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Texas

# CONCHOLOGIST

VOLUME VI, No. 1

SMITHSONIAN  
MAY 31 1969

## NOTES & NEWS

LIBRARIES

### NEXT MEETING

OUR FIRST MEETING OF THE NEW YEAR FOR THE SOCIETY WILL BE HELD WEDNESDAY, AUGUST 27, AT THE MUSEUM OF NATURAL SCIENCE, LOCATED IN HERMANN PARK EAST OF FANNIN AND THE STATUE OF SAM HOUSTON. DR. T. E. PULLEY, DIRECTOR OF THIS MUSEUM AND LECTURER IN BIOLOGY AT RICE UNIVERSITY, WILL CONDUCT US ON A PREVIEW TOUR OF THE NEW WING OF THE MUSEUM, DUE TO OPEN ABOUT NOVEMBER. WE HAVE ALL BEEN LOOKING FORWARD TO MORE SPACE IN THE MUSEUM, PARTICULARLY FOR MOLLUSKS AND OTHER SEA LIFE. THE MEETING WILL BE AT 8:00 P.M. (BE SURE TO NOTE THIS TIME CHANGE!), AND YOU WILL ENTER THROUGH THE FRONT DOOR WHERE SOMEONE WILL BE STATIONED TO LET YOU IN, AS THE MUSEUM IS NOT OPEN THIS NIGHT TO THE PUBLIC. WE HAVE MADE ARRANGEMENTS TO HAVE ALL OUR MEETINGS THIS YEAR AT THE MUSEUM.

### REMINDER TO SUBSCRIBERS

WE REMIND OUR SUBSCRIBERS WHO DID NOT YET DO SO TO REMIT \$2.00 BEFORE OCTOBER 1ST, 1969. NO COPIES OF THE CONCHOLOGIST WILL BE MAILED OUT AFTER THAT DATE UNLESS THE SUBSCRIPTION FEE HAS BEEN RECEIVED.

DUES ARE PAYABLE TO:

HOUSTON CONCHOLOGY SOCIETY  
c/o MRS. GEORGE D. VAN ERP  
11306 SURREY OAKS LANE  
HOUSTON, TEXAS 77024

### SANTA BARBARA MALACOLOGICAL SOCIETY SHELL SHOW

ON OCTOBER 10TH, 11TH, AND 12TH, THE SANTA BARBARA MALACOLOGICAL SOCIETY WILL HOLD ITS SHELL SHOW AND AUCTION FEATURING EDUCATIONAL AND COMPETITIVE EXHIBITS AND DISPLAYS OF RARE OR OUTSTANDING SHELLS. MAJOR ATTRACTIONS WILL BE THE LEGENDARY CONUS GLORIAMARIS ON LOAN FROM THE SANTA BARBARA MUSEUM OF NATURAL HISTORY, AND A PERFECT SPECIMEN OF THE EVEN RARER AUSTROHARPA PUNCTATA WHICH WAS THE BEST SHELL OF THE SHOW IN THE 1967 AUSTRALIAN SHELL SHOW, YEPPON, QUEENSLAND.

### NEW BIVALVE

IN THE VELIGER FOR JULY, VOL. 12, No. 1, P. 40-42 HAS APPEARED THE DESCRIPTION OF A NEW BIVALVE: MACOMA PULLEYI BOYER. THIS BIVALVE OCCURS OFF THE COAST OF LOUISIANA AND TEXAS. SEVERAL LOTS ARE PRESENT IN THE COLLECTION OF THE MUSEUM OF NATURAL SCIENCE OF HOUSTON, DREDGED OFF GALVESTON AND FREEPORT. THE SPECIES HAS BEEN NAMED FOR DR. THOMAS PULLEY, DIRECTOR OF THE MUSEUM. AT OUR NEXT MEETING THE SPECIES WILL BE ON EXHIBIT.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY VITRINELLIDAE

THIS INTERESTING FAMILY OF SMALL GASTROPODS IS REPRESENTED BY MANY SPECIES IN THE BEACHDRIFT OF TEXAS. BECAUSE OF THE MINUTE SIZE OF THESE SHELLS ALMOST ALL SPECIES HAVE UNTIL RECENTLY ESCAPED THE ATTENTION OF TEXAS BEACHCOLLECTORS. THE MOST CONVENIENT WAY TO COLLECT THESE SHELLS IS TO PICK SAMPLES OF FINE BEACHDRIFT UNDER A BINOCULAR MICROSCOPE.

MOST TEXAS SPECIES WERE FIRST DESCRIBED FROM FLORIDA. IT IS NOW CLEAR THAT A LARGE NUMBER OF THESE SPECIES WILL ALSO BE FOUND IN THE WESTERN GULF OF MEXICO. A REVIEW OF THE GULF OF MEXICO SPECIES OF THIS FAMILY HAS BEEN PRESENTED IN THE DOCTORAL THESIS OF D. R. MOORE, WHOSE NOMENCLATURE WE HERE FOLLOW. SO FAR OVER 20 SPECIES, DIVIDED OVER 11 GENERA HAVE BEEN FOUND IN BEACHDRIFT.

CYCLOSTREMISCUS SUPPRESSUS DALL 1889. THIS IS A COMMON BAY SPECIES WHICH IS EASILY COLLECTED FROM DRIFT ON GALVESTON ISLAND, AND AROUND PORT ARANSAS AND PORT ISABEL. IT IS VIRTUALLY ABSENT IN OFFSHORE DREDGE SAMPLES. FIGURED IN: NAUTILUS, VOL. 59(3), PL. 8, FIGS. 5-5A.

PREVIOUS REFERENCES: 19

LOCALITIES: FAIRLY COMMON ALONG ENTIRE TEXAS COAST.

CYCLOSTREMISCUS PENTAGONUS GABB 1873. FORMERLY THIS SPECIES USED TO BE KNOWN AS C. TRILIX BUSH AND BEFORE THAT AS ADEORBIS SUPRANITIDUS WOOD. THE LATTER IS HOWEVER A WESTERN EUROPEAN FOSSIL. AT GALVESTON, C. PENTAGONUS IS PROBABLY THE MOST COMMON VITRINELLID. THE MAJORITY OF BEACH SPECIMENS IS CHALKY AND WORN, AND FRESH MATERIAL IS RELATIVELY UNCOMMON. THIS IS A DWELLER OF THE SANDY PARTS OF THE SURFZONE AND INLETS, AS SHOWN BY ITS MUCH LESSER ABUNDANCE IN THE INNER BAYS AND ITS COMPLETE ABSENCE IN OFFSHORE WATERS.

FIGURED IN: 3,4,7

PREVIOUS REFERENCES: 12,14,19

LOCALITIES: ON ALL TEXAS GULF BEACHES.

CYCLOSTREMISCUS JEANNAE PILSBRY AND MCGINTY 1945. THIS SPECIES REPLACES BOTH ABOVE MENTIONED ONES IN THE TEXAS OFFSHORE WATERS, WHERE IT IS FAIRLY COMMON IN DREDGE SAMPLES TAKEN AT ABOUT 10 FMS. BECAUSE OF ITS



DEEPER HABITAT IT HARDLY EVER REACHES THE BEACH, BUT A SINGLE SPECIMEN IS KNOWN FROM BEACHDRIFT FROM MATAGORDA BEACH (COLL. ODE').

FIGURED IN: NAUTILUS, VOL. 59(3), PL. 8, FIGS. 4-4A

PREVIOUS REFERENCES: TEX. CONCHOL. VOL. 4, P. 38

LOCALITIES: MATAGORDA BEACH.

CYCLOSTREMISCUS BEAUI FISCHER 1857. ONE OF OUR LARGEST SPECIES OF WHICH ONLY A FEW TIMES EMPTY SHELLS HAVE BEEN FOUND IN BEACHDRIFT AT PORT ISABEL (SPEERS AND OTHERS).

FIGURED IN: 3,4,6,7

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ISABEL

SOLARIORBIS INFRACARINATA GABB 1881. THIS SPECIES USED TO BE KNOWN AS SOLARIORBIS EUZONUS. AT GALVESTON IT IS MUCH LESS COMMON THAN CYCLOSTREMISCUS SUPPRESSUS BUT DEAD AND SOME RATHER FRESH MATERIAL IS KNOWN FROM SAN LUIS PASS. IT IS COMMON IN DRIFT AROUND PORT ARANSAS AND PORT ISABEL. TO JUDGE FROM ITS DISTRIBUTION IN SAMPLES IT MUST BE A BAY SPECIES BUT LIVE MATERIAL IS AS YET UNKNOWN.

FIGURED IN: 7

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: GALVESTON, MATAGORDA BAY, PORT ARANSAS, PORT ISABEL.

SOLARIORBIS BLAKEI REHDER 1944. THIS IS ONE OF THE SMALLEST VITRINELLIDS OF THE TEXAS COAST, IMMEDIATELY RECOGNIZED BY THE SMALL RADIAL RIBLET WHICH EXTEND TO ONLY HALFWAY THE WHORL FROM THE SUTURE, WHEN VIEWED FROM ABOVE, AND ITS VERY NARROW UMBILICUS. IT IS FOUND OCCASIONALLY IN BEACHDRIFT ALL ALONG THE TEXAS COAST. IT PROBABLY PREFERS TO LIVE IN THE SANDY ENVIRONMENT OF THE SURFZONE AND INLET AREAS.

FIGURED IN: NAUTILUS, VOL. 57(3), P. 97, PL. 9, FIGS. 1, 2

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: GALVESTON, FREEPORT, MATAGORDA, PORT ARANSAS, PORT ISABEL

SOLARIORBIS MOOREANA VANATTA 1904. BOTH S. INFRACARINATA AND S. BLAKEI ARE ABSENT IN OFFSHORE WATERS AND ARE APPARENTLY REPLACED ALONG THE TEXAS COAST BY S. MOOREANA AND S. TERMINALIS. THE LATTER IS SO FAR NOT KNOWN FROM BEACHDRIFT, BUT S. MOOREANA HAS BEEN COLLECTED SEVERAL TIMES, ALTHOUGH IT MUST BE CONSIDERED QUITE UNCOMMON.

FIGURED IN: THESIS DR. D. R. MOORE

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: SABINE BEACH, GALVESTON, PORT ARANSAS, PORT ISABEL.

TEINOSTOMA BISCAYNENSE PILSBRY AND MCGINTY 1945. THIS VERY CHARACTERISTIC, SMALL VITRINELLID IS ONE OF THE MOST ABUNDANT ON THE TEXAS COAST. IN MATURE SPECIMENS THE LAST WHORL ENVELOPS THE PREVIOUS ONES AND THE UMBILICUS IS COMPLETELY FILLED BY A CALLUS. WE SUSPECT THAT IT PREFERS THE ECOLOGY OF THE SURF ZONE AND INLET AREAS. WE HAVE SEEN VERY FRESH, BUT NOT LIVE MATERIAL.

FIGURED IN: NAUTILUS, VOL. 59, PP. 1-13; PL. 1, FIG. 4

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: IN DRIFT ALL ALONG THE TEXAS GULF BEACHES.

IN SEVERAL PUBLICATIONS REFERENCE IS MADE TO THE OCCURRENCE OF EITHER RISSOINA BREYEREA MONTAGU OR RISSOINA CHESNELI MICHAUD IN THE FAUNA OF TEXAS. IN HIS CHECKLIST OF THE MARINE MOLLUSCA OF TEXAS, PULLEY MAKES THE NOTATION: "SOME UNIDENTIFIED RISSOINA FROM PORT ARANSAS MAY BELONG TO THIS SPECIES, BUT THEY APPEAR TO BE MORE CLOSELY ALLIED TO RISSOINA BREYEREA MONTAGU". LATER ALSO PARKER HAS MENTIONED THE SAME SPECIES UNDER THE NAME RISSOINA CHESNELI FROM THE COASTAL BAY SYSTEM AROUND ROCKPORT, TEXAS. AT GALVESTON THE SPECIES IS EXTREMELY RARE, BUT SHELLS OF THIS PARTICULAR SPECIES APPEAR IN QUANTITY ON THE TEXAS COAST IN MATAGORDA BAY AND BECOME MORE COMMON AROUND PORT ARANSAS AND FURTHER SOUTH AT PORT ISABEL. LIVE MATERIAL HAS, AS FAR AS I KNOW, NOT YET BEEN COLLECTED IN TEXAS. THE FRESHEST MATERIAL IN MY OWN COLLECTION WAS OBTAINED AT PALACIOS ON MATAGORDA BAY, (SEE TEX. CONCH. VOL. 4, P.24). THE UNCERTAINTY ABOUT THE NAME OF THIS SHELL INDICATES THAT IT NEITHER FITS R. BREYEREA NOR R. CHESNELI VERY WELL.

