7	" volcano	x	x		x	x				
	3.5	Megatebennus bimaculatus		x							
	3.4	Megathura crenulata	x								
		FAMILY ACMAEIDAE									
	4.1	Acmaea mitra		x							
	5.6	Collisella asmi					x				
46		" atrata						x			
	5.2	" conus	x		x	x					
47		" dalliana						x			
	4.5	" digitalis		x							
48		" discors							x		
	5.3	" limatula	x	x	x	x	x				
	5.1	" scabra	x	x		x	x				
52	5.5	" strigatella	x								
	6.4	Notoacmaea depicta		x							
	6.1	" fenestrata	x								
	6.3	" paleacea	x								
60		Scurria mesoleuca							x		
	6.5	Lottia gigantea	x	x							
		FAMILY TROCHIDAE									
	7.3	Calliostoma gemmulatum	x								
	9.1	Tegula aureotincta			x	x	x	x			

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
99	9.2	Tegula eiseni			x	x	x				
	9.3	" funebralis	x	x		x	x	x			
	9.4	" gallina		x	x	x	x				
	9.5	" regina	x			x					
	8.5	Norrisia norrisi		x		x	x				
		FAMILY SKENEIDAE									
121	9.6	Parviturbo acuticostatus		x							
		FAMILY TURBINIDAE									
	10.1	Homalopoma luridum		x							
144		Turbo fluctuosus					x	x			
	10.5	Astraea undosa	x	x		x	x				
		FAMILY PHASIANELLIDAE									
	11.3	Tricolia rubrilineata		x							
		FAMILY NERITIDAE									
165		Nerita scabricosta					x	x	x	x	
166		" funiculata						x	x	x	
168		Theodoxus luteofasciatus					x				
		ORDER MESOGASTROPODA									
		FAMILY LITTORINIDAE									
181		Littorina aspersa						x	x	x	
181		" penicillata					x	x	x	x	
183		" modesta						x	x	x	
	11.6	" planaxis	x	x	x		x				
186		" pullata							x		
	11.7	" scutulata	x								
		FAMILY RISSOIDAE									
	12.1	Merelina aequisculpta		x							
	12.2	" cosmia		x							
	12.5	Alvinia purpurea		x							
	12.9	Barleeia californica	x								
	12.10	" haliotiphila		x							
	12.11	" subtenuis		x							

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY ASSIMINEIDAE									
229	13.3	Assiminea californica	x	x							
		FAMILY TRUNCATELLIDAE									
284	13.7	Truncatella californica		x							
		FAMILY VITRINELLIDAE									
418	13.5	Teinostoma supravallatum		x							
		FAMILY ARCHITECTONICIDAE									
425		Architectonica nobilis						x			
		FAMILY TURRITELLIDAE									
440		Turritella leucostoma						x			
		FAMILY CAECIDAE									
	14.1	Caecum californicum		x							
	14.2	" dalli		x							
	14.3	" crebricinctum		x							
	14.5	Fartulum occidentale		x							
		FAMILY VERMETIDAE									
498		Petaloconchus macrophragma									x
	15.3	Serpulorbis squamigerus		x			x				
		FAMILY CERITHIIDAE									
515		Cerithium stercusmuscarum					x				
	16.6	Cerithiopis cosmia		x							
	16.7	" carpenteri		x							
	16.4	Bittium purpureum	x	x							
	16.10	Triphora pedroana		x							
561		Alaba jeannettae						x			
		FAMILY POTAMIDIDAE									
601		Cerithidea albonodosa					x				
602		" mazatlanica						x			
603		" montagnei		x			x				

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY EPITONIIDAE									
	17.1	Epitonium tinctum		x							
		FAMILY HIPPONICIDAE									
766	17.6	Hipponix antiquatus		x							
766		" panamensis							x		
766		" pilosus							x		
	17.7	" tumens		x							
		FAMILY CALYPTRAEIDAE									
799		Calyptraea conica					x				
808	18.1	Crepidula aculeata		x					x		
	18.3	" coei					x				
810		" excavata									x
	18.4	" norrisiarum					x				
814	18.5	" onyx					x	x			
820	18.7	Crepipatella lingulata		x		x	x				
821		Crucibulum cyclopium					x				
822		" lignarium					x				
823		" monticulus					x				
825		" scutellatum					x	x			
826	18.8	" spinosum					x				x
		FAMILY NATICIDAE									
861		Natica chemnitzii					x				x
	19.1	Polinices lewisi					x				
882		" uber					x				
888	19.3	" recluzianus					x	x			
		FAMILY TRIVIIDAE									
908		Trivia radians					x				
910	20.4	" solandri		x		x	x				
		FAMILY CYPRAEIDAE									
919		Cypraea albuginosa							x		
928		" nigropunctata							x		
	20.5	" spadicea				x					

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY TONNIDAE									
942		Malea ringens					x				
		FAMILY CASSIDIDAE									
950		Morum tuberculosum								x	
		FAMILY FICIDAE									
952		Ficus ventricosa						x			
		FAMILY BURSIDAE									
	21.1	Bursa californica				x					
		ORDER NEOGASTROPODA									
		FAMILY MURICIDAE									
1003		Muricanthus radix						x			
1004		Muricopsis armatus							x		
	21.2	Ceratostoma nuttalli	x	x		x	x				
1036		Pteropurpura erinaceoides					x				
	21.3	" trialata				x	x				
	23.3	Forreria belcheri					x				
	22.9	Roperia poulsoni					x				
		FAMILY THAIDIDAE									
1074		Thais speciosa								x	
1076		" biserialis						x		x	x
1084		Acanthina lubugris		x	x	x	x	x			
1088		Purpura pansa							x	x	
1092		Morula ferruginosa							x		
		FAMILY BUCCINIDAE									
1108		Cantharus elegans					x				
1115		" sanguinolentus								x	
	24.5	Kelletia kelleti	x	x							
1131		Macron aethiops					x				
	24.6	" lividus	x	x	x	x					
1137		Northia pristis									x
1150		Triumphis subrostrata									x

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY COLUMBELLIDAE									
1153		Columbella aureomexicana				x					
1155		" fuscata				x			x		
1172		Anachis adelinae					x				
1175		" coronata					x				
1179		" flucuata					x				
1184		" hannana					x				
1231		Mitrella baccata								x	
		FAMILY MELONGENIDAE									
1290		Melongena patula									x
		FAMILY NASSARIIDAE									
1316		Nassarius bailyi						x			
	26.4	" tegula				x	x				
		FAMILY FASCIOLARIIDAE									
1340		Fusinus dupetitthouarsi				x					
1341		" irregularis					x				
		FAMILY OLIVIDAE									
1360		Oliva incrassata					x	x			
1365		" spicata					x				
1370		Agaronia testacea									x
1388		Olivella cymatilis					x				
	27.7	" biplicata		x							
		FAMILY MARGINELLIDAE									
	27.2	Cystiscus jewetti		x							
1417	27.5	Granulina margaritula		x							
		FAMILY CONIDAE									
1498	28.2	Conus californicus	x			x					
1511		" fergusoni						x			
1514		" nux								x	
1515		" perplexus					x				

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY TEREBRIDAE									
1565		Terebra specillata					x				
1569		" tiarella					x				
		FAMILY TURRIDAE									
	29.1	Megasurcula carpenteriana		x							
1574	29.3	Pseudomelatoma penicillata			x	x	x				
		SUBCLASS OPISTHOBRANCHIA									
		FAMILY PYRAMIDELLIDAE									
1985	32.5	Odostomia navisa		x							
2001	32.2	" aepynota		x							
	32.4	" helga		x							
2044	32.11	Turbonilla kelseyi		x							
		FAMILY BULLIDAE									
2235	31.2	Bulla gouldiana					x				
		FAMILY SCAPHANDRIDAE									
2259	31.6	Acteocina inculta		x			x				x
		SUBCLASS PULMONATA									
		FAMILY MELAMPIDAE									
2400	33.2	Melampus olivaceus					x	x			
		FAMILY SIPHONARIIDAE									
2422		Siphonaria maura						x	x	x	
		FAMILY TRIMUSCULIDAE									
2427	33.6	Trimusculus reticulatus		x							
		160 species gastropods									

KEEN NUMBER	MCLEAN NUMBER	CLASS PELECYPODA SUBCLASS PTERIOMORPHIA ORDER ARCOIDA	TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY ARCIDAE									
67		Arca pacifica					x	x			
72		Barbatia rostae					x				
74		" reeveana					x		x		
75		" illota							x		
78		Anadara concinna					x				
80		" obesa									x
81		" similis									x
82		" tuberculosa					x	x			x
84		" bifrons (?)								x	
86		" nux						x			
88		" reinharti					x				x
89		" grandis					x				
90		" multicostata					x				
98		Lunarca brevifrons									x
99		Arcopsis solida					x				
101		Noetia reversa									x
		FAMILY GLYCYMERIDAE									
112		Glycymeris maculata							x		
		ORDER MYTILOIDA									
		FAMILY MYTILIDAE									
	36.3	Mytilus edulis	x								
	36.2	" californianus	x			x					
122		Brachidontes semilaevis					x				
125		Mytella guyanensis					x				
140		Lithophaga attenuata					x				
	37.4	" plumula	x								
149	36.5	Modiolus capax					x				
		FAMILY PINNIDAE									
156		Pinna rugosa					x				
		ORDER PTERIOIDA									
		FAMILY PTERIIDAE									
161		Pteria sterna					x				
162		Pinctada mazatlanica					x		x		

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY ISOGNOMONIDAE									
164		Isognomon recognitus					x				
		FAMILY OSTREIDAE									
174		Dendostrea mexicana (Sowerby, 1871)					x				
169		" conchaphila					x				
173		" megodon					x				
174		Saccostrea palmula					x				
		FAMILY PECTINIDAE									
181		Pecten vogdesi					x				
182		Argopecten circularis					x	x			
	38.1	" aequisulcatus					x				
196		Leptopecten camerella					x	x			
	38.3	" latiauratus					x				
202		Lyropecten subnodosus					x				
	38.5	Hinnites giganteus		x							
		FAMILY LIMIDAE									
217	39.1	Lima hemphilli					x				
		FAMILY ANOMIIDAE									
223	39.2	Anomia peruviana				x	x	x			
227	39.3	Pododesmus cepio					x				
		SUBCLASS HETERODONTA ORDER VENEROIDA									
		FAMILY CARDITIDAE									
237		Cardita affinis					x		x		
239		" crassicostata							x	x	
		FAMILY CORBICULIDAE									
247		Polymesoda mexicana									x
		FAMILY LUCINIDAE									
	41.3	Epilucina californica		x							
	41.4	Lucinisca nuttalli		x							

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
		FAMILY UNGULINIDAE									
292		Diplodonta subquadrata					x				
295		Felaniella sericata					x	x			
		FAMILY ERYCINIDAE									
311	41.1	Lasaea subviridis		x							
		FAMILY CHAMIDAE									
347		Chama echinata							x		
	40.1	" arcana	x			x	x				
		FAMILY CARDIIDAE									
363		Trachycardium panamense					x	x			
364		" procerum									x
	42.3	" quadragenarium		x			x				
366		Papyridea aspersa					x				
370	42.1	Trigoniocardia biangulata					x		x		
378		Laevicardium elatum					x				
379		" elenense					x				
		FAMILY VENERIDAE									
384		Tivela argentina									x
385		" byronensis					x				x
390		" planulata					x				
	43.2	" stultorum					x	x			
391		Transenella caryonautes							x		
		" tantilla (Abbott)		x							
408		Pitar lupanaria					x				x
413		" concinnus									x
424		Megapitaria aurantiaca							x		
425		" squalida					x	x			
426		Dosinia dunkeri									x
427		" ponderosa					x	x			
431		Cyclinella saccata									x
	43.4	Amiantis callosa					x	x			
	44.1	Saxidomus nuttalli		x							
440	44.2	Chione californiensis					x				
445	44.3	" undatella		x			x				
447	44.4	" fluctifraga					x				
448		" amathusia									x
450		" gnidia					x	x			
457		" subrugosa									x

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
467		Protothaca asperrima						x			
473		" grata					x	x			
	45.1	" staminea		x			x	x			
	45.2	" laciniata					x				
		FAMILY PETRICOLIDAE									
	46.1	Rupellaria carditoides	x								
	46.2	Petricola californiensis					x				
480		" parallela									x
		FAMILY MACTRIDAE									
490		Mactra nasuta					x				
492	47.1	" californica									x
501		Mactrellona exoleta									x
504		Mulinia pallida									x
505		Raeta undulata					x				
	47.3	Tresus nuttalli					x				
		FAMILY TELLINIDAE									
509	48.3	Tellina carpenteri									x
	48.1	" bodegensis		x							
557		Florimetis cognata							x		
	48.8	" obesa					x				
	48.5	Macoma nasuta		x							
568	48.6	" indentata					x				
	48.7	" secta		x			x	x			
574		Strigilla chroma									x
		FAMILY DONACIDAE									
584	50.1	Donax californicus					x				
585		" carinatus									x
586		" contusus									x
587		" culter					x				x
590	50.2	" gouldii					x				
593		" navicula (?)						x			
598		" punctatostriatus					x	x			x
601		Iphigenia altior						x			
		FAMILY PSAMMOBIIDAE									
609	50.4	Heterodonax pacificus					x	x			

KEEN NUMBER	MCLEAN NUMBER		TODOS SANTOS	SAN MARTIN	SAN BENITO	CEDROS ISLAND	SAN IGNACIO	MAGDALENA	PULMO	I. ISABELLA	SAN BLAS
612		Sanguinolaria bertini									x
	50.5	" nuttalli					x	x			
		FAMILY SOLECURTIDAE									
615		Tagelus affinis					x				
616	51.1	" californianus					x	x			
	51.2	" subteres					x				
		FAMILY SEMELIDAE									
	49.2	Semele decisa	x				x				
630		" flavescens						x			
	49.1	Cumingia californica		x							
660		Leptomya ecuadoriana									x
		FAMILY SOLENIDAE									
667	51.3	Solen rosaceus					x				
		ORDER MYOIDA									
		FAMILY MYIDAE									
671	52.1	Cryptomya californica					x				
		FAMILY PHOLADIDAE									
700		Pholas chiloensis					x				x
	53.2	Zirfaea pilsbryi					x	x			
		SUBCLASS ANOMALODESMATA ORDER PHOLADOMYOIDA FAMILY PANDORIDAE									
734		Pandora arcuata									x
		FAMILY LYONSIIDAE									
	54.1	Lyonsia californica					x				x
		FAMILY PERIPLOMATIDAE									
753	54.3	Periploma planiusculum					x	x			x
		126 species bivalves									

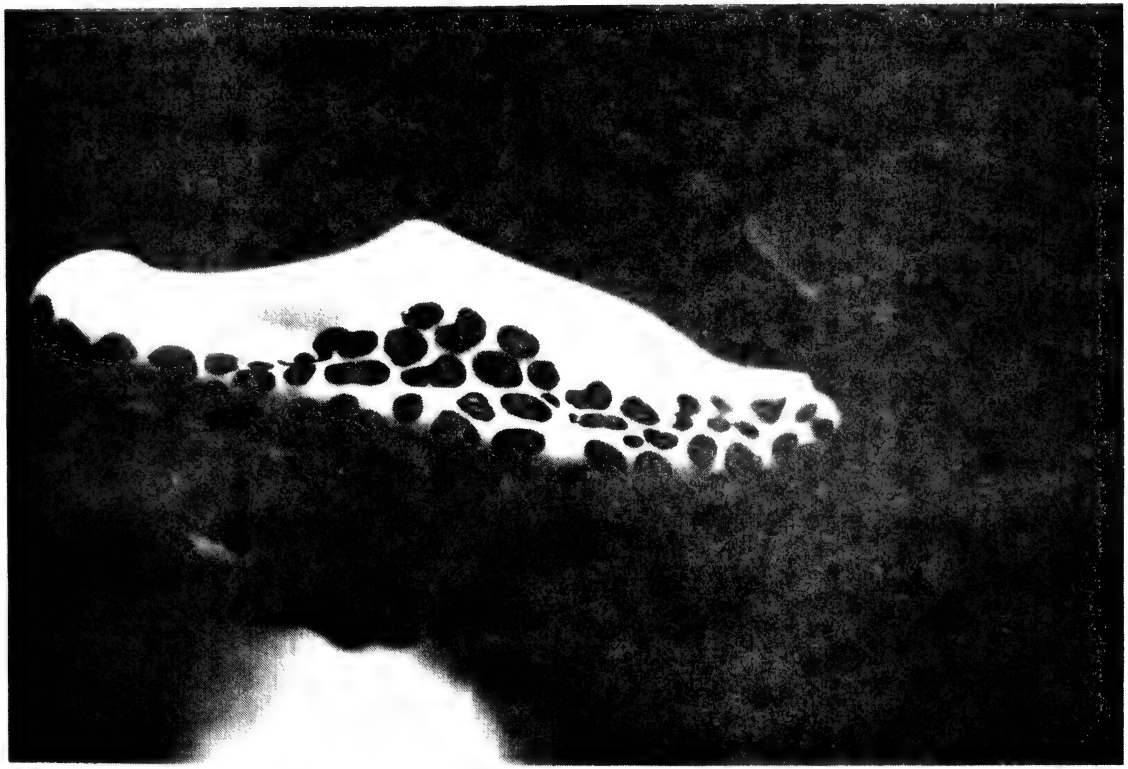

Fig. 1 Cyphoma macgintyi Pilsbry, 1939, was collected in the Coast Guard basin at South Padre Island, Texas, by Janey Moore of Clute, Texas, in 1974 in 12-15 feet.