SOME TIME AGO DR. D. R. MOORE MENTIONED TO ME THAT HE HAD COME TO THE CONCLUSION FROM A STUDY OF THE TYPE SPECIMENS THAT R. CATESBYANA IS SPECIFICALLY DIFFERENT FROM BOTH R. CHESNELI AND R. BREYEREA. I AM MOST GRATEFUL TO HIM FOR PERMITTING ME TO PUBLISH THIS CONCLUSION HERE BEFORE HE COULD DO SO HIMSELF. IN THE 1950 PAPER OF PHOTOGRAPHS OF THE TYPE SPECIMENS OF C. B. ADAMS



(CONTINUED ON NEXT PAGE)

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BY CLENCH AND TURNER IT IS CLEARLY SEEN THAT R. SCALARELLA, WHICH IS SYNONYMOUS WITH R. CATESBYANA IS DIFFERENT AND FROM THESE PHOTOGRAPHS IT IS OBVIOUS THAT OUR TEXAS SPECIES IS IDENTICAL WITH R. CATESBYANA. THE PHOTOGRAPHS MADE BY MR. C. DEXTER OF SOME SHELLS COLLECTED DEAD FROM BEACHDRIFT AT PALACIOS SHOW A SHELL WHICH IS CLEARLY QUITE SIMILAR TO THE PHOTOGRAPH OF R. SCALARELLA C. B. ADAMS IN THE CLENCH AND TURNER PAPER. IN TEXAS AT LEAST THIS SPECIES MUST BE A SHALLOW WATER OR BAY INHABITANT BECAUSE HARDLY ANY MATERIAL HAS BEEN COLLECTED IN OFFSHORE WATERS. IN THE COLLECTION FOR THE MUSEUM OF NATURAL SCIENCE ONLY TWO LOTS OF THIS SPECIES ARE PRESENT, DREDGED OFFSHORE IN THE GALVESTON-FREEPORT AREA. BOTH ARE MADE UP OUT OF A FEW OLD AND WORN SHELLS. WHETHER THESE SPECIMENS ACTUALLY LIVED IN THE OPEN GULF OR WERE OBTAINED FROM REWORKED BAY MATERIAL NOW COVERED BY THE SEA IS IMPOSSIBLE TO ANSWER. IT IS PROBABLE THAT MOST, IF NOT ALL, REFERENCES TO R. BREYEREA OR R. CHESNELI FOR THE TEXAS FAUNA PERTAIN TO R. CATESBYANA.

THESE REFERENCES ARE:

- NO DATE (ABOUT 1939), PARKS, H. B., HANDBOOK ON SHELLS, PORT ARANSAS, TEXAS, HARBOUR ISLAND CAUSEWAY CO., 17 P., ILLUSTRATED.  
1952 PULLEY, T., TEX. JOURN. SCI., VOL. 4 (2), P. 167-199.  
1956 PARKER, R. H. AND CURRAY, J. R., BULL. AM. ASS. PETR. GEOL., VOL. 40, P. 2428-2439.  
1959 PARKER, R. H., BULL. AM. ASS. PETR. GEOL., VOL. 43, P. 2100-2166.  
1960 RICE, W. H., A PRELIMINARY CHECKLIST OF THE MOLLUSCA OF TEXAS. INST. MAR. SCI., PORT ARANSAS.

THE FOLLOWING SOURCES CONTAIN SOME INFORMATION ABOUT THE SPECIES:

- 1845 RISSOINA SCALARELLA C. B. ADAMS, PROC. BOST. SOC. NAT. HIST., 2, P. 6.  
1842 RISSOINA CATESBYANA ORBIGNY, MOLL. CUBA., 2, P. 24, PL. 2, FIG. 1, 3.  
1949 ID., DESJARDIN, JOURN. CONCHYL. Vo. 89. P. 202.  
1950 RISSOINA SCALARELLA C. B. ADAMS, CLENCH AND TURNER, OCC. PAP. MOLL., VOL. 1 (15), P. 339, PL. 33, FIG. 3.

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#### CUTTLEBONES AND MACTRIDS

IN THE VELIGER FOR JULY 1969 DR. H. W. HARRY HAS TWO PAPERS. IN ONE HE DISCUSSES THE OCCURRENCE OF SEPIA SHIELDS ON THE BEACH AT GALVESTON AND IN THE OTHER TOGETHER WITH S. F. SNIDER THE ANATOMY AND SHELLS OF TWO COMMON TEXAS SPECIES WHOSE ANATOMY SO FAR HAD NOT BEEN STUDIED ADEQUATELY: RAETA PLICATELLA AND ANATINA ANATINA. THE READER WILL NOTE HERE ANOTHER CHANGE OF NAMES: LABIOSA PLICATELLA AND LABIOSA LINEATA WERE THE FORMER NAMES OF THESE SPECIES WHOSE DEAD SHELLS ARE NOT UNCOMMON ON THE TEXAS BEACH BUT WHICH ARE RARELY FOUND ALIVE IN BEACHDRIFT, ESPECIALLY LABIOSA LINEATA.

IN MAY, 1969 I PARTICIPATED IN THE RADIATION BIOLOGY SYMPOSIUM HELD AT RICHLAND, WASH. ENROUTE HOME, I MANAGED A WEEKEND AT SEATTLE. ONE OF MY FIRST STOPS THERE WAS THE UNIVERSITY OF WASHINGTON WHERE I LOOKED UP DR. ED HELD. DR. HELD IS IN CHARGE OF THE SCIENTIFIC TEAM THAT PERIODICALLY MONITORS THE ENVIRONMENTAL RADIATION IN THE MARSHALL ISLANDS. OUR PATHS HAD CROSSED OFTEN OUT THERE IN THE SOUTH PACIFIC. WE HAD EVEN BEEN SHIPMATES ON SOME MEMORABLE TRIPS NEGOTIATING THE WATERS AMONG THE ATOLLS ABOARD THE ROUGH-RIDING NAVY LSTs. DR. HELD IS A MARINE BIOLOGIST SO WE HAVE HAD A NUMBER OF BULL SESSIONS ON THINGS MOLLUSCAN UNDER THE SOUTHERN CROSS.

THROUGH DR. HELD I OBTAINED THE NAME OF MRS. THOMAS MARSHALL. I TELEPHONED. ALTHOUGH I WAS A TOTAL STRANGER, MRS. MARSHALL TOLD ME TO COME OVER. WE SPENT SEVERAL ENJOYABLE HOURS LOOKING OVER HER EXTENSIVE COLLECTION. I WAS AMAZED AT THE RICH VARIETY OF SPECIES MRS. MARSHALL HAD COLLECTED FROM THE PUGET SOUND AND PACIFIC NORTHWEST AREAS. THE CHITONS WERE MOST IMPRESSIVE. I WAS ABLE TO VIEW IN HER DRAWERS A NUMBER OF RARE DEEP-WATER BUCCINIDAE SPECIMENS.

I ALSO MANAGED TO VISIT TOM RICE AT POULSBO. HERE I SPENT ANOTHER COUPLE OF HOURS LOOKING AT PACIFIC NORTHWEST SHELLS. SOMEWHERE I HAD READ THAT DENTALIUM PRETIOSUM SHELLS WERE ABUNDANT IN THIS REGION, AND THAT THE INDIANS USED THEM WIDELY FOR ORNAMENTS AND MONEY. FOR YEARS I HAD TRIED TO OBTAIN, BY TRADE OR PURCHASE, A SPECIMEN OF IT. TOM VERIFIED MY SUSPICIONS. THIS TUSK SHELL IS NOT COMMON - IT IS DOWNRIGHT UNCOMMON AND HAS TO BE DREDGED. BUT I DID COME AWAY WITH A SPECIMEN OF IT (FROM TOM) AS WELL AS A SPECIMEN OF DENTALIUM DALLI.

FOR THE PAST FEW YEARS I HAVE BEEN LOOKING FOR A COPY OF A BOOK BY IDA S. OLDROYD ENTITLED MARINE SHELLS OF PUGET SOUND AND VICINITY (1924). I ASKED TOM ABOUT THIS BOOK. I RECEIVED THE REASSURING INFORMATION THAT PRACTICALLY ALL OF THE SPECIES LISTED IN THIS BOOK ARE ALSO INCLUDED IN THE FOUR-VOLUME SET BY THE SAME AUTHOR, THE MARINE SHELLS OF THE WEST COAST OF NORTH AMERICA (1924-1927).

AS I WAS LEAVING, TOM GAVE ME A BOOKLET WRITTEN AND PUBLISHED BY HIM. THIS WAS ENTITLED A CHECKLIST OF THE MARINE GASTROPODS FROM THE PUGET SOUND REGION (FROM THE MOUTH OF THE COLUMBIA RIVER TO THE NORTHERN TIP OF VANCOUVER ISLAND). THIS IS A 169-PAGE MIMEOGRAPHED ENDEAVOR AND TABULATED 519 SPECIES. FOR EACH SPECIES, RECENT REFERENCES ARE GIVEN AS WELL AS RANGES, TYPE LOCALITY AND COLLECTING DATA. OF PRACTICAL INTEREST TO THE COLLECTOR WHO PLANS ANY COLLECTING TRIPS TO THIS REGION ARE THE FOUR MAPS ON WHICH COLLECTING SITES ARE INDICATED - 213 OF THEM!

TWO INSTRUCTIVE BOOKLETS ON THE COMMON SHELLS OF THE PACIFIC NORTHWEST HAVE BEEN PUT OUT BY THE BRITISH COLUMBIA PROVINCIAL MUSEUM. ONE IS BY LELA M. GRIFFITH ENTITLED INTERTIDAL UNIVALVES OF BRITISH COLUMBIA. THE OTHER IS WRITTEN BY D. B. QUAYLE ENTITLED THE INTERTIDAL BIVALVES OF BRITISH COLUMBIA. THE LATTER BOOK MAY BE OUT OF PRINT.

PRESENT PARTICIPLES MAY BE USED AS ADJECTIVES, INDEPENDENT OF GENDER:

- FULGURANS (FULGURARE - TO MAKE LIGHTNING)
- FULVESCENS (FULVUS - YELLOW, TO BECOME YELLOW)
- CANDENS (CANDERE - TO SHINE)
- NIGRICANS (NIGRESCERE - TO BECOME BECOME BLACK)
- CAERULESCENS (BECOMING BLUE; CAERULEUS - BLUE)
- FUSCESCENS (BECOMING DARK BROWN; FUSCUS - DARK BROWN)
- DISTANS (DIFFERENT; FROM DISTARE, TO STAND APART)
- FLAVESCENS (BECOMING YELLOW)

IT IS APPARENT FROM LOOKING AT MANY TRIVIAL NAMES THAT CERTAIN CONSTRUCTIONS OCCUR OVER AND OVER AGAIN. 1) QUITE COMMON ARE THOSE WHICH INDICATE LOCALITY: FLORIDANUS, FLORIDENSIS, ATLANTICUS, PACIFICUS, AMERICANUS, ARCTICUS, CARI-BAEUS, VIRGINICUS AND VIRGINENSIS, BARBADENSIS, YUCATECANUS, ETC. FORMS LIKE TEXANUS AND TEXASIANUS CLEARLY SHOW THE FREEDOM AUTHORS HAVE IN LATINIZATION.