Photo by Janey Moore

CYPHOMA MACGINTYI IN TEXAS WATERS

By Constance E. Boone

Several years ago Janey Moore of Clute, Texas, came to talk to the Houston Conchology Society on diving for shells in Texas waters. She exhibited some fine specimens of Cyphoma she called C. macgintyi, but, most importantly, she had slides of the living animals she had collected and kept in her aquarium.

These animals, which you see pictured with this report, seemed to me to prove that Cyphoma macgintyi does occur in Texas. Most collectors have thought so, but there has been some confusion in recent literature, and we know very well that you cannot prove anything about this genus without having proof of the animals.

Cyphomas exhibit variation within the species from different geographical or habitat areas. Some of our Cyphoma macgintyi, for instance, are shorter and more calloused when offshore Texas and others from quieter areas at the jetties seem more oblong, less sturdily built. You find in Cyphoma gibbosum the same thing in different locations throughout the Caribbean and Atlantic. There are often different descriptions given concerning the color and shapes of the shells. Yet you could not mistake live Cyphoma gibbosum regardless what shape or color of shell. You would know Cyphoma signatum equally as well from the mantle, not the shell.

Cyphoma macgintyi* was named by H. A. Pilsbry in The Nautilus, Vol. 52 (3), 1939, page 108, with a brief description mentioning that the shell was long and narrow with a high median ridge and with the back cinnamon-buff to ivory yellow, the marginal callus white or ivory yellow, with an oblique fold from the inner lip across the front.....Mantle closely spotted.....on gorgonian south of Boynton Inlet, Lake Worth, Florida. Pilsbry and Tom McGinty in The Nautilus, Vol. 53, (1) with Plate 1, 1939, present excellent photos of the four American Cyphoma known then, and the animals of three Cyphoma macgintyi are shown. This review, pages 1-4, discusses the tropical American Cyphoma. C. macgintyi is described more fully. Here the discussion reveals that the color of the shell is cameo pink to persian lilac and cameo pink to daphne pink within, with a white spot in the position of the external ridge.....found on gorgonians. The living animal was described as nearly white, closely dappled with dresden brown, or towards the mantle edge sepia spots or in other individuals nearly black spots. These are round to shortly oval, some oblong. It differs from C. gibbosum by having solid spots, not rings, on the mantle. In some individuals a few of the spots have light centers, in others some spots may coalesce, forming short bars. The respiratory siphon is unlike that of C. gibbosum by being dark colored, trumpet shaped, much wider at the end than in C. gibbosum or C. signatum, in which the siphon is white with a black border at the end, which is not expanded. The foot is profusely marked with oblique lines. Large numbers were examined alive.

*Pilsbry named this shell Cyphoma mcgintyi for Thomas L. McGinty, a well known Florida collector. In American Seashells, 1974, Abbott changed most, but not all, nomenclature involving "mc" names to "mac" names, stating in several places that it was due to rules or requirements by the International Code of Zoological Nomenclature.

Footnote continued on page 99

Fig. 2 Two animals of Cyphoma macgintyi Pilsbry, 1939, collected by Janey Moore at South Padre Island in 1974 clearly exhibit the dark spotted animal with dark siphons that are trumpet shaped, as described by Pilsbry. These animals are on branched gorgonia found on jetties or on cement walls such as at the Coast Guard basin at South Padre.

Photo by Janey Moore

Fig. 3 Both these shells of Cyphoma macgintyi were collected in approximately 65 feet by diver Janey Moore from the V. A. Fogg site of wrecked ships some 40 miles off Freeport, Texas. They are thicker and shorter than those from South Padre.

Photo by Constance E. Bocne

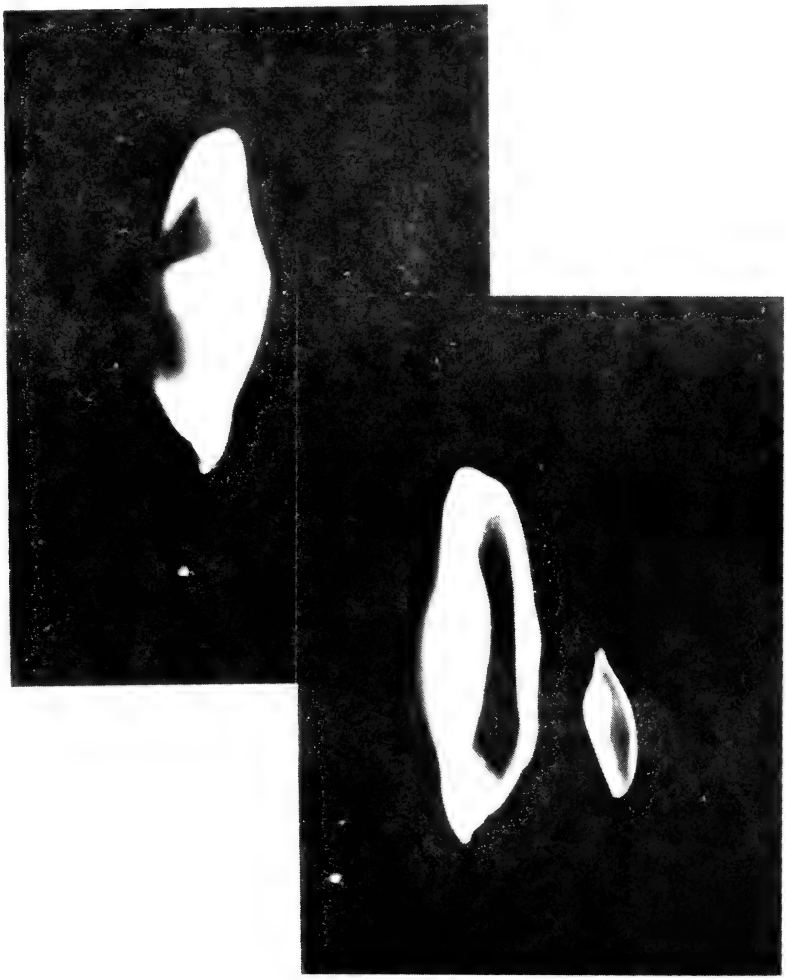

Fig. 4 The largest and smallest of three of the Cyphoma macgintyi specimens collected in May, 1983, on gorgonia on the jetties at South Padre Island by Janey Moore are shown. Note the darker color exhibited on the adult shell. This color was "cinnamon" or darker orange on the dorsum color zones.

Photo by Constance E. Boone

Pilsbry and McGinty's paper also referred to Cyphoma intermedium but said that the authors had not seen Florida or East Coast specimens and stated that they could not fully clarify this species until the animal was examined.

To date I have not been able to find a discussion of the animal of Cyphoma intermedium except a mention that I consider questionable. I will explain this later on in this report. I also have not too much reference material concerning the biological facts concerning cyphomas. I suspect there is still much to learn.

F. M. Bayer named a variety of Cyphoma macgintyi as robustior in The Nautilus, Vol. 55 (2), 1941, page 45, which was collected by Greek sponge divers on the West Coast of Florida, "probably Apalachee Bay." He said this animal had solid brown spots on examining the remains of one animal and said it was similar to C. macgintyi but broad, thick and heavy with the transverse dorsal ridge high and very prominent. The callus was thick and very strong on the right, less on the left of the shell; the color was white, diffuse light fawn or lavender pink, callus white.