2) "PATRONYMIC" ADJECTIVES, GIVEN IN HONOR OF A PERSON: CANDEANUS (AFTER CANDE), DALLIANUS (AFTER DALL) ETC.

3) CONSTRUCTIONS WITH PRAEFICES, OF WHICH THERE ARE MANY:

- A) PER-, INDICATING EXCESS OF QUALITY  
PERMAGNUS (VERY LARGE); PERSPINOSUS (WITH MANY SPINES), PERSIMILIS (VERY SIMILAR), PERLONGUS (PERY LONG), PERMOLLIS (VERY WEAK), ETC.
- B) MULTI- (MANY) (GR. POLY) F.I. MULTICARINATUS (WITH MANY KEELS)
- C) SUB- SUBOVATUS (ALMOST OVAL)

THERE ARE MANY MORE WHICH WE DO NOT NEED TO ENUMERATE.

4) TRIVIAL NAMES FORMED WITH A NUMBER:

- UNILIRATUS, MONOCINGULATUS (1)
- BIDENTATUS, BIPLICATUS (GREEK COMPOSITE WITH DI-) (2)
- TRILINEATUS, TERVARICOSUS (3)
- QUADRIDENTATUS (GR. TETRA) (4)
- PENTAGONUS (LAT. QUINQUE) (5)
- HEXAGONUS (6)
- SEPTEMSTRIATUS (7)
- OCTOPUS, OCTORADIATUS (8)
- NOVEMCOSTATUS (9)
- DECEMCOSTATUS (10)

5) ANOTHER DEVICE IS TO USE COMPARATIVE AND SUPERLATIVE CONSTRUCTION:

- ELATIOR (HIGHER), MINOR (SMALLER), MAJOR (LARGER), SOLIDISSIMUS, GRANOSIS-SIMUS, ELEGANTISSIMUS.

6) ADJECTIVES FORMED AS DIMINUTIVES OF OTHERS:

- NODULOSUS (NODOSUS - KNOTTY)
- TUMIDULUS (TUMIDUS - FAT)
- TENELLUS (TENER-THIN)
- GRATULUS (GRATUS - LOVELY)
- CERINELLUS (CERINEUS - WAXEN)
- ASPERULUS (ASPER - UNEVEN)

7) ADJECTIVES ENDING IN -FORMIS (FORMA - SHAPE)

- TAGELIFORMIS (SHAPED LIKE A TAGELUS)
- CUNEIFORMIS (SHAPED LIKE A WEDGE)
- PHOLADIFORMIS (SHAPED LIKE A PHOLAS) ETC.

AND THE EQUIVALENT GREEK CONSTRUCTION ON -OIDES (FROM THE GREEK INDICATING SIMILARITY IN APPEARANCE):

- TELLINOIDES, NUCULOIDES, PUPOIDES, ETC.

(CONTINUED FROM PREVIOUS PAGE)

IN CONCLUSION, WE MAY TOUCH UPON THE QUESTION OF COMMON NAMES. IN ITSELF THERE IS ABSOLUTELY NO OBJECTION TO A COMMON I. E. ENGLISH NAME FOR A SHELL. MANY COLLECTORS SPEAK ABOUT SUNDIALS, COWRIES, WENTLETRAPS, ETC., NAMES WHICH ARE SIGNIFICANT AND USEFUL. IT IS HOWEVER A DIFFERENT MATTER IF ONE WANTS TO INDICATE THE PRECISE SPECIES OF SHELL BY SUCH A CONSTRUCTION. FOR ONLY A FEW A HAPPY CONSTRUCTION CAN BE FOUND AND A TRANSLATION OF THE SCIENTIFIC NAME USUALLY LEADS TO STILTED RESULTS, AND IN SOME CASES TO UNDESIRABLE NAMES. *CRASSOSTREA VIRGINICA* WILL, IN MY MIND, FOREVER BE THE "FAT VIRGIN", A NAME WHICH DOES LITTLE JUSTICE TO THIS "FETCHING PIECE" OF NATURE. WHILE *THAIS HAEMOSTOMA* CAN BE RENDERED AS "THE COURTISAN WITH THE BLOOD RED MOUTH" A NAME WHICH WOULD GENERATE MORE INTEREST THAN THIS RATHER COARSELY SHAPED SHELL DESERVES. HOW WOULD ONE TRANSLATE *TEINOSTOMA LEREMA*? THE GENERIC NAME MEANS "TIGHTLY BOUND MOUTH" AND LEREMA IS DERIVED FROM THE GREEK WORD *λεπτομα*, WHICH PILSBRY STATES TO BE MEANING A "TRIFLE". UNFORTUNATELY IT IS A TRIFLE IN THE SENSE OF A TRIFLING COMMUNICATION (RELATED TO THE LATIN LAMENTARE - TO LAMENT) AND HAS THE MEANING: NONSENSE, BRAGGING, BUNKUM, BALONEY. COMBINED WITH THE GENERIC NAME THIS LEADS TO A CONTRADICTION IN TERMINIS. LET ME THEN CONCLUDE BY HOPING THAT THIS DISCUSSION HAS NOT BEEN A "DISCUSSIO LEREMA"!

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#### A VISIT TO TIMBALIER ISLAND AND ISLES DERNIÈRES

BY H. ODÉ

OF THE LARGE STRETCH OF COASTLINE BETWEEN THE MISSISSIPPI AND THE RIO GRANDE MANY MILES ARE HARDLY ACCESSIBLE TO THE GENERAL PUBLIC AND FAUNISTIC DATA FOR THESE PARTS OF THE COAST ARE EXTREMELY SCARCE. DURING LAST NOVEMBER A GROUP OF SEVERAL MEMBERS OF THE HOUSTON CONCHOLOGY SOCIETY HAD THE OPPORTUNITY TO VISIT ONE OF THESE RARELY VISITED LOCALITIES: TIMBALIER AND "LAST" ISLAND, BEHIND WHICH TIMBALIER BAY EXTENDS. BOTH ISLANDS ARE LOCATED AT THE LATITUDE OF FREEPORT, TEXAS. ALTHOUGH THE MOLLUSK FAUNA OF THESE ISLANDS DID NOT LIVE UP TO ITS ADVANCED BILLING AS THE "RICHEST SHELL BEACH IN THE UNITED STATES" IT STILL WILL BE WORTHWHILE TO PUT SOME OF MY OBSERVATIONS ON RECORD. THE ITINERARY INCLUDED AN OVERNIGHT STOP ON THE FACILITIES OF THE TEXAS COMPANY AT PELTO LAKE, -A MODERN CITY ON PILINGS IN PELTO LAKE- LOCATED ON TOP OF THE SIMILARLY NAMED SALT DOME. TRANSPORT WAS PROVIDED BY THE HIGHLY LUXURIOUS AND SPEEDY CABIN CRUISER OF THE L. L. & E. CO., AND OUR LIAISON WAS PROF. MALONE FROM NICHOLS STATE COLLEGE AT THIBODEAUX, LA., WHOSE EFFORTS RESULTED IN A MOST ENJOYABLE TRIP.

ON A SATURDAY MORNING THE PARTY BOARDED AT COCODRIE IN THE TIMBALIER DELTA AREA SOUTH OF HOUMA AND PROCEEDED THROUGH THE CANALS AND BAYS TO TIMBALIER ISLAND. THIS TRIP BETWEEN THE COUNTLESS PLATFORMS, PIPELINES AND OTHER ABOVE WATER STRUCTURES ALL BUILT ON PILINGS IS QUITE REMARKABLE. FORTUNATELY THE WEATHER COULD NOT HAVE BEEN BETTER. AT TIMBALIER ISLAND THREE COLLECTORS WERE PUT ON LAND TO SAMPLE THE BEACHES AND MUDFLATS. THE REMAINDER OF THE PARTY WENT ON TO THE INLET AREAS BETWEEN THE ISLANDS TO DREDGE AND LATER WENT ON TO SHIP SHOAL, AN OFFSHORE BANK WITH AN INTERESTING FAUNA.

TO BE CONTINUED NEXT MONTH.....

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# CONCHOLOGIST

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## NOTES & NEWS

### NEXT MEETING

MRS. MILDRED TATE OF LAKE JACKSON WILL PRESENT THE PROGRAM FOR THE MEETING ON WEDNESDAY, SEPTEMBER 24, AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE IN HERMANN PARK. SHE WILL BRING A COLLECTION OF SHELLS FROM OFFSHORE TEXAS AND SHARE WITH US HER KNOWLEDGE OF WHAT IS AVAILABLE IN THE DEEPER WATERS. MRS. TATE IS CURATOR OF THE BRAZOSPORT MUSEUM OF NATURAL SCIENCE AND A MEMBER OF OUR CLUB. HER COLLECTION OF TEXAS SHELLS IS ONE OF THE BEST AROUND.

### REPORT AUGUST MEETING

AFTER READING OF THE MINUTES THE REORGAINZATION OF THE LIBRARY WAS DISCUSSED. AS SOON AS THE MUSEUM IS FINISHED OUR LIBRARY WILL BE HOUSED THERE. CONNIE BOONE SHOWED A LIVE COLLECTED SPECIMEN OF MACOMA PULLEYI, A NEWLY DESCRIBED BIVALVE LIVING, ON THE TEXAS-LOUISIANA COAST. SHE ALSO CIRCULATED A REPRINT FROM THE NAUTILUS IN WHICH DR. MOORE DESCRIBES CAECUM CONDYLUM, THE PARATYPE OF WHICH WAS COLLECTED IN THE MOLLUSK SURVEY.

TOM PULLEY REVIEWED THE HISTORY OF HOUSTON'S NEWEST AND FINEST BUILDING, THE MUSEUM OF NATURAL SCIENCE. IT STARTED AS A BIRDHOUSE IN THE ZOO AND HAS NOW GROWN INTO A MULTIMILLION DOLLAR BUILDING. DR. PULLEY TOOK US ON A TOUR THROUGH THE MUSEUM AND EXPLAINED THE LAYOUT. THE MUSEUM WILL HOUSE THE FINEST MALACOLOGICAL LIBRARY IN THE SOUTH.

### SHOW HOUSTON UNDERWATER CLUB

SATURDAY, OCTOBER 4TH, THE HOUSTON UNDERWATER CLUB, HAS ORGANIZED A SHOWING OF AWARD WINNING UNDERWATER PHOTOGRAPHS IN THE MUSIC HALL, 810 BAGBY. ALSO WILL BE SHOWN AWARD WINNING UNDERWATER MOVIES AND FAMOUS DOCUMENTARIES BY JACQUES COUSTEAU. TICKETS ARE \$2.00 AND ARE AVAILABLE AT FOLEY'S AND J. RICH SPORTS LTD. IN THE VILLAGE.

ACCORDING TO OUR INFORMATION THE HOUSTON CHRONICLE WILL PUBLISH IN ITS SUNDAY EDITION, THE TEXAS MAGAZINE, OF SEPTEMBER 21 A PHOTOGRAPHIC REPORT OF THE DIVING TRIP TO STETSON BANK. DURING THIS TRIP MANY HIGHLY INTERESTING ADDITIONS TO THE MOLLUSK FAUNA OF THE TEXAS OFFSHORE WATERS WERE DISCOVERED. A REPORT WILL APPEAR SOON IN THE TEXAS CONCHOLOGIST.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY VITRINELLIDAE (CONTINUED)

TEINOSTOMA LEREMA PILSBRY AND MCGINTY 1945. A SOMEWHAT SMALLER AND FLATTER SPECIES THAN T. BISCAYNENSE, WHICH IS ALSO MORE LIMITED IN ITS DISTRIBUTION. FROM GALVESTON ONLY A SINGLE SPECIMEN (COLL. ODÉ), BUT CONSIDERABLY MORE COMMON AT PORT ARANSAS AND PORT ISABEL.  
FIGURED IN: NAUTILUS VOL. 59, PL. 2, FIGS. 1, 1A  
PREVIOUS REFERENCES: THESIS DR. D. R. MOORE  
LOCALITIES: GALVESTON, PORT ARANSAS, PORT ISABEL

TEINOSTOMA GONIOGYRUS PILSBRY AND MCGINTY 1945. IN DREDGE SAMPLES OBTAINED 30 MILES OFF THE COAST AT GALVESTON THIS SPECIES IS NOT RARE, BUT FROM THE BEACH, ONLY A SINGLE WORN SPECIMEN IS KNOWN FROM GALVESTON WEST BEACH. (COLL. ODÉ). IN A PRELIMINARY LIST ALSO DR. HARRY HAS MENTIONED THIS SPECIES FOR GALVESTON.  
FIGURED IN: NAUTILUS, VOL. 59 (1), PL. 1, FIG. 8  
PREVIOUS REFERENCES: LIST DR. HARRY  
LOCALITIES: GALVESTON

TEINOSTOMA PARVICALLUS PILSBRY AND MCGINTY 1945. THIS IS A RATHER RARE SPECIES ON THE TEXAS BEACH. MOORE STATES THAT THIS SPECIES, WHICH IS QUITE DIFFERENT IN APPEARANCE FROM THE TWO PREVIOUS ONES, IS PERHAPS NOT A VITRINELLID. OFFSHORE IT IS NOT AN UNCOMMON SHELL.  
FIGURED IN: NAUTILUS, VOL. 59 (1), PL. 2, FIG. 2.  
PREVIOUS REFERENCES: THESIS DR. D. R. MOORE  
LOCALITIES: GALVESTON, PORT ARANSAS, PORT ISABEL.

PARVITURBOIDES INTERRUPTUS C. B. ADAMS 1850. THIS SPECIES, THE MOST GLOBOSE OF ALL TEXAS VITRINELLIDS, IS COMMON IN OFFSHORE WATERS OFF GALVESTON AND FREEPORT, BUT HAS BEEN FOUND IN BEACHDRIFT ONLY AT PORT ARANSAS AND FURTHER SOUTHWARD TO PORT ISABEL. ONCE A GREAT NUMBER OF LIVE SPECIMENS WAS FOUND ALIVE ON A DECAYING LOG DREDGED IN SHALLOW WATER. LIVE SPECIMENS ARE ALSO KNOWN FROM INLET AREAS AROUND PORT ARANSAS, WHERE THEY WERE COLLECTED ON ALGAE COVERED ROCKS.  
FIGURED IN: OCC. PAP. MOLL., VOL. 1 (15), PL. 35, FIG. 4, 5.  
PREVIOUS REFERENCES: THESIS DR. D. R. MOORE  
LOCALITIES: PORT ARANSAS, PADRE ISLAND, PORT ISABEL.



ANTICLIMAX PILSBRYI MCGINTY 1945. THIS SOMEWHAT UNUSUAL SPECIES IS DISTRIBUTED ALONG THE ENTIRE TEXAS COAST. IT CAN BE RECOGNIZED IMMEDIATELY BY ITS DOME-SHAPED SPIRE AND ELEGANT ORNAMENTATION. NO LIVE MATERIAL IS KNOWN FROM TEXAS, BUT SOME FRESH MATERIAL HAS BEEN COLLECTED AT GALVESTON AND PORT ISABEL. THE SPECIES IS RARE IN OFFSHORE DREDGE MATERIAL. FIGURED IN: NAUTILUS, VOL. 59 (1), PL. 1, FIG. 5; IBID. VOL. 59 (3), PL. 8, FIGS. 1, 1A, 1B

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: GALVESTON, MATAGORDA, PORT ARANSAS, PORT ISABEL.

VITRINELLA FLORIDANA PILSBRY AND MCGINTY 1946. IN THE PORT ARANSAS AREA AND FURTHER SOUTH THIS IS PROBABLY THE MOST COMMON VITRINELLID. LIVE MATERIAL HAS BEEN COLLECTED HERE. IN THE GALVESTON AREA THE SPECIES IS LESS COMMON, BUT DEAD SHELLS CAN BE COLLECTED REGULARLY IN BEACHDRIFT AT SAN LUIS PASS. AT A FIRST GLANCE THESE SMALL SHELLS COULD BE MISTAKEN FOR MINUTE LANDSNAILS, BUT THEIR INITIAL WHORLS ARE MUCH SMALLER THAN THOSE OF LAND GASTROPODS OF COMPARABLE SIZE. THIS IS PROBABLY VITRINELLA SPEC. MENTIONED IN REF. 15 AND 17.

FIGURED IN: NAUTILUS, VOL. 60 (1), PL. 2, FIGS. 4, 4A.

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: IN BEACHDRIFT ALONG THE ENTIRE TEXAS COAST.

VITRINELLA TEXANA MOORE 1965. THIS INTERESTING SPECIES WAS FIRST DESCRIBED FROM PORT ARANSAS. IT IS A RATHER RARE BEACHSHELL, WHICH SO FAR HAS ONLY BEEN FOUND DEAD IN BEACHDRIFT. FOR A VITRINELLA IT IS UNUSUAL IN HAVING A SYSTEM OF RADIAL WAVELETS ON THE BASE OF THE SHELL. IN TEXAS IT IS KNOWN FROM PORT ARANSAS AND PORT ISABEL, BUT IT HAS SINCE ALSO BEEN COLLECTED IN FLORIDA. NO MATERIAL HAS SO FAR BEEN OBTAINED IN OFFSHORE DREDGE SAMPLES.

FIGURED IN: NAUTILUS, VOL. 78 (3), PL. 7, FIGS. 4-6.

PREVIOUS REFERENCES: IBID; THESIS DR. D. R. MOORE

LOCALITIES: PORT ARANSAS, PORT ISABEL

VITRINELLA HELICOIDEA C. B. ADAMS 1850. AN UNUSUAL BEACH SPECIES, MUCH RARER THAN V. FLORIDANA. AT GALVESTON, A FEW DEAD SPECIMENS HAVE BEEN COLLECTED BY SOME COLLECTORS AND SEVERAL MORE ARE KNOWN FROM THE BEACHES AT PORT ARANSAS AND PORT ISABEL. IT DIFFERS FROM V. FLORIDANA MAINLY IN THE STRUCTURE OF THE UMBILICUS.

FIGURED IN: OCC. PAP. MOLL., VOL. 1 (15), PL. 35, FIG. 1.

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: GALVESTON, PORT ARANSAS

PLEUROMALAXIS BALESII PILSBRY AND MCGINTY 1945. ONLY A VERY FEW SPECIMENS OF THIS SMALL SPECIES SO FAR ARE KNOWN FROM TEXAS. MRS. W. RICE OBTAINED ONE SPECIMEN FROM DRIFT AT PORT ARANSAS AND ANOTHER, SLIGHTLY DEFECTIVE ONE, WAS DREDGED OFFSHORE GALVESTON.

FIGURED IN: NAUTILUS, VOL. 59 (1), PL. 2, FIG. 8

PREVIOUS REFERENCES: THESIS DR. D. R. MOORE

LOCALITIES: PORT ARANSAS

AS USUAL, OUR TRIP TO THE MARSHALL ISLANDS THIS YEAR HAD ITS EVENTFUL MOMENTS. FOR EXAMPLE, WE EXPECTED TO TRAVEL THE DISTANCE FROM RONGELAP ATOLL TO UTIRIK ATOLL IN 15 TO 18 HOURS, EVEN IN OUR SLOW BOAT. WE LEFT RONGELAP IN THE EARLY AFTERNOON, ANTICIPATING ARRIVAL AT UTIRIK EARLY THE NEXT MORNING. AT THE END OF THAT TIME, HOWEVER, UTIRIK WAS NOWHERE IN SIGHT. THE ATOLL WAS LOST! WE SPENT THE NEXT 24 HOURS ZIGZAGGING ACROSS THE FRIGHTENINGLY EXPANSIVE SOUTH PACIFIC LOOKING FOR THE LOST ATOLL. THE TENSENESS OVER OUR PREDICAMENT WAS NOT MATERIALLY ALLEVIATED BY MY USUAL SUSCEPTIBILITY TO MAL DE MER. (I AM HAPPY TO REPORT THAT EVENTUALLY WE DID LOCATE UTIRIK!)

UTIRIK IS A SMALL ATOLL AND THE PEOPLE LIVE MOSTLY ON ONE ISLAND. THE ATOLL IS JUSTLY FAMOUS AS THE HOME OF THE "CAT'S EYES" - OPERCULA OF TURBO PETHOLATUS. SO MUCH IS THE CAT'S EYE A NEGOTIABLE COMMODITY IN THE MARSHALL ISLANDS THAT I WOULD SWEAR THEIR COLLECTION IS A FULL TIME ACTIVITY ON THIS ATOLL.

TWO THINGS IMPRESSED ME ABOUT THE CAT'S EYE. FIRST, COUNTLESS THOUSANDS OF THESE OPERCULA MUST HAVE BEEN COLLECTED AND EXPORTED OVER THE YEARS. ALL OF THE INHABITANTS OF THE ATOLL SEEM TO HAVE UNLIMITED SUPPLIES IN THEIR HOMES. ABUNDANT AS THESE MOLLUSKS ARE, I WONDERED IF EXTINCTION OF THE SPECIES THROUGH OVER-COLLECTING MAY NOT BE A POTENTIAL DANGER. AFTER ALL, THE PASSENGER PIGEON AND THE BUFFALO ABOUNDED IN COUNTLESS NUMBERS, TOO. I LIVED THROUGH THE DECIMATION OF THE PISMO CLAMS IN CALIFORNIA. THE SECOND THING THAT BOTHERED ME WAS THE RUTHLESSNESS WITH WHICH THE COLLECTION WAS BEING PURSUED. THE MOLLUSKS WERE GATHERED ON THE LAGOON REEFS. THE OPERCULA WERE THEN REMOVED FROM THE LIVE ANIMAL AND THE SHELL WITH THE ANIMAL STILL IN IT DISCARDED. I DO NOT KNOW HOW VULNERABLE AN OPERCULUM-LESS CREATURE MIGHT BE. MOST OF THE SHELLS HOWEVER WERE BROUGHT HOME APPARENTLY AND THE OPERCULA REMOVED ASHORE. ROTTING SHELLS IN QUANTITY DOTTED THE LAGOON BEACH. IT SEEMED A FRIGHTFUL WASTE SINCE THE MOLLUSKS ARE EDIBLE DELICACIES. IF COOKING WILL MAR THE OPERCULUM, THE ANIMAL CAN STILL BE COOKED AFTER THE OPERCULUM IS REMOVED. I EVEN WONDERED IF DRYING OR SMOKING WOULD NOT PRESERVE THE MEAT FOR LATER CONSUMPTION.

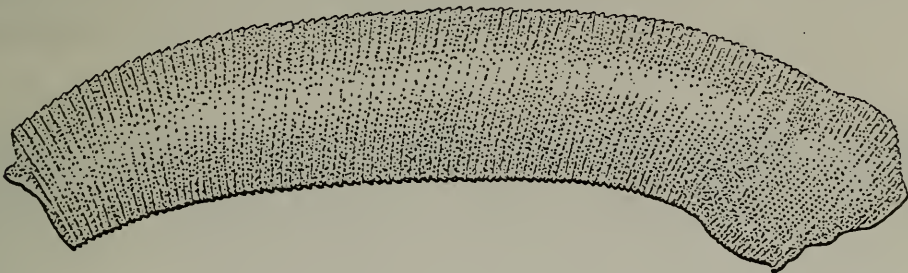
THERE WERE TWO GOLDEN COWRIES ON THE ISLAND. THE OWNERS KEPT THEM IN SEA WATER. THEY SPARKLED, NICE AND DESIRABLY, DURING INSPECTION. ERNIE LIBBY AND I TRIED TO COME HOME WITH AT LEAST ONE OF THEM. WE SPENT A GOOD DEAL OF TIME BARGAINING. WE ALMOST DID IT! BUT AT THE LAST MINUTE, EVEN AFTER SHAKING HANDS ON A DEAL, THE MARSHALLESE BACKED OUT. WE HAD AN UPHILL FIGHT ALL THE WAY. SOMEONE HAD TOLD THE MARSHALLESE THAT IF THEY TOOK THE COWRY TO KWAJALEIN, THEY COULD GET AT LEAST \$500 EACH FOR THEM. C'EST LA VIE!