Several years ago I was sent a sample of cyphomas from South Padre Island by our HCS members Ken and Margaret Snider (now of Mississippi). They knew I was interested in determining what the animals were that Ken was taking by diving in the basin at the Coast Guard Station at South Padre Island. They sent preserved material, very fresh, and on examining the animals and referring to the description and photos in Pilsbry and McGinty's report in The Nautilus, 1939, I concluded then that they were Cyphoma macgintyi.

Recently, Janey Moore made diving trips off the jetties at Port Aransas and also South Padre Island, seeking more Simnia material for the Houston Museum of Natural Science to study and also looking for Cyphoma. She was successful.

On May 29, 1983, Janey collected three Cyphoma macgintyi on Eugorgia virgulata, the branched soft gorgonian that attaches by a kind of leathery "foot" to boulders or hard surfaces. The gorgonians were isolated bunches, she said, and all were the same orangish yellow. I saw some still in her aquarium when I went to pick up the material for HMNS. The animals of Cyphoma, however, this time did not survive the weekend and journey home. She had two juvenile Cyphoma and one adult. They would have been hard to determine if Janey had not been able to say that the animals all had the same spotted mantles known as Cyphoma macgintyi. The smallest one was very thin, somewhat pinkish lavender at midbody at the columnellar area and with micro-transverse lines dorsally overall. The second one was a little more adult, had stronger coloration areas of purplish tones, some yellow and no longer with the micro lines. This one has been donated to the wet collection of HMNS. Janey has kept the adult which has strong yellow and cinnamon colored areas and buff coloration otherwise. (Pictured).

Janey states that all the Cyphoma macgintyi she has found have been on the base of the gorgonians rather than on the branches (bottom 3 inches of the stem).

Janey's collection includes Cyphoma macgintyi she has taken from earlier trips to Port Isabel. The animals you see pictured were collected in

1974 at the Coast Guard boat basin in 12-15 feet. She also collected C. macgintyi, shorter and stubbier, (BUT WITH THE SAME MANTLE PATTERNS) from the V. A. Fogg sunken ship area some forty miles off Freeport, Texas diving in 65 feet. All were taken on branched gorgonia on the upper surfaces of the boats. The V. A. Fogg was a liquid sulphur boat that blew up and sank offshore Freeport. It was dynamited to keep it from being a navigational hazard. Later Liberty ships were towed to the area and sunk to make a prime fishing area for sportsmen. Divers find this a treasure place of marine life.

Janey has not collected Cyphoma intermedium. Through the years I have been given specimens thought to be this from offshore Texas. No one knows anything about the animal or habitat, to my knowledge.

In Seashells of the Texas Coast, Andrews, 1971, pages 98, 99, both Cyphoma macgintyi and Cyphoma intermedium are listed for Texas. Under C. macgintyi Andrews stated that "several specimens of this animal with its cream body spotted with blackish dots and bars lived in an aquarium for months until they were consumed by a sea anemone." She gave the range Port Aransas south. She discussed the shell as elongated oval, with a rounded mid-dorsal ridge and gave the color as cream with blotches of pale lavender and the interior pale pink.

C. intermedium, in her book, was discussed as a shell that was pale reddish yellow when fresh and white when dead, with a weak dorsal, or absent, ridge with the body whorl swollen.....living on gorgonians "with the colorful patterned mantle wrapped around the shell." Range was given as Greater Antilles to Brazil, Bermuda and Texas.

Cate's A Systematic Revision of the Recent Cypraeid Family Ovulidae, supplement to Vol. 15 of The Veliger, January 31, 1973, discussed all cyphomas I have mentioned so far. He quoted Pilsbry's original description and then went on to describe a hypotype of Cyphoma macgintyi where he said that this species had a constant milk-white shell color with no hints of beige or orange to yellow as seen in similar species. Cate mentioned that the mantle color pattern consisted of numerous widely dispersed, fairly small, dark brown punctations upon a very pale ivory, almost colorless mantle membrane. The photos, 150 and 150a, show the typical spotted mantles like those pictured by Pilsbry and McGinty.

Cate proposed Pseudocyphoma as a new genus and assigned intermedium to it. He discussed the shell as pale fulvous, ovate-oblong and somewhat accuminate at both ends.....with transverse raised rounded angle rather above the middle. The location of the type was unknown to him. He provided the original illustration from Sowerby I and figured a hypotype. He limited distribution to the general type locality of Monte Cristi Beach, NW Dominican Republic, West Indies.

Also in this supplement Cate named Aperiovula abbotti on the basis of a Cyphoma Abbott had collected on the beach at Mustang Island, Texas. I know absolutely nothing more about this species at this time. The type is at ANSP. Cate described it, pictured it, and gave as distribution S. Padre Island, deep water off the SE coast of Texas. It is supposed to have a golden line above the adapical terminal beak. It looks like a juvenile shell, but I cannot know.

Abbott in his American Seashells, 1974, listed Texas in his distribution

for Cyphoma macgintyi and did not for Cyphoma (Pseudocyphoma) intermedium. He does not list Aperiovula abbotti at all.

Andrews in Shells and Shores of Texas, 1977, shows only Pseudocyphoma intermedium, using, I believe, the same photos used for her Cyphoma macgintyi in the 1971 book. She states that she had described this as C. macgintyi in 1971 but was correcting to C. intermedium. She does not list C. macgintyi as occurring in Texas waters in the 1977 book. Her description for C. intermedium adopts some of Cate's words, for instance "diamond shaped" for the shell, and she says the shell is white, glossy, ovate, oblong.....rare in Port Aransas. She states that the species was washed up alive on the beach with the colorful, maculated animal enveloping the shell following a severe freeze in January, 1962, lived in aquarium for several months until consumed by an anemone." She said less humped specimens are found in spoil banks along the ship channel and referred us to Cate, 1973.

I do not know what shell she used for the photos. I do not know if it was the shell that lived in the aquarium for months and had the spotted mantle. This would be the first time any animal description for C. intermedium is published, I believe, but we have to consider that this description was first used by Andrews in 1971 to describe C. macgintyi and that that description fits C. macgintyi.

We can only solve the problems by knowing more about the animals of all cyphomas in Texas, and elsewhere.

At this point, I do say we have Cyphoma macgintyi in Texas waters. We have a second Cyphoma we call C. intermedium.

Shoring up my investigations is one more bit of evidence---important, I think.

Knowing that I have been interested in this problem of Cyphoma in Texas, Dr. Harold H. Harry showed up one day with a gift for me. It is an enlargement of the anterior end of an unnamed Cyphoma which I could determine was C. macgintyi because it clearly shows the solid spots on the mantle and because it has an enlarged dark trumpet-shaped respiratory siphon, as discussed in Pilsbry's original description. The photo was taken by a student of Harry's who had collected two of the animals feeding on gorgonia at Port Isabel, Texas, some years ago.

*Abbott lists this shell as Cyphoma macgintyi. Emerson and Jacobson's American Museum of Natural History Guide to Shells, 1976, also used C. macgintyi, as did Rehder's The Audobon Society Field Guide of North American Seashells, 1981. Popular names include "McGinty's Cyphoma" and "McGinty's Flamingo Tongue" in these publications.

Clarification requested from Dr. Harold Vokes, professor emeritus of the Geology Department of Tulane University and until recently a member of the commission for the International Code of Zoological Nomenclature, resulted in receipt of pertinent information from the 1964 publication of the ICZN adopted by the XV International Congress of Zoology. Appendices to the Code outlined a Code of Ethics as a guide to good usage in nomenclature. Clearly stated is "They (appendices) do not have the force of rules, which are mandatory and are confined to Articles 1 to 87 of the Code proper, but rather have the same status as recommendations in the Code." Articles 32 and 33 are concerned with original spelling and subsequent spelling and are mandatory rules. They would not allow emendation of Pilsbry's original spelling unless a new rule since 1964 has been devised. Dr. Vokes has not found a rule concerning this problem, to 1974 at least.

The Appendices include under Part 21 of Appendix A the following: "Personal names bearing prefixes should be treated as follows in forming zoological names:

(a) the prefixes "mac," "mc," or "m" should be spelled "mac" and united, as in maccooki (McCook), maccoyi (M'Coy)."