PASSING THE VILLAGE CEMETERY ONE DAY, I CAME TO AN ABRUPT HALT WHEN I SAW SEASHELLS DECORATING A GRAVE. IT SEEMED MOST APPROPRIATE. TO MY CHAGRIN I LEARNED LATER THAT AN ENTERPRISING VILLAGER HAD MERELY USED THE ELEVATED CEMENT-COVERED GRAVE TO DRY HIS CLEANED SHELLS. ANYWAY HIS IRREVERENCE HAS BEEN PHOTOGRAPHICALLY DOCUMENTED AMONG MY SLIDES.

IN VOLUME 83 (1), P. 26-28, OF THE NAUTILUS DR. D. R. MOORE HAS DESCRIBED A NEW SPECIES OF THE GENUS CAECUM, CAECUM CONDYLUM, WHICH SO FAR IS ONLY KNOWN FROM THE LOCATIONS OF THE HOLOTYPE, PAYARDI ISLAND ON THE ATLANTIC COAST OF PANAMA AND OF THE PARATYPE, EAST FLOWER GARDEN OFF GALVESTON. THE PARATYPE WAS COLLECTED IN CORAL RUBBLE AND FINE DEBRIS OBTAINED BY DIVING AT A DEPTH OF ABOUT 60 FEET DURING A TRIP OF THE DESTROYER HAINSWORTH, REPORTED PREVIOUSLY IN THIS PUBLICATION (VOL. 6, P. 46-49).

THIS TRIP WAS PART OF OUR EFFORT TO OBTAIN FOR THE MUSEUM OF NATURAL SCIENCE IN HOUSTON A REPRESENTATIVE COLLECTION OF THE MOLLUSCAN FAUNA OF THE NORTHWEST GULF OF MEXICO. THE PAPER BY DR. MOORE PRESENTS A FIRST INTERESTING RESULT OF THIS EFFORT, WHICH WE HOPE WILL BE FOLLOWED BY MANY OTHERS WHEN THIS COLLECTION CAN BE WORKED OUT IN SYSTEMATIC DETAIL.

IT IS NOT NECESSARY TO REPEAT HERE THE DESCRIPTION OF THE SPECIES DESCRIBED BY DR. MOORE, BUT IT MIGHT BE INSTRUCTIVE TO REPRODUCE ON A LARGER SCALE THAN WAS DONE IN THE NAUTILUS THE FIGURE OF THE HOLOTYPE OF THIS UNUSUAL SPECIES WHICH MEASURES 2.40 M.M. IN LENGTH. APPARENTLY THIS SPECIES IS NOT ABUNDANT ON THE FLOWER GARDEN. AMONG THE SEVERAL MORE NUMEROUS REPRESENTATIVES OF THE GENUS AT THAT LOCATION SO FAR ONLY A SINGLE SPECIMEN WAS COLLECTED. AN OBVIOUS AREA WHERE IT MIGHT BE LOOKED FOR IS THE YUCATAN PLATFORM. THE FAUNA OF THE TEXAS CALCAREOUS REEFS PROBABLY HAS CLOSER AFFINITIES WITH THAT AREA THAN WITH FLORIDA



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#### COLLECTING NOTES

BY CONSTANCE BOONE

ALTHOUGH I HAVE COLLECTED AMYGDALUM POPYRIA CONRAD WASHED UP ON THE BAY BEACHES AT SOUTH PADRE ISLAND AND OCCASIONALLY FOUND VALVES IN OUR BAYS, I HAD NEVER FOUND THEM IN "NESTS" WHERE THEY ARE DESCRIBED AS LIVING. HAROLD GEIS DUG SOME AROUND THE REEDS IN GALVESTON BAY, AND MILDRED TATE DUG SOME AROUND REEDS AT FREEPORT. IN AUGUST AT ROCKPORT I FINALLY FOUND TWO LIVING ONES, EACH IN A NEST INSIDE OLD OYSTER VALVES, NOWHERE NEAR ANY REEDS OR GRASS. I HAPPENED TO BE LOOKING FOR CHITONS WHICH SEEM TO BE EXTINCT SINCE BUELAH.

IN THE AUGUST ISSUE OF TEXAS CONCHOLOGIST, CYCLOSTREMISCUS PENTAGONUS GABB WAS LABELLED AS A DWELLER OF THE SURFZONE AND AS BEING COMPLETELY ABSENT FROM OFFSHORE WATERS. THIS HAS NOT BEEN MY EXPERIENCE. ALTHOUGH I HAVE FOUND MANY DEAD SPECIMENS IN BEACHDRIFT FROM OUTER BEACHES AND BAYS, I ALSO HAVE PICKED ENOUGH FRESH SPECIMENS FROM OFFSHORE SAMPLES FROM 25 TO 30 FATHOMS TO FEEL THAT THIS SPECIES DOES ALSO OCCUR OFFSHORE.

CYCLOSTREMISCUS SUPPRESSUS DALL 1889.

THIS LITTLE VITRINELLID IS A CHARACTERISTIC COMPONENT OF THE TEXAS COASTAL BAYS. IT IS NOT UNCOMMON IN DRIFT NEAR THE PASSES OF GALVESTON BAY, BUT BECOMES MORE NUMEROUS IN DRIFT FURTHER TO THE SOUTHWEST. IT HAS BEEN FOUND IN MATA-GORDA BAY (PALACIOS AND INDIANOLA) AND DEAD SHELLS ARE COMMON IN THE ROCK-PORT-PORT ARANSAS AREA AND AT SOUTH PADRE ISLAND. LIVE MATERIAL HAS NOT BEEN COLLECTED YET, BUT FRESH DEAD SHELLS HAVE BEEN FOUND IN DRIFT AT GALVESTON AND PORT ARANSAS. THE PHOTOGRAPH BY MR. C. DEXTER OF SOME SPECIMENS COLLECTED AT PORT ARANSAS SHOWS THE CHARACTERISTIC SHARP PERIPHERAL KEEL OF THE SPECIES. IN OFFSHORE DREDGE MATERIAL THE SPECIES IS QUITE RARE AND IT IS POSSIBLE THAT THE FEW SPECIMENS OBTAINED IN SHALLOW WATER OFF GALVESTON ARE SUBFOSSIL. OFFSHORE THE SPECIES IS REPLACED BY CYCLOSTREMISCUS PENTAGONUS GABB 1873 (*C. TRILIX* BUSH 1885) IN SHALLOW WATER AND BY CYCLOSTREMISCUS JEANNAE PILSBRY AND MCGINTY 1946 IN DEEPER WATER.

PREVIOUS REFERENCES FOR TEXAS ARE:

- 1960 RICE, W. H., A PRELIMINARY CHECKLIST OF THE MOLLUSCA OF TEXAS. INST. MAR. SC., UNIV. TEX., PORT ARANSAS, 17 P.
- 1964 MOORE, D. R., THE FAMILY VITRINELLIDAE IN SOUTH FLORIDA AND THE GULF OF MEXICO, PH.D. THESIS, UNIV. MIAMI, FLA., 235 P.
- 1967 ODÉ, H., TEX. CONCHOLOGIST, VOL. 4, P. 24.
- 1967 HARRY, H. W., MARINE MOLLUSCA OF GALVESTON, TEXAS. TENTATIVE AND PRELIMINARY LIST. MAR. LAB., A. AND M. UNIV., GALVESTON, TEXAS.

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IT CAN BE STATED IMMEDIATELY THAT THE RESULTS OF THE MUDFLAT INVESTIGATIONS BOTH AT TIMBALIER ISLAND AND THE NEXT DAY AT ISLE DERNIÈRE WERE DISAPPOINTING. THE REASON FOR THIS WAS PARTLY THAT OUR BOAT COULD ONLY SET THE PARTY ON LAND AT A FEW SELECTED LOCALITIES WHERE THE CHANNELS WERE DEEP ENOUGH FOR THE BOAT. THESE WERE ARTIFICIAL CHANNELS WHOSE DEPTHS MADE IT IMPOSSIBLE TO WADE THROUGH THEM, SO THAT WITHOUT SPECIAL EQUIPMENT THE LARGE SANDY MUDFLATS ON THE BAY SIDE OF THE ISLAND COULD NOT BE REACHED. DIGGING IN THE BANKS OF THE ARTIFICIAL CHANNELS PRODUCED ONLY MODIOLUS DEMISSUS, A FEW MULINIA LATERALIS, WHILE ON THE BANKS LIVED LARGE NUMBERS OF LITTORINA IRRO-RATA. HOWEVER, IT IS CLEAR FROM THE BEACH DRIFT THAT A MUCH RICHER FAUNA MUST EXIST IN TIMBALIER BAY.

THE BEACHDRIFT ON THE OUTER GULF BEACH OF TIMBALIER ISLAND AND ISLE DERNIÈRE, THE LATTER BEING VISITED ON SUNDAY, WAS AT THE TIME OF OUR VISIT PERCEPTIBLY DIFFERENT. ALTHOUGH ON BOTH ISLANDS THE COMMON BAY SPECIES MADE UP MORE THAN 90% OF THE DRIFT, SOME TRUE OPEN GULF SPECIES WERE COLLECTED. FIRST I SHALL REVIEW THE FAUNA OF TIMBALIER ISLAND. AS FAR AS I KNOW TIMBALIER ISLAND MUST BE THE ONLY LOCATION IN THE NORTHWEST GULF OF MEXICO WHERE PITAR CORDATA IS NOT UNCOMMON IN DRIFT. ALL COLLECTED SPECIMENS, ABOUT 20, WERE OLD AND WORN. LOCALLY THIS SPECIES IS ABUNDANT IN THE OPEN GULF OF MEXICO AND IT MAY WASH ASHORE AT TIMBALIER ISLAND BECAUSE THIS ISLAND IS APPARENTLY SHIFTING WESTWARDS DUE TO CURRENT ACTION, UPROOTING SHELLS FROM DEEPER WATER NEAR BY. SOME OTHER OPEN GULF SPECIES NOTED WERE CHIONE CLENCHI, CALLOCARDIA TEXASIANA AND AMAEA MITCHELLI.

THE ABSENCE OF MANY COMMON BEACH SHELLS OF GALVESTON WAS MOST CONSPICUOUS, BUT WHETHER THIS IS NORMAL OR NOT CAN FROM A SINGLE VISIT NOT BE DECIDED. MISSING WERE ALL SMALL GASTROPODS, SUCH AS EPITONIUM, ANACHIS, OLIVELLA, TECTONATICA AND PYRAMIDELLIDS. ANADARA TRANSVERSA LIKEWISE WAS NOT COLLECTED AND AEQUIPECTEN IRRADIANS WAS LOOKED FOR IN VAIN. THE SURF FAUNA CONSISTED LARGE-LY OF:

<u>DOSINIA DISCUS</u>	<u>BUSYCON CONTRARIUM</u>
<u>ANADARA OVALIS</u>	<u>BUSYCON SPIRATUM</u>
<u>ANADARA BRASILIANA</u>	<u>PHALIUM GRANULATUM</u> (SEVERAL ALIVE)
<u>NOETIA PONDEROSA</u>	<u>PETRICOLA PHOLADIFORMIS</u>
<u>OSTREA EQUESTRIS</u>	<u>ATRINA SEMINUDA</u> (A FEW ALIVE)
<u>DONAX TUMIDUS</u>	<u>ANOMIA SIMPLEX</u>
<u>DINOCARDIUM ROBUSTUM</u>	<u>LABIOSA PLICATELLA</u>
<u>PERIPLOMA INAEQUALE</u>	<u>LABIOSA LINEATA</u>
<u>TELLINA ALTERNATA</u> (ALIVE)	

TYPICAL BAY FAUNA PRESENT INCLUDED:

<u>BRACHIDONTES EXUSTUS</u>	<u>POLINICES DUPLICATUS</u> (COMMON ALIVE)
<u>MODIOLUS DEMISSUS</u>	<u>THAIS HAEMOSTOMA</u> (ALIVE)
<u>TAGELUS PLEBEIUS</u>	<u>CREPIDULA PLANA</u>
<u>MACOMA CONSTRICTA</u>	<u>RANGIA FLEXUOSA</u>
<u>BARNEA COSTATA</u>	<u>RANGIA CUNEATA</u>

UNLESS MENTIONED NONE OF THIS MATERIAL WAS ALIVE.