This recommendation would apply, apparently, to new names. The recommendation, however, is being followed currently by many professionals for all names, including older names involving "mc" or "m'." Vokes will use C. macgintyi in an upcoming publication since he refers to Abbott's American Seashells in range and description discussion. Dr. R. Tucker Abbott (personal communication) states this is done for conformity and makes good sense. We note that as early as 1938 a specific name honoring Tom McGinty was spelled "mac." M. Smith named Murex macgintyi in Nautilus 51 (3), pg. 88.

MOLLUSCS AS ENDOTOXIN INDICATORS

DEBBIE McCAIN

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ABSTRACT

The Horseshoe Crab (Limulus) has been found to possess -D- Lactate Dehydrogense in its amoebocytes. These amoebocytes have been used as indicators for endotoxins. In this experiment I have used the common Marine Clam and the Moonsnail, both of which also contain -D- Lactate Dehydrogense in their blood, along with the Horseshoe Crab -as a control- to test for endotoxins to see if they can be used in conjunction with, or as a substitute for the Horseshoe Crab.

My data proved the -D- Lactate Dehydrogense in the Clam to be effective as a endotoxin indicator. The blood from the Moonsnail was inactive, possibly due to the small amount collected and tested. The Horseshoe Crab (the control) also tested positive. Therefore, the Clam could be used with the Horseshoe Crab to detect endotoxins, thereby possibly reducing cost and time and increasing supply of endotoxin indicators.

Editor's note: Debbie is the granddaughter of our member, Mildred Tate of Lake Jackson, Texas. Awards received March 19, 1983 at the Science Engineering Fair of Houston by Debbie include:

1. Houston District Society for Medical Technology-
   Honorable mention in Medical Technology

2. Marine Technology Society/U. S. Naval Institute-
   Certificate of outstanding achievement

3. University of Texas Health Science Center at Houston-
   Summer research fellowship alternate for
   outstanding performance

4. Texas A & M University at Galveston Summer School at Sea-

   Ten week cruise aboard the T/S Texas Clipper
   training ship of Texas A & M University.

   She will be able to earn six hours of college
   credit while traveling to New Orleans, Louisiana;
   Norfolk, Virginia; Boston, Massachusetts; St. Martin,
   Netherlands Antilles; La Guaira, Venezuela; Vera Cruz,
   Mexico.

Debbie will attend Texas A & M University this fall.

BOOK REVIEW By J. H. Keeler

SEA SHELLS OF SOUTHERN AFRICA by Richard Kilburn and Elizabeth Rippey, 1982, McMillan South Africa Ltd., Johannesburg, South Africa, Publishers. 249 pages, 46 color plates, 230 text figures, price $49.95.

This is a welcome addition to the growing group of excellent regional books for the shell collector, student, and research worker. It certainly goes beyond the "introductory manual" need cited by the authors.

The region of Southern Africa covered extends from the Kunene River at the Northern Namibia border on the west, around the Cape to the Zululand-Mozambique border on the east. Coverage is generally restricted to "species that may be found (living or dead) on the shore, the only exception being a selection of deep-water molluscs that are of particular interest to collectors". About 600 of the estimated 1500 littoral molluscan fauna of Southern Africa are treated. Omitted are mostly "scarce, obscure, minute, or shell-less" species.

The section The Southern African region and its molluscs discusses the influence of the major ocean currents, the littoral region and its zones, and the four maritime provinces. Each province is described, characterized and its significant molluscan fauna listed. A full-page colorcoded map further clarifies this discussion.

The sections on What is a mollusc?, How to build a shell collection, and How to look after the collection, are particularly well done and should be read by even the very experienced collector. An unusual section Pioneer shell collectors in Southern Africa provides an interesting and informative insight into the past progress and problems in the hobby.

The artistic illustrations by Elizabeth Rippey are excellent. Two or more views are given for many gastropods and their color or form variations. For bivalves, internal and external views are usually given, supplemented by detailed line drawings of hinge and tooth arrangements.

The text presentations of the shells are in taxonomic order. Each species treated is described; its range given; and is discussed in one or more paragraphs entitled Notes. These Notes may contain comments on the mollusc's habitat, its egg capsules, its camouflage, its eating habits, its rarity, comparisons with similar species, possible taxonomic problems, and even catch limitations and use as a food.

There are four appendices: Taxonomic Notes - elaborating on nomenclatural or taxonomic innovation; Scientific names and the beginner, explaining the desirability of the scientific names; Bibliography providing an excellent list of references, and Glossary of scientific terms, providing a guide to biological, ecological, geographical, and other terms.

For all the good features of this volume, there are negatives. For one - size, 9 1/8 x 11 3/4 inches. The almost 12-inch height of this book, taller than American Seashells or Monographs of Marine Mollusca makes it awkward to store with other shell texts.

The major negative is the omission or very limited treatment of major (although minute) families - turrids, marginellids, epitoniids, rissoids,

and pyramidellids as examples.

On balance, this book is a worthwhile addition to one's library not only for the information on Southern African shells but for the overall shell-related information.

(This book is in our HCS library.)

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LITERATURE NOTES By Constance Boone

One of the Coral Reef Papers in a recent Bulletin of Marine Science (33(2), pages 305-335, 1983) by Virginia O. Maes of the Department of Malacology, Academy of Natural Sciences of Philadelphia, is of interest to anyone interested in Turridae.

Titled "Observations on the Systematics and Biology of a Turrid Gastropod Assemblage in the British Virgin Islands," this report discusses eight species of turrids, giving their systematic positions and partial synonymies, discusses soft parts, and feeding habits and points out that often turrids cannot be determined in systematic positions unless the animals, their habits and feeding are known and studied. Even though some have similar shells they were found to be different on examination of anatomical features. Then there are reasons for animal internal differences - sometimes solved by learning feeding habits. This article is accompanied by fine plates of shells and their protoconchs.

In view of Odé's paper on taxonomy in this issue in which he often refers to the writings of Stephen Jay Gould, and in view of the fine essays Gould does produce that you should read, we urge you to read Opus 100 entitled "This View of Life" by Gould in the April, 1983 (Vol. 92 (No. 4), pages 10-21) issue of Natural History.

This essay describes Gould's personal research on Cerion, "the peanut land snail", in the Bahamas. According to Gould, this is the first essay he has written about the biological subject closest to him. It is his 100th column, and you will indulge him as you enjoy his story of his work to study this land snail in great depth to just know all that he could about Cerion. Its diverse forms have confused biologists for years. New field studies coupled with genetic studies continue to enlarge the picture of Cerion.

SOME REFLECTIONS ON TAXONOMY

By Helmer Odé

During the last few years I have been engaged in a study of the taxonomy of pyramidellid mollusca. It may be interesting to make a few comments upon some of the more noteworthy facts that I have discovered. My remarks will not be of a technical nature--at this place that would only be tedious, but I hope they rather will have some general interest.

From this rather continued effort of collecting all possible information about this most interesting group of animals I have come to one main conclusion which I can best present by quoting a similar opinion. Stephen Jay Gould, one of America's foremost biologists and authors, published in a bundle of essays, "Ever Since Darwin," a short essay entitled "Why We Should Not Name Human Races, A Biological View." I refer to this essay here not only because it is pleasant to read opinions of others which conform closely to my own prejudices, especially when they are better expressed and more clearly stated than I could have done myself, but also because the reading of Gould's essay suddenly made clear to me what I had felt a long time about mollusc taxonomy.

In his essay Gould mentions a monograph of the Hawaiian tree snail, Achatinella apexfulva, in which the author has described seventy-eight formal subspecies. On top of that number were added sixty additional "microgeographic races." Each of these units of subdivision was named and formally described with the result "an almost unreadable tome that buries one of the most interesting phenomena of evolutionary biology under an impenetrable thicket of names and static descriptions" (quoted from Gould).

How true! This is precisely the feeling I have acquired concerning pyramidellid taxonomy. This group of mollusca boasts a respectable age: at least since the Cretaceous they have been living and thus one might object that whatever case I will make it will not be comparable to that of Achatinella. But that is merely a question of scale. Literally thousands of taxa have been defined (well over 6,000) and the animals or rather their shells, have been baptized, classified, photographed, renamed, regrouped and what not, but hardly anything worthwhile is known about them. Neither their internal relationship or those to other groups (Actaeonidae, Fossaridae, Vitrinellidae) nor their distant past, nor even their present status is understood. It was only about 50-40 years ago that the ectoparasitic mode of life of some of these gastropods became proven and some data about their biology got established. Consequently they jumped in the general scheme of classification from the Mesogastropoda to the Opisthobranchia, but some workers would like to put them under a grouping named Entomotaeniata.

There are many problems such as: are all Pyramidellidae ectoparasites; do they all possess a similar anatomy; are the plicae on the columella and the suberostrophic nucleus truly characteristic? Some other problems concern the status of some genera at present placed in families having no ties whatsoever with pyramidellids.

In his essay Gould asks the question "Shall our approach to such variation be that of a cataloguer.....Would it not be better to map this variability objectively without imposing upon it the subjective criteria for formal subspecies?" The relative intense effort by me to solve some of the taxonomic problems concerning the pyramidellids convinced me once and for all that the answer to Gould's first question is NO! And that to the second is YES. But I am prepared to make some concessions to those that love to create new labels. After all, I am convinced in spite of an enormous

duplication of names there are still undescribed species to be found. The labelling of new biological "species" is only sensible if other studies of greater biological interest are undertaken at the same time.

Gould's second question can be immediately applied to much larger groups than a single recent species of land snail, and sampled over much longer time than the present. And thus it is my impression that the sometimes frantic labelling and creation of new taxa without a solid knowledge about the facts and pertinent data upon which these taxa should be based is a hindrance to the progress of science. As an example I may cite the enormous number of names for such European species as Turbonilla lactea Linne and Pyrgulina indistincta Montague. As far as I know, little is known about their biology, their ranges of variation, their hosts; it may be that both will turn out to be groups of related but separate species. But that I believe unlikely. It is quite certain that the evidence of the exoskeleton only of these animals will not solve the problems and still today new names are being added to their synonymies. To straighten out what I unreservedly may call "a mess" will require much effort and museum work of comparison.

The reasons for this, in my opinion, unsatisfactory status of mollusk taxonomy can undoubtedly be pinpointed.

Not so long ago I commented in these pages upon a fact that struck me suddenly after discovering in the library of the Houston Museum of Natural Science a book with a dedication to Darwin written in Latin on the front page. In the malacological literature of the years 1860-1890 one hears hardly an echo of the Darwinian struggles and although the trivial names jeffreysi, dunkeri, etc., are often given, the name darwini (only one among pyramidellids) is given to indicate the North Australian town.

I have the feeling that Jeffreys and Dunker (who wrote the dedication in the book I referred to above), both leading malacologists in Western Europe, were basically cataloguers. However, during their working years deep dredging operations became possible and improved steam engines made travel to previously hard to reach places fairly convenient. The flood of new data and material required that some of the fundamental biological work had to be postponed. However the result of this is that most of their work essentially is dull. It is true that in some of that work more interesting topics were discussed such as faunal provinces. The difference between the Mediterranean and Red Sea, for instance, attracted attention from the start.

But most authors did not follow the example of Darwin. He worked long and arduously on the biology of barnacles before he wrote about their taxonomy, and as a gesture of esteem for his work on these animals Dunker sent him his book with the dedication we have discussed.

The description of most molluscs of those days and also today is restricted mostly to the exoskeleton, at least for marine molluscs. Many species have even been defined on the basis of a single, sometimes incomplete, specimen!

In many respects the last work by Bartsch (1955) on a Pliocene mollusc fauna of Florida is a classic example of the unrestrained creation of unnecessary taxa. Curiously enough it also contains a biologically superficial account of two cases of hybridization, one between races of the land snail Cerion and the other between turbonillas. This effort by Bartsch throws an unexpected light on human nature: suddenly Bartsch becomes aware of a large amplitude of variarion within a species, but instead of splitting his material up in a number of species and varieties as is his custom he seeks

another solution. To accept a large amplitude of variation is impossible and therefore a somewhat exotic solution of species hybridization is chosen. Bartsch' so called hybrid Striopyrgus constitutes a valid species that also has been collected elsewhere and ironically may be one of the few truly new species in that publication!

The patient enumeration of all pyramidellid taxa has disclosed another fact, namely, the large variability of many of them. Some of these variable species have received many different names, often called "varieties" whatever the meaning of such a category may be. Today authors still describe varieties and forms with Latin names and formal descriptions.

Thus the variable nature of pyramidellid species is quite obvious, and the question is justified: What does that mean? To answer that question let us consider another of Gould's essays: "The Pace of Change," which is essay 17 in the "Panda's Thumb," another collection of essays on evolutionary biology.

According to biologists the average duration of an invertebrate species may be of the order of 5-10 million years. This may appear a quite sweeping statement and if tested against the present opinions concerning pyramidellids as expressed in the literature quite unlikely to be true. What can one infer from the data? There is a relatively small number of species that has a much longer span: some lived from the middle Eocene into the Oligocene and others from the Miocene into the recent. Such species probably lived longer than 25 million years. Very many species are only known from the recent. Did they recently arise or is their record imcomplete? Also there are several species that have been reported from the Pleistocene only; for both these categories one can not claim an "age" of 5-10 million years. I suspect that many of such short term species are not good species but merely "variations" of some other related species. What happens when a species dies out? The record shows that quite often it is replaced by one or more quite comparable but clearly different species. What happens is briefly this: a species, possibly not a single but several, arises out of the genetic instability of an older one, gropes during a relatively short time of its existence for a stable form but finally settles down to a long uneventful stable life during which only normal phenotypic variations are produced. Only when old age of the species (not the individual) is reached, instability and thus change can occur, resulting possibly in new species.

Now this is an interesting model which would in theory enable us to define a species more clearly. If true it has some quite unexpected consequences; namely, if we could follow for some Cambrian organism, one would see the rate of change of the lineage being accelerated during short intervals of time between. The amazing thing is this: because the Cambrian explosion of species took place about 600 million years ago and assuming 5 million years for the average age of a species such a lineage consists only of 120 species! And, if the multicellular average species life were taken at 10 million years the number of species is only 60. This implies that each rapid change must have bridged a large change.

Darwin, being a disciple of Lyell, emphasized the slow and continuous change in evolution, the same as Lyell did for geological processes. In other sciences the emphasis also was on the continuous: mathematics with calculus and mechanics with its continuous motion described by analytic functions. Only in this century other ideas would come to general attention. It must be stated here that Huxley pointed out to Darwin the dangers of the strict assumption of uniform slow continuous change in evolution.

It appears now quite likely that this rate of change has been less uniform than Darwin and his followers argued. There is a whole group of interesting problems waiting for the taxonomist to solve: to recognize which species among gastropods and the pyramidellids in particular are in a "senile" stage and which are merely producing normal phenotypic variations, of course assuming that our model of evolution is valid. A second question is whether molluscs in general had speciation periods of 5-10 million years. Or is it possible that parasitic organisms such as pyramidellids vary at a more rapid rate? Does the record confirm that such "senile" variations leading to new species arise as a rule at the end of 5 million years or do several arise in the course of the species life? Do such variations arise as a rule on small specialized populations living in environments subject to change (for instance, climate)? To answer these questions is, I think - and I am prejudiced - more interesting than more purely descriptive taxonomic work.

How the pyramidellids arose is not well known. At the end of the Cretaceous there were definitely a number of species widely dispersed over the globe, some of which already carry the same generic designation as the recent ones. The correctness of those generic names is doubtful in my opinion. Reports of much older species concern material I would not classify as pyramidellid although it could be related.

What happened at the end of the Cretaceous is unclear. The mass extinction of many groups of animals also wiped out some of the Cretaceous pyramidellids. This extinction is nowadays usually ascribed to some cosmic catastrophe, such as radiation damage caused by the explosion of a nearby star, or of the earth, with a cosmic projectile such as a comet.

As far as the pyramidellids are concerned, a break is clearly indicated because almost all early Eocene genera appear to be new, yet the pyramidellid fauna is definitely not yet modern. It is a point of interest to note that some widely divergent Eocene faunas, such as those of the Paris Basin and those of Java, have very similar species content. The truly recent forms among pyramidellids arose in the Miocene, that is about a "duration of 4-5 species" ago. In that respect the lineages that Sacco, an Italian paleontologist who worked on Tertiary faunas of the Piedmont, drew at the end of last century, may have some significance, but his number of species may be on the high side.