THE BEACH FAUNA AT ISLE DERNIÈRE PROVED TO BE RICHER IN BOTH BAY AND SURF SPECIES. I DO NOT KNOW THE REASON FOR THIS, BUT IT MAY BE ACCIDENTAL AND CAUSED BY THE WIND AND CURRENT PATTERN AT THE COLLECTION PERIOD. PITAR CORDATA WAS NOT FOUND HERE, BUT INSTEAD CHIONE INTAPURPUREA APPEARED IN THE BEACH DRIFT, WHILE CHIONE CLENCHI WAS CONSIDERABLY MORE ABUNDANT. HERE A FEW SPECIES OF THE SMALLER GASTROPODS MADE THEIR APPEARANCE: EPITONIU ANGULATUM (ALIVE), ANACHIS OBESA, SINUM PERSPECTIVUM, CREPIDULA FORNICATA (ALIVE), AND CANTHARUS CANCELLARIUS. PELECYPODS NOT NOTED ON TIMBALIER ISLAND INCLUDED: ENSIS MINOR, SEMELE PROFICUA, ANADARA TRANSVERSA (ALIVE) AND Aequipecten irradians. COUNTLESS SPECIMENS OF MACOMA MITCHELLI LITTERED THE BEACH, MORE THAN I HAVE EVER SEEN BEFORE AND ALSO SPECIMENS OF BARNEA TRUNCATA WERE FOUND. ENORMOUS QUANTITIES OF LITTORINA IRRORATA WERE FOUND ON THE RUSHES EVERYWHERE ON THE ISLAND, WHILE UNDER AND IN OLD DECAYING DRIFTWOOD MELAMPUS BIDENTATUS (?) WAS COLLECTED ALIVE. LARGE NUMBERS OF POLYMESODA CAROLINIANA, ALL WORN BUT SOME STILL WITH FRAGMENTS OF THE EPIDERMIS, LEADS ONE TO EXPECT THAT THIS SPECIES LIVES SOMEWHERE NEAR THE ISLANDS.

IN SUMMING UP ONE CAN STATE THAT THE MOLLUSK FAUNA OF THESE ISLANDS IS IN ESSENCE THE SAME AS ON THE EASTERN PART OF THE TEXAS COAST. THE ONLY DIFFERENCE WHICH CAN POSSIBLY BE STATED TO EXIST IS THAT THE PERCENTAGE OF TYPICAL BAY SHELLS IN THE DRIFT WAS HIGHER DURING THE TIME WE COLLECTED THERE. THIS HOWEVER CAN EASILY BE CHANGED BY WEATHER CONDITIONS.

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THE SYNONYMY IS AS FOLLOWS:

- 1889 ETHALIA SUPPRESSA DALL, BULL. M.C.Z., VOL. 18 (BLAKE REP.), P. 362.
- 1946 CYCLOSTREMISCUS SUPPRESSUS DALL, PILSBRY AND MCGINTY, NAUTILUS, VOL. 59 (3), P. 82, PL. 8, FIGS. 5, 5A.
- 1964 CYCLOSTREMISCUS SUPPRESSUS DALL, D. R. MOORE, THESIS. (SEE ABOVE.)

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HOW ABOUT A STATE SHELL FOR TEXAS?

BY CORINNE E. EDWARDS

NORTH CAROLINA AND FLORIDA NOW HAVE OFFICIAL STATE SHELLS, WHY NOT TEXAS? NORTH CAROLINA HAS PHALIUM GRANULATUM AND FLORIDA HAS SELECTED PLEUROPLOCA GIGANTEA. SHELL CLUBS IN BOTH STATES TOOK ACTION AND DECIDED TO FURNISH SPECIMEN SHELLS FOR EACH AND EVERY MEMBER OF THE LEGISLATURE, SO THAT WHEN THE BILL CAME UP FOR VOTE IN THE HOUSE AND THE SENATE, THERE WAS A "GIFT" SHELL ON THE DESK OF EACH REPRESENTATIVE.

PLEUROPLOCA GIGANTEA, KIENER 1840 (ONCE CALLED FASCIOLARIA GIGANTEA), THE FLORIDA HORSE CONCH, IS SAID TO BE THE LARGEST GASTROPOD SHELL AND REACHES A LENGTH OF 24 INCHES. IT IS TRULY A FLORIDA SHELL AS IT IS FOUND ALL AROUND THE STATE, JUST OFFSHORE, BUT RANGES INTO NORTH CAROLINA AND TEXAS. IT IS ORANGE IN COLOR JUST AS THE STATE FLOWER, THE ORANGE BLOSSOM. ON 18 JUNE 1969, FLORIDA'S GOVERNOR CLAUDE KIRK SIGNED HOUSE BILL No. 568, IN ORANGE

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A SMALL NEWS STORY ABOUT THE MEXICAN GOVERNMENT'S PLAN TO MAKE THE YUCATAN COASTLINE OPPOSITE THE ISLANDS OF ISLA MUJERES AND COZUMEL ANOTHER TOURIST CENTER SUCH AS ACAPULCO MADE ME MORE THAN ANXIOUS TO JOIN A PARTY OF SAN ANTONIONS IN LATE MAY FOR A COLLECTING TRIP TO ISLA MUJERES. THE THREE OTHERS, MRS. MYRA TAYLOR, MRS. LUCILLE TAYLOR AND MRS. CLETA MEHAVIER, HAD BEEN THERE BEFORE. I KNEW THEY WOULD BE EXCELLENT GUIDES.

TRAVEL FACILITIES BY AIR CHANGED SEVERAL TIMES DURING THE SPRING MONTHS. THE LITTLE AIRLINE FROM THE BORDER WAS DISCONTINUED; AIR RATES BY AERONAVES WERE RAISED; THE AIR CONNECTION BETWEEN MERIDA AND PUERTO JUAREZ, THE FERRY LANDING ACROSS FROM ISLA MUJERES, WAS NOT OPERATING. WE FINALLY DROVE TO MONTREY, FLEW TO MERIDA BY AERONAVES, RODE A BUS (FIRST CLASS TURNED OUT NOT TO BE AIRCONDITIONED AS EXPECTED) TO PUERTO JUAREZ. THIS LATTER IS A 200 MILE TRIP THROUGH THE YUCATAN AREA WHERE THE MAYAN INDIAN RUINS ARE ALSO. IT IS POSSIBLE TO RENT A TAXI IN MERIDA AND DRIVE THIS DISTANCE, STOPPING TO SEE THE RUINS. THE TAXI CAN BE HIRED TO BE AT THE FERRY LANDING TO PICK YOU UP ON THE RETURN, HOPEFULLY THERE ANYWAY! ALSO, FOR FUTURE TRAVELLERS, YOU MAY WISH TO REINVESTIGATE THE POSSIBILITY OF A PLANE TO ISLA FROM MERIDA. TALK IS THAT A SMALL PLANE WILL AGAIN BE PUT IN OPERATION. AT THE PRESENT TIME YOU CAN PLANE TO COZUMEL, AND THERE IS A SMALL PLANE OVER TO ISLA. HOWEVER, IT DOES NOT ALWAYS RUN, AND WE KNOW OF SOME VISITORS WHO WERE LEFT ON ISLA AND MISSED PLANES HOME FROM MERIDA.

IF ALL OF THIS LAST PART CONFUSES YOU, LET ME JUST SAY THAT WE FOUR COULD NOT HAVE RIDDEN ANY SMALL PLANE TO ISLA. NOR COULD WE HAVE TAKEN ONE TAXI. WE BECAME WELL KNOWN IN MEXICO AS THE FOUR AMERICANS WITH "ALL THE TRUNKS". IT EVEN COST US OVERWEIGHT ON THE BUS! AND THE CLERK AT THE MERIDA AIRPORT GOT SO FLUSTERED WHEN HE WEIGHED MY LUGGAGE COMING HOME HE COULDN'T DO THE MULTIPLICATION TO RATE MY OVERWEIGHT. I HAD TO DO IT FINALLY FOR HIM.

WELL, DID I LIKE ISLA? YES, AND I WANT TO GO BACK. THE FAUNA WAS, FOR THE MOST PART, NOT NEW TO ME. ANYONE WHO HAS COLLECTED IN THE FLORIDA KEYS WILL FIND THE CARIBBEAN FAUNA VERY SIMILAR. PERHAPS, SO FAR, YOU ARE STILL ABLE TO COLLECT MORE OF WHAT IS BEGINNING TO BE HARD TO FIND IN FLORIDA. THERE WERE NO OTHER SERIOUS COLLECTORS WHILE WE WERE THERE. HOWEVER, THIS ALSO MEANS THAT YOU HAVE TO DO SOME EDUCATING TO YOUR BOATMEN AND DIVERS IN ORDER TO GET SOME OF THE SHELLS, LIKE HELMETS, STROMBS, CONCHS, THAT LIVE IN THE DEEPER WATERS. SINCE I DO NOT DIVE, I WAS TO A GREAT EXTENT DEPENDENT ON A GUIDE FOR THESE SHELLS, BUT I DID FIND SOME IN THE SHALLOWER AREAS. TWO WORDS LEFT OFF THE LIST OF USEFUL SPANISH WORDS FOR THE COLLECTOR IN "CARIBBEAN SEASHELLS" ARE "VIVO" (ALIVE) AND "UNA" (FINGERNAIL OR TOENAIL AND THE WORD THEY RECOGNIZED FOR THE OPERCULUM). ALSO THE PHRASE "CARACOLE CON ANIMAL" (SHELL WITH ANIMAL) IS VERY HELPFUL.

WE WERE FORTUNATE TO STOP AT THE MARTINEZ HOTEL, A VERY CLEAN AND COMFORTABLE PLACE, INEXPENSIVE, FOUND BY MYRA AND CLETA ON A PREVIOUS TRIP. THE MARTINEZ FAMILY IS DELIGHTFUL.

SINCE WE WERE THERE DURING OFF SEASON FOR TOURISTS, WE HAD THE UPSTAIRS MUCH

TO OURSELVES, WITH A WIDE, COVERED, TILED VERANDA OUTSIDE OUR DOORS WHICH WE KEPT THOROUGHLY MESSED UP WITH SHELLS, SHELLS AND MORE SHELLS. THE MARTINEZ FAMILY HAS SEVERAL SONS WHO ACT AS GUIDES WITH THEIR BOATS. ALBERTO, A SHARK FISHERMAN BY CHOICE, WAS PRESSED INTO SERVICE FOR OUR STAY SINCE ONE OF THE SONS WHO USUALLY TOOK TOURISTS OUT ON TRIPS WAS AWAY. ALBERTO IS MASTERING ENGLISH BY RECORDS, SO COMMUNICATION WAS NOT DIFFICULT.

THERE IS NOT REALLY GREAT SHELLING ON THE INNER SWIMMING BEACHES IF YOU ARE LIMITED TO WADING. YOU DO NOT SEE TRAILS VERY OFTEN IN THE SAND. HOWEVER, THE GRASSES IN WAIST DEEP WATER ARE THE HOME FOR NICE FASCIOLARIA, ASTRAEAS, ARCAS, VALUM, AND SMALL SPECIES. WE COLLECTED ON CLUMPS OF ROCKS AND FOUND BEAUTIFUL CHITONS, LIMPETS, CHLAMYS SENTIS AND LIMAS. COLLECTING ON THE ROCKS AND FRINGE REEF ON THE OUTER BEACHES WAS VERY PROFITABLE. FROM THIS AREA I DERIVED MOST OF THE SPECIES NEW TO MY COLLECTION, AS I CAME HOME WITH A NUMBER OF DIFFERENT LIMPETS, OLIVELLAS, CANTHARUS, ENGINAS, PURPURAS, AND MANY OTHER SMALL SHELLS.