This brings me to another one of Gould's essays, No. 20 in the "Panda's Thumb," entitled "A Quahog is a Quahog," in which Gould discusses some taxonomies of primitive people. He starts out by mentioning a fundamental difference in which people tend to view science. On the one hand there is the view of Huxley who defined science as organized common sense. Diametrically opposed to such a view is the one science must probe behind a facade and find the "true" meaning of things. It is not surprising that Lyell who had to probe behind the facade of nature's catastrophies in order to come up with his theory of uniformitarianism was one of his adherents. This briefly stated means that geologic processes that operated in the past are those that still operate today and that their results are slow and gradual (See also "Uniformity and Catastrophe" in "Ever Since Darwin" by Gould). Unfortunately the latter point of view has become, through the somewhat abstract results of modern physics by such esoteric disciplines as relativity, quantum physics and particle theory, widely fashionable. It is to be regretted that physical scientists, supposedly properly brought up, in their aversion for metaphysical speculation are writing the most blatant metaphysics when dealing with some implications of modern astronomy.

But enough of my own prejudices which are all aligned on the side of Huxley and Lagrange. It is the latter who said of mathematics: if you understand it you can explain it to the first man you meet in the street! Gould cites two examples where primitive people used a scheme of names for species which are in both instances almost in a one to one relation with modern Linnean use. It is true that these names were given to either plants or animals which were important to them. As an aside I may now invert the argument and argue that the lack of a consistent set of popular names (not those artificially created later by some authors as translations of scientific names) indicates that shells were never of economic importance to our ancestors. Otherwise a consistent set would have arisen naturally, because all people by nature are endowed with a remarkable amount of common sense. This makes it possible to recognize variability in a single species as opposed to the variability between species within a genus. It is only when the naming of biological entities becomes an end in itself that it loses its connection with reality and people may ask for the deeper meaning behind a facade of imposing scientific volumes. And then there is no deeper meaning than that one species has 16 costae on the penultimate whorl and another 20.

Finally, I will comment upon some other facets of taxonomic work with mollusks. One of these is particularly annoying; namely, the quite often scandalously poor way of reporting references. Of course, there are authors that are exemplary in that respect, but, in general, references have received poor care and there is a general disrespect for quoting precisely. I have Xeroxed many bibliographies and compared quoted titles. One finds, for instance, with one author: Catalogue des coquilles fossiles etc., and with another: Catalogue des fossils etc. Also dates are often contradictory. Now it is not always possible to quote these correctly because the printed year in a book is not always the year of publication, especially in older works. However, even fairly recent publications are reported by various authors at various years. A further source of confusion is often page, volume and plate numbers, which sometimes are quoted wrong by an entire sequence of authors. This points to a somewhat deceptive practice of which the late Dr. Stenzel used to say that it not only bordered on dishonesty but that it was dishonest to quote references without personally having verified them.

There are some nomenclatorial problems which are particularly vexing in the pyramidellids. When Dall and Bartsch started to write their joint papers they adapted to the somewhat hardheaded attitude of Jeffreys who named almost any pyramidellid generically Odostomia. Dall and Bartsch almost grudgingly also allowed Turbonilla but subdivided both Odostomia and Turbonilla in a very large number of subgenera. The result of that reshuffle was the creation of a large number of preoccupations, because all the poorly defined A. Adams and de Folin genera became part of Odostomia and Turbonilla. Bartsch coined most of these new names. If, as I believe, many of the Adams and de Folin genera will be recognized as such, most of the Dall and Bartsch relabelling will be proven unnecessary and their names must be discarded. It has long been a puzzle to me why such obvious differences as there exist between small shells of Dall and Bartsch's Odostomia could not be generically recognized. After all, if these shells had been three inches large instead of three mm. there would have been no doubt that they would have been classified in different genera. This shows the very subjective methods operating in mollusk classification.

Finally, I may mention another difficulty about taxonomy to which Gould refers somewhat obliquely in his essay "Nature's Odd Couples." At the very end Gould writes "This exchange highlights a disturbing issue in the transmission of news about science to the public." Gould refers here to the fact

that in general the media report only the highly colored initial phases of some interesting discovery or controversy but that they neglect to follow up because it is no longer newsworthy. It is exactly the same with taxonomic news although that type of information is put out for taxonomists. The follow up of taxonomic corrections is slow. The reasons for this are easily understood when one considers human nature. For instance, in the U. S. A. some of the changes the French worker Cossmann proposed remained largely unknown, firstly because Bartsch developed a somewhat proprietary attitude towards the group and secondly because Cossmann had the perhaps somewhat objectionable habit to publish his changes or corrections in footnotes at the bottom of a page of in-difficult-to-obtain journals. In these matters also, feelings of national pride play a role. I remember quite well how a compatriot of mine was very upset that a small Hydrobia went by the name invented by an Englishman instead of an earlier--but for some reason considered invalid--name invented by a Dutchman. Perhaps the fabric of taxonomy for that reason (and the others touched upon here) is richer and more colorful than it otherwise would have been.

References:

Ever Since Darwin, Reflections in Natural History, by Stephen Jay Gould, 285 pages. W. W. Norton and Co., New York, London, 1977

The Panda's Thumb, More Reflections in Natural History, by Stephen Jay Gould, 343 pages. W. W. Norton and Co., New York, London, 1980

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OLE! SAN JOSE!

By Helen Eberspacher

The Conchology Group of the Outdoor Nature Club went to Port Aransas and San Jose Island over the weekend of April 9, hoping to find the elusive Purple Snails but we were disappointed again. However, on San Jose Island (formerly St. Joseph Island) we had wonderful luck finding shells we had never found there before. There was a drift line several feet wide in many places and several inches thick, and that is where we had our best finds: lots of Scotch Bonnets (including one albino); many small Atlantic Partridge Tuns averaging about 1½ inches and one large Tun that was three to four inches long; several Mitchell's Wentletraps and at least one Angulate Wentletrap; one Atlantic Distorsio; many, many large Pen Shells; lots of double Incongruous Arks, double Disks, small double Greatheart Cockles; quite a few double Tellins, including some pink ones; some red and yellow sea whip with Simnias; also some Moon Snails, Baby Ears and Olives.

Later, some of us went to a little beach along the channel near the Ferry landing on the Port Aransas side and found a few Apple Murexes, about a dozen small, beautifully colored Lightning Whelks (all with Hermit Crabs), one Angulate Wentletrap and a couple of very old Tulips. As usual at this spot, there were hundreds of small auger type and button (Modulus) type shells.

(Editor's note - I believe the small tun shells should be young Tonna galea. I note the "auger type" shells refer to dead Cerithium species we no longer collect alive on Texas shores. Nor do we find Modulus on shore alive although diver Janey Moore has taken Modulus alive from offshore.)

SEARCH AND SEIZURE

BY CONSTANCE BOONE

This is my 54th Search and Seizure column, and this issue completes the 19th volume of Texas Conchologist. You might like to know something of the history of both.

Texas Conchologist began as the club newsletter with Liz Eubanks as editor and Helmer Odé as associate editor in September, 1964 with No. 1 of Vol. 1. There were to be nine issues for the monthly meetings, but from the first several numbers were included in one issue sometimes. The Editor was to be elected annually, but it was immediately clear that the problem was to keep an editor, not elect one. The quality was high from the beginning, in my opinion. Notes on collecting on Texas beaches were of primary importance. Dr. W. W. Sutow was very involved in producing and writing for the journal. Odé and Anne B. Speers started "Notes Concerning Texas Beach Shells" with a good list of references. Through Dr. Sutow's connections, we printed the journal at M. D. Anderson's print shop. We had members type it at first, according to offset instructions, then finally used a typist we paid at the print shop. I joined the club in 1965 and also started working with Odé and Harold Geis on the Northwest Mollusk Population Survey. Much of what I learned about mollusks came from this latter association, although I had been a sheller with my family for some 10 years before that.

As an exnewspaper reporter and a dabbler (through the years of raising a family) in writing feature stories, etc., doing local newsstories and serving in reporter volunteer jobs for nonprofit organizations, I really never lost my love of printer's ink. It soon became evident that I would go to Geis' house to work on shells and that I would bring in shells I had found on beach trips and report these to Helmer. Of course, I wanted him to identify them for me, but I think I also wanted him to report this in Texas Conchologist. By then he was Editor. Liz Eubanks left Houston in the summer of 1965, and Vol. II started in August, 1965, with Odé as editor.

It was not long before Odé was saying to me when I brought in something to discuss: "Write it up!" Now I started with short collecting notes and also with some biographies of Texas collectors. Later I became involved in the circulation and in delivering copy to the printer, handling film to be used, and anything else that needed to be done to help get out the journal.