ALL THE BOAT TRIPS WERE EXCITING. ONE WILL NEVER BE FORGOTTEN. WE RENTED ONE OF THE LARGEST BOATS, ACTUALLY ONE THAT IS USED IN FERRY SERVICE ALSO, TO TAKE US TO CAN TOY ISLAND. WE STOPPED AT THE MAINLAND PENINSULA FIRST TO COLLECT AND THEN HEADED TO THE AREA WHERE THERE WERE SUPPOSED TO BE BIG PLEUROPLOCA GIGANTEA. ALBERTO AND ANOTHER DIVER WENT OUT TO SEE WHAT THEY COULD FIND IN THE WAY OF SHELLS AND ALSO TO GET LOBSTER FOR LUNCH. WE NOTICED THE CAPTAIN BEGAN TO LOOK VERY CONCERNED AND TO WATCH FOR THE DIVERS. FRANKLY, WE WERE EXCITED OVER THE SHELLS ALREADY ON BOARD, THE BEAUTIFUL XANCUS AND PLEUROPLOCA AND STROMBUS GIGAS, SO WE DIDN'T REALLY WORRY EVEN WHEN WE SAW THE CAPTAIN LOOK INTO THE ENGINE ROOM. WE BEGAN TO WATCH ALBERTO AND HIS HELPER TUGGING AWAY ON A ROPE, PULLING SOMETHING HEAVY INTO THEIR SMALL BOATS SOME DISTANCE OUT AND THOUGHT HE REALLY HAD FOUND A GRANDDADDY PLEUROPLOCA! THE CAPTAIN DIDN'T SPEAK ENGLISH. IT WASN'T UNTIL ALBERTO CAME BACK ALONGSIDE THAT WE FOUND OUT THE 800 POUND BRASS PROPELLER HAD BEEN LOST OFF THE BOAT AND THAT THE DIVERS WERE OUT TRYING TO FIND IT TO TOW HOME. WELL, WE DID HAVE RADIO COMMUNICATION, AND ANOTHER FERRY BOAT HAD TO COME (SOME THREE HOURS LATER) AND PULL US HOME. WE NEVER GOT TO CON TOY, BUT WE DID HAVE A DELICIOUS LOBSTER AND FISH DINNER (THE FISH WE ALL CAUGHT WITH HEAVY HAND LINES).

WE MADE ONE BOAT TRIP TO THE ISLAND OF CAN CUN WHERE MYRA GOT CHASED IN FROM SNORKELING BY A HUGE SHARK. THIS ISLAND HAS ALREADY BEEN PARTLY SOLD TO A HOTEL CHAIN. A FERRY SERVICE WILL EVENTUALLY BE PUT IN USE TO GET TO THIS LOVELY PLACE.

ANOTHER COLLECTING SITE MUST BE MENTIONED. LUCILLE AND I WENT TO THE MUCKY, SMELLY, GRASSY LAGOONAL AREA BY THE AIRPORT TO COLLECT MELONGENAS. WE DID FIND A FEW, ALTHOUGH FOR SUCH A HEAVILY GRASSSED AREA OUR OTHER COLLECTING WAS NOT VERY GOOD. WE DID SIT AND DIG A FEW LIVE CODAKIAS. MY SURPRISE CAME WHEN I WANDERED OFF ON MY OWN AND SEARCHED AROUND THE MANGROVE TREES. I HEARD SNORTING HELD UP WONDERING WHAT KIND OF ANIMAL TO EXPECT, AND THEN LOOKED UP TO BE IMMEDIATELY FACE TO FACE WITH HUGE SEA TURTLE. I COULDN'T RUN AS I WAS BARELY ABLE TO LIFT ONE FOOT FROM THE MUCK AND STEP AT ALL. IT TURNED OUT THAT THE TURTLE WAS TIED, FOR FUTURE SLAUGHTERING FOR THE STAPLE MEAT OF THE ISLAND. THERE WERE SOME 20 OF THE HUGE TURTLES IN THIS AREA TIED TO THE MANGROVES.



OTHER COLLECTING IN THE LAGOONS YIELDED PRUNUM LABIATUM, MUREX POMUM, A KIND OF EITHER MELONGENA OR THAIS (THESE HAVE BEEN SENT TO DR. CLENCH, I BELIEVE, BY MYRA TAYLOR), A PINK FORM OF HYALINA AVENA GIVEN THE NAME BEYERLEANA BERN. ON THE ROCKS WERE HUGE CITTARIUM PICA, PRIZED FOR EATING BY THE MARTINEZ FAMILY MUCH MORE THAN STROMBUS GIGAS.

WE ALSO MADE ONE TRIP IN A SMALL BOAT ACROSS TO THE PENINSULA EAST OF PUERTO JUAREZ ON THE QUINTANA ROO MAINLAND. IT WAS A SPECIAL TRIP TO REDISCOVER THE COLONY OF MELONGENA BISPINOSA PHILLIPPI, FOUND ON A EARLIER TRIP BY CLETA WHEN HER HUSBAND WENT BONE FISHING TO THIS AREA. JOHNSONIA, No. 35 IN VOL. 3, DESCRIBES THIS AS AN ISOLATED RACE KNOWN FROM THE YUCATAN, A KIND OF RELICT SPECIES KNOWN FROM THE PROGRESSO, YUCATAN, AREA. WE FOUND MANY OF THE SHELLS, EATING ANOMALOCARDIA BRASILIANA, IN THE MUCKY LAGOON. THEY SEEMED TO BE CONCENTRATED AT THIS SPOT. FROM THE GREAT NUMBER OF EGG CASES BEING DEPOSITED ON EACH OTHER AND ON MANGROVE ROOTS AND ROTTING WOOD, THIS SPECIES WILL MULTIPLY. ONE REASON IT WILL NOT BE OVERCOLLECTED FOR AWHILE IS THE DIFFICULTY IN GETTING TO THIS PLACE. WE WERE TOLD WE COULD STAY ONLY A SHORT TIME. ALBERTO HAD CHOSEN TO GO ONLY ON A CALM MORNING AND IN A SMALLER BOAT WITH AN OUTBOARD MOTOR. THIS WAS IN ORDER THAT WE COULD GET TO THE OUTER SHORE EASILY BY BEACHING THE BOAT, CROSSING TO THE LAGOON BY FOOT, AND THEN LEAVING IN AN HOUR BEFORE THE SURF BEGAN IT'S USUAL DAILY POUNDING OF THE OUTER BEACH. AS IT WAS, LUCILLE TAYLOR ALMOST BROKE HER NECK FALLING IN THE BOAT HEADFIRST. SHE HAD BEEN DETERMINED TO BRING THE FIVE BIG HORSESHOE CRABS SHE FOUND ALIVE!

THE ISLAND IS BECOMING MORE AND MORE MODERN. FIRST THING THAT GREETED US AFTER WE GOT OFF THE FERRY ON ARRIVAL WAS A ROTARY SIGN SWINGING IN THE BREEZE. THERE ARE MULTI-STORIED HOTELS WITH ALL OF THE BEST ACCOMMODATIONS. AIR CONDITIONING AND TELEVISION AERIALS ARE IN EVIDENCE. AN IMPORTER BROUGHT IN TWO MOTORCYCLES ONE WEEK. A WEEK LATER HE BROUGHT MORE. NOW THEY ROAR AROUND THE LITTLE TOWN DAY AND NIGHT. THERE ARE A FEW CARS, USED AS TAXIS MOSTLY. THERE ARE MODERN HOMES AND STORES, A FINE NEW SQUARE WITH PLAYGROUND EQUIPMENT AND A BASKETBALL COURT WHERE GAMES ARE PLAYED EVERY NIGHT. THERE IS A NEW BIG CHURCH. THE PEOPLE ARE FRIENDLY. THEY ARE READY TO MEET THE TOURIST TRADE, BUT OFF SEASON, WHICH IS LATE SPRING AND SUMMER, IS STILL A GOOD VACATION TIME THERE, WHETHER YOU ARE A SHELL COLLECTOR OR NOT.

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CONTINUED FROM PAGE 16

INK AND GAVE THE PEN TO THE PALM BEACH COUNTY SHELL CLUB WHO PUSHED THE IDEA. SO, THE FLORIDA STATE SHELL IS NOW OFFICIALLY PLEUROPLOCA GIGANTEA, THANKS TO PALM BEACH COUNTY SHELL CLUB'S MARGARET KENNEDY AND WILLIAM G. JAMES, REPRESENTATIVE FROM THE 78TH DISTRICT OF FLORIDA. HOW ABOUT A STATE SHELL FOR TEXAS?

EDITOR'S COMMENT:

IN THE TEXAS CONCHOLOGIST, VOL. 4, P. 27-29, I DISCUSSED THE SELECTION OF A POSSIBLE TEXAS "STATE" SHELL. SEVERAL SHELL CLUBS HAVE TAKEN A VOTE CONCERNING THE SPECIES. IT WILL BE UP TO THE TEXAS SHELL COLECTORS TO GET RESULTS IN AUSTIN.

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IN THE COURSE OF WORKING THROUGH A LARGE NUMBER OF LOTS OF TELLINS DREDGED IN TEXAS OFFSHORE WATERS SOME INTERESTING FACTS WERE NOTED WHICH MIGHT BE OF INTEREST TO OUR READERS. NOT ONLY HAS IT BECOME CLEAR THAT ONE OF THE MOST COMMON OFFSHORE SPECIES SO FAR HAS NOT BEEN REPORTED FROM THE NORTHWESTERN GULF OF MEXICO, BUT ALSO THAT A COMPARISON OF THE OFFSHORE FAUNA WITH THAT OF THE BAYS AND BEACHES CAN THROW SOME LIGHT ON THE ECOLOGIES IN WHICH SEVERAL SPECIES LIVE.

A FACT WHICH IS IMMEDIATELY APPARENT TO THE STUDENT OF THE TEXAS FAUNA IS THE ABSENCE OF SEVERAL OF THE LARGE SPECIES OF TELLINA SUCH AS TELLINA LAEVIGATA, AND TELLINA LISTERI. TELLINA RADIATA IS ALSO ABSENT IN OUR COLLECTION OF OFFSHORE MATERIAL, BUT PARKER HAS REPORTED THIS SPECIES FROM OFFSHORE CORAL ENVIRONMENTS. IN THE LATEST ISSUE OF JOHNSONIA BOSS DOES NOT MENTION THIS SPECIES FOR THE NORTHWEST GULF OF MEXICO AND TEXAS MATERIAL IS APPARENTLY NOT PRESENT IN OUR LARGER NATIONAL COLLECTIONS. I HAVE SO FAR NOT SEEN THIS SPECIES IN THE NORTHWEST GULF OF MEXICO.

THE ONLY LARGE OFFSHORE SPECIES, FOUND A FEW TIMES ON TEXAS BEACHES (PADRE ISLAND), TELLINA MAGNA, OCCURS SPARINGLY ALONG THE ENTIRE TEXAS COAST. IN THE COLLECTION BROUGHT TOGETHER FOR THE HOUSTON MUSEUM OF NATURAL SCIENCE THERE ARE SEVERAL LOTS OF THIS INTERESTING BIVALVE. THE NEXT LARGEST SPECIES IS TELLINA ALTERNATA. IT OCCURS NOT TOO COMMONLY IN DREDGED MATERIAL, AND IT IS SIGNIFICANT THAT ALL LOTS EXCEPT ONE CONSIST OF YELLOWISH WHITE SHELLS, WHICH ACCORDING TO BOSS SHOULD BE CLASSIFIED AS TELLINA ALTERNATA. ONLY ONE SINGLE PAIR, STILL CONNECTED, HAS THE TYPICAL PINK COLORATION OF T. TAYLORIANA AND POSSESSES MOST OF THE CHARACTERISTICS OF SHAPE AND SCULPTURE CONNECTED WITH THAT SPECIES. THIS MIGHT INDICATE THAT T. TAYLORIANA IS A FORM WHICH PREFERS THE SHALLOWER WATER OF THE SURF ZONE AND INLET AREAS AND FOR THAT REASON IS SO COMMONLY FOUND ON TEXAS BEACHES. HOWEVER, ALSO T. ALTERNATA IS OFTEN FOUND ON THE BEACH BUT APPARENTLY CAN TOLERATE DEEPER WATER AND A WIDE RANGE OF ECOLOGIES.