My first Search and Seizure was in Vol. VIII, No. 1, August, 1971 and concerned Dr. J. P. E. Morrison's paper on "Western Atlantic Donax" published in the Proceedings of the Biological Society of Washington (Vol. 83, #48, Feb., 1971).

It was a half page article reporting this paper, and my title was born in my mind based on what I wanted to do in my writing and also because of family occupation. My husband is a lawyer and was at that time a special agent for the Federal Bureau of Investigation. I heard "search and seizure" often in my home. Legally it has standing as the right to enter, search, and seize evidence for use in cases. My news reporter background where I did also write headlines and devise titles for stories led me to use this for my role in collecting and studying mollusks for "evidence" in advancing knowledge for me, my readers and the science of malacology, hopefully.

Search and Seizure was not continuous at first. My columns did continue

fairly regularly, however, as I reported on shelling trips to Cedar Keys, South Padre, Bolivar, Galveston after Hurricane Fern, finding Umbraculum at night at Panama (Pacific), and other journeys of mine and of other members. From the first I wanted to report anyone's collection, and I still want to do this.

Vol. IX of the Texas Conchologist was quarterly. We had separate notes for the meeting. The printer rebelled at the large amount of copy quarterly, and we returned to nine issues for Vol. X for one year only. However, with Vol. IX Search and Seizure became a permanent fixture of TC.

We were told we had to find a new printer at the end of Vol. X, and I was very much involved in putting out the journal with Odé, as was Sam Miron as circulation chairman. We found a printer who wasn't the most reliable, but he did help put out our quarterly and eventually found us a typist we paid. Sometimes the journal was very late; sometimes we wept over the printing, but most of all we were proud of our efforts.

In 1974 Odé informed us he would no longer be editor but would continue to write for TC. William Keeler took the helm, and I continued to write Search and Seizure and other articles. In 1977 before the final quarterly issue of Vol. XIII Bill Keeler resigned and Helmer and I put out the issue reporting the "Wonderful World of Shells" held for two weeks in May 1977, at the Houston Museum of Natural Science. Helmer agreed to be Editor again. We needed him.

I have been editor for the last five volumes. Herschel Sands, a member then, did the typing, and we made format changes such as the blue covers and introduced our logo. We've now had three more printers and several typists and Ruby McConnell did the recent bivalve index of Odé's monograph. We begin Vol. XX in the Fall.

Search and Seizure continues.

HOWEVER, it must be evident to you that Texas Conchologist must have more membership effort to continue going on for many years. Dr. Sutow is deceased; Helmer has retired from Shell and moved to Austin although I continue to count on him to write for TC and will "badger" him to do so, and I have been involved with TC since my first little note written on summer shelling ideas published in Vol. II, No. 9, May, 1966.

I appreciate articles sent to me. I am very proud to publish articles sent to me by professionals. I am thankful for the few articles offered me by members who hear my appeals. (Jim Keeler produced the book review in this issue and said he felt like a schoolboy who had to have a paper ready for class since I demanded copy one day for 2 days later!) I am happy to have Emily Oakes involved in typing at present. She is renting a typewriter to do this issue.

The trials and tribulations of being editor or working on "dummying" the issues could go on infinitum. For instance, the last issue caused both Emily and me many problems. Emily used three typewriters to finish the issue, one that had type that was so easily erased that some copy barely made it into print. The club does not own the kind of executive typewriter we need to make TC look like we want it to. We are limited in funds overall. My printer had a breakdown in machinery. After some delay, I finally went

to pick up the copies just a few days before the end of the quarterly month and complained about the trimming of the covers. Some were extremely uneven. However, when I looked through a copy I picked up I was horrified to see that two pictures were switched. That's why you saw two sets of staples in your issues and why some copy seemed different. They had to redo the issues and replace some covers. We finally did get it to you. Grytch Williams continues to do a good job of circulating the issues and can help any of you with missed issues, sell you back issues or volumes, etc. If you don't own a full set of TC, you should!

So if someone is willing to learn, willing to jump in this business of TC, do call this editor. Do you want TC to continue? You might write letters to the editor and let us know what you want to do and what you suggest we do.

I see a great many newsletters from other clubs. I do see some clubs which have members who tackle information on a certain species or a genus or even a family of mollusks and work up articles for their newsletters. We do have some of this; we could use more. Even reporting new species from the journals would be interesting, I think. It is difficult to keep up with them as descriptions appear in so many different publications. If you like Murex, write about one of the new ones you have acquired, perhaps. We can use book reviews. We'd be happy to have you think about a column on members again or one on exchanges, etc. I've now had my say; you now must act.

And for this issue then, Search and Seizure continues on its way here with some current reporting:

Dr. T. E. Pulley returned in late May from a brief stay at Playa Carmen, the sleepy little ferry town on the mainland across from Cozumel Island, Quintana Roo, Yucatan Peninsula, Mexico, with a collection of thirteen "albinistic" Hastula maryleeae. He collected these in the sandy surf zone near the ferry landing. Although the range is known to extend that far, I have never collected any in several trips to several islands and mainland areas of that Yucatan area. Dr. Pulley had this material in alcohol. It is coincidental that the next week I received a call from Dr. Harry Lee of Jacksonville, Florida, seeking some of this species in alcohol for studies on Hastula. Dr. Pulley has shared four for the SEM and radula studies Dr. Lee will promote. We will keep you advised.

Also the last week of May, Janey Moore of Clute, Texas, called to say she had cyphomas and simnias for our study at Houston Museum of Natural Science. You will hear more about the simnias in a future issue. We also appeal to other divers to bring in material from the Gulf of Mexico, or Caribbean, with specific Gorgonians on which each species is collected. We also need underwater photos of the animals or photos of the animals with the specific Gorgonian taken in aquaria. Call me if you can help in this study so we can tell you exactly what we want to study and how we need the material.

On Monday, May 6th I went to Clute to pick up Janey's material. After making some photos, taking notes, etc., Janey asked if I was interested in going to Surfside jetty to check out if Brachidontes domingensis and Isognomon alatus (reported in SS in Vol.XIX, No. 3, April, 1983) could still be retrieved.

Yes, we did find both species, at low tide in the crevices of the granite boulders, about halfway out the jetty, on the channel side. These are small and distorted because they live among the stunted Crassostrea virginica and barnacles. It is hard to be sure we do have I. alatus, but Dr. T. E. Pulley

assures us that we do. However, on this trip I spent time scraping through the algae on the flat rocks near the water and running my hands down the side of the boulders to the water to see if I could find other mollusks. I only found Littorina lineolata and oysters and some Siphonarias, except for one tiny juvenile Isognomon attached to a pried-off oyster. This one looks like Isognomon bicolor. I suspect we have both trying to establish on the jetties there. We have had a very mild winter. Maybe they will be able to last awhile.

Janey also found Ischadium recurvum, small ones among the Brachidontes. She also remarked on several of the Brachidontes that seemed to be B. exustus. Both species are found there, I think.

For me, there was "still gold in them thar hills." I scraped off a small oyster and some barnacles and peered at the lot through my head lens. I saw a tiny little red snail moving along and knew I hadn't seen that there before. Back at Janey's we examined it under the microscope. It was my first live Pedipes mirabilis north along the coast from Port O'Connor, Texas. Remember---we have had a mild winter. This little loping snail that is an air breather and almost a land snail chooses to hide under smoothish rocks or in crevices of boulders in our area high above the water levels. It has always been a favorite of mine. I have, and others have, collected dead shells in the drift at Galveston and San Luis Pass from time to time. They were so fresh we figured live ones were somewhere if we could find them. So this was a first for me for our area. I only found one. There must be more. Try to find them this summer.

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HAVE YOU PAID YOUR DUES FOR VOLUME XX?

The By-Laws have been changed so that dues were to be paid by June 1, 1983 for the new year starting with the first meeting the fourth Wednesday in August. The first quarterly of Volume XX will be issued in October. You will not receive notices of meetings or get this first quarterly, if your dues are not paid. Single membership is $9.00. Family membership is $10.00. Membership entitles you to receive 9 meeting notices and four issues of Texas Conchologist (Vol. XX). Treasurer is Valerie Middaugh, 2701 North Blvd., #1, Houston, Texas 77098. (Telephone 524-6542 if you have a question.)

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