QUITE RARE OFFSHORE GALVESTON AND FREEPORT IS T. LINEATA OF WHICH ONLY A SINGLE LOT WAS OBTAINED, ALL DEAD SHELLS. THIS SPECIES IS HOWEVER NOT UNCOMMONLY FOUND IN SPOILBANK MUD IN THE PORT ARANSAS AREA, BUT THESE SHELLS ARE OLD AND DEAD. IN CONTRAST NUMEROUS LOTS OF T. NITENS WERE DREDGED CONTAINING SOME LIVE MATERIAL. THIS SPECIES LIVES IN A DEPTH RANGE WHICH PRECLUDES IT FROM WASHING ASHORE AND ONLY SOUTH OF CORPUS CHRISTI IS IT KNOWN FROM THE BEACH. TELLINA SQUAMIFERA AND T. AEQUISTRIATA APPARENTLY LIVE IN THE SAME DEPTH RANGE. BOTH SPECIES ARE QUITE COMMON OFFSHORE ALONG THE ENTIRE TEXAS COAST, AS OUR NUMEROUS LOTS TESTIFY, SOME OF WHICH WERE COLLECTED ALIVE. BEACH SHELLS OF THESE ARE QUITE RARE NEAR GALVESTON, (SEE TEX. CONCHOLOGIST, VOL. 5, No. 2, P. 10), INDICATING THAT BOTH SPECIES DO NOT TOLERATE INSHORE CONDITIONS. IT MAY BE NOTED THAT T. AEQUISTRIATA IS NOT UNCOMMON IN BEACHDRIFT AT PORT ARANSAS AND FURTHER SOUTH.

CONSPICUOUS IS THE ABSENCE OF T. TAMPAENSIS IN OFFSHORE MATERIAL. ONLY A SINGLE LOT OBTAINED FROM GALVESTON BAY IS PRESENT IN THE COLLECTION, BUT WE HAVE NOT YET EXTENSIVELY SAMPLED THE BAY AREA AND IT IS WELL KNOWN THAT T. TAMPAENSIS IS A WIDESPREAD CONSTITUENT OF THE TEXAS BAY FAUNA.

..... TO BE CONTINUED.

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# CONCHOLOGIST

SMITHSONIAN  
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OCTOBER 1969  
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VOLUME VI, No. 3

## NOTES & NEWS

### NEXT MEETING

DR. W. W. SUTOW WILL PRESENT AN ILLUSTRATED LECTURE ON "RAPIDAE OF JAPAN: AT THE MEETING WEDNESDAY OCTOBER 22 AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE. DR. SUTOW IS PEDIATRICIAN AT M. D. ANDERSON HOSPITAL AND ONE OF OUR KNOWLEDGEABLE MEMBERS. HE HAS PROMISED TO BRING SOME OF THE MORE SPECTACULAR SPECIMENS OF THIS FAMILY OF SHELLS HE FAVORS.

### NOVEMBER MEETING

PLEASE MARK NOVEMBER 19 ON YOUR CALENDAR NOW. THE MEETING WILL BE ONE WEEK EARLY IN NOVEMBER BECAUSE OF THE THANKSGIVING HOLIDAYS. THE NEXT ISSUE OF TEXAS CONCHOLOGIST WILL BE FOR NOVEMBER AND DECEMBER AND WILL NOT BE OUT JUST BEFORE THE MEETING TO REMIND YOU TO ATTEND.

MR. PAUL MCGEE WILL BE OUR NOVEMBER 19 SPEAKER. A MEMBER OF OUR SOCIETY, HE IS ON LEAVE OF ABSENCE FROM THE HOUSTON INDEPENDENT SCHOOL OCEANOGRAPHIC DEPARTMENT AND IS CURATOR OF THE SEA-ARAMA AT GALVESTON. PAUL'S ENTHUSIASM FOR SHELLS IS WELL KNOWN; IN FACT, HE HAS OFTEN SAID HE WISHES HE COULD SPEND HIS LIFE WORK ROAMING UP AND DOWN THE COAST COLLECTING SHELLS. DON'T WE ALL WISH THIS!

### REPORT SEPTEMBER MEETING

A LARGE GROUP OF MEMBERS AND VISITORS GATHERED AT THE MUSEUM TO HEAR MILDRED TATE TELL ABOUT HER COLLECTION OF GULF OF MEXICO SHELLS. SOME OF HER PRIZE SPECIMENS OF VERY RARE SHELLS WERE ON DISPLAY. MILDRED ALSO SHOWED A MOVIE OF THE SHELLS AS THEY WERE BROUGHT IN BY THE SHRIMPER. THERE WERE SOME GREAT SHOTS OF LIVING SHELLS FILMED AS THEY MOVED ABOUT IN AN AQUARIUM.

THE PRESIDENT REPORTED THAT THE BOARD OF OUR SOCIETY HAS DECIDED TO ACCEPT THE PROPOSAL MADE BY THE OUTDOOR NATURE CLUB TO SETTLE THE DIFFICULTIES BETWEEN THE TWO ORGANIZATIONS. BOARD MEMBERS GEIS, SUTOW AND CARDEZA RESIGNED IN ORDER THAT NEW BOARD MEMBERS COULD BE ELECTED BY THE MEMBERSHIP. ALL THREE WERE RE-ELECTED.

### FIELD TRIPS FOR OCTOBER AND NOVEMBER

BY LLOYD MEISTER

A FEW CHANGES HAVE BEEN MADE SINCE THE ANNOUNCEMENT OF A FIELD TRIP AT THE LAST MEETING. WE WILL MEET AT THE BOLIVAR FERRY LANDING AT 9:00 A.M. ON THE MORNING OF OCTOBER 26TH. FROM THERE WE GO TO THE BOLIVAR DUMP AREA. LOW TIDE IS AT 10:18 A.M. WE WILL THEN FOLLOW LOW TIDE UP THE COAST AND FINALLY END UP AT GILCHRIST. THE BEST WAY TO GET THERE IS TO GO THROUGH GALVESTON ON BROADWAY TO SEAWALL BLVD., TURN LEFT AND FOLLOW THE SIGNS TO THE FERRY AND CROSS TO BOLIVAR AND WAIT AT THE LANDING. THERE IS PLENTY OF PARKING SPACE.

...CONTINUED ON PAGE 23

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### VITRINELLIDAE CONCLUDED

EPISCYNIA INORNATA ORBIGNY, 1842. THIS SPECIES IS IMMEDIATELY RECOGNIZED BY ITS EXTREMELY FINELY SERRATED KEEL WHICH ENVELOPS THE OUTER WHORL. NOT UNCOMMONLY SPECIMENS HAVE BEEN TAKEN IN THE BAYS NEAR PORT ARANSAS AND ON THE BEACH AT PORT ISABEL. IT OCCURS WIDESPREAD, BUT IN SMALL NUMBERS IN THE SHALLOWER SHELF PORTIONS OFF GALVESTON AND FREEPORT.

FIGURED IN: REF. 3

PREVIOUS REFERENCES: THESIS, DR. D. R. MOORE

LOCALITIES: PORT ARANSAS, PORT ISABEL.

MACROMPHALINA PALMALITORIS PILSBRY AND MCGINTY, 1946. THIS SPECIES CAN BE IMMEDIATELY RECOGNIZED BY ITS PECULIAR AURIFORM SHAPE. OFFSHORE IT OCCURS OFF GALVESTON AND FREEPORT, BUT SO FAR ONLY A SINGLE SPECIMEN (COLL. ROZZELL) HAS BEEN FOUND AT PORT ARANSAS. ALSO ONE SPECIMEN HAS BEEN TAKEN FROM 7-1/2 FATHOMS OFF PADRE ISLAND.

FIGURED IN: NAUTILIS, VOL. 60(3), PL. 5, FIGS 6, 6A

PREVIOUS REFERENCES: THESIS, DR. D. R. MOORE

LOCALITIES: PORT ARANSAS

MACROMPHALINA PIERROT GARDNER. A SINGLE SHELL WHICH APPEARS TO BE THIS SPECIES WAS COLLECTED NEAR THE OLD BRIDGE 6 ALONG THE ARANSAS SHIP CHANNEL, AUGUST, 1967 (COLL. SPEERS). THE DATA GIVEN REF. INDICATE THAT THIS IS A PLEISTOCENE SPECIES. AS A GREAT DEAL OF PLEISTOCENE MATERIAL OCCURS IN THE AREA WHERE THE TEXAS SPECIMEN WAS COLLECTED, IT IS CONCEIVABLY ALSO A FOSSIL SHELL IN TEXAS.

FIGURED IN: REF. 7

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS

COCHLIOLEPIS STRIATA DALL, 1889. PROBABLY THE LARGEST VITRINELLID TO BE FOUND ON THE TEXAS BEACH. IT RESEMBLES VERY MUCH A MINUTE SINUM, BUT IS IMMEDIATELY RECOGNIZED BY ITS WIDE OPEN UMBILICUS. DR. D. R. MOORE TOLD ME THAT IT IS PROBABLE THAT THE ANIMALS OF COCHLIOLEPIS ARE PARASITES OF CERTAIN WORMS. ON OCCASION NUMEROUS SPECIMENS MAY APPEAR IN BEACH DRIFT ON GULF BEACHES AND NEAR INLET AREAS AROUND PORT ARANSAS.

FIGURED IN: REF. 7

PREVIOUS REFERENCES: THESIS, DR. D. R. MOORE

LOCALITIES: GALVESTON, PORT ARANSAS, PORT ISABEL

COCHLIOLEPIS PARASITICA STIMPSON 1958. THIS SMALLER SPECIES LACKS THE SPIRAL STRIAE OF STRIATA, BUT HAS INSTEAD A FEW CLEARLY INCISED "GROWTH" LINES DIVIDING THE SHELL AS IT WERE IN CHAMBERS, HENCE ALSO THE NAME C. NAUTILIFORMIS. IT IS RARE IN BEACH DRIFT IN THE GALVESTON AREA; OFTEN WHEN C. STRIATA IS FOUND IN DRIFT ALSO THIS SPECIES IS PRESENT. NOT UNCOMMON AROUND PORT ARANSAS AND PORT ISABEL.

FIGURED IN: THESIS, DR. D. R. MOORE

PREVIOUS REFERENCES: THESIS, DR. D. R. MOORE

LOCALITIES: GALVESTON, PORT ARANSAS, PORT ISABEL

REMARKS: IN THE COLLECTION OF THE HOUSTON MUSEUM OF NATURAL SCIENCE THERE ARE MANY MORE SPECIES OF THIS SPECIES-RICH FAMILY. PROBABLY NO LESS THAN 50 SPECIES ARE PRESENT, AMONG WHICH ARE A NUMBER OF TEINOSTOMAS, WHICH ARE INTERESTING. THEY APPEAR CLOSELY RELATED TO SOME SPECIES DESCRIBED FROM THE PLEISTOCENE OF FLORIDA. A NUMBER OF AN EPISCYNIA SP. SHOWS ABSOLUTELY NO EVIDENCE OF A SERRATED KEEL. WHETHER THIS IS ANOTHER SPECIES CANNOT BE ESTABLISHED YET. THE FAUNA OF THE CORAL REEFS INCLUDES A NUMBER OF FORMS, WHICH ARE UNKNOWN TO ME. QUITE COMMON IS A SHELL CLOSELY RESEMBLING ETHALIA RECLUSA DALL. OTHER SPECIES EXCLUSIVELY FOUND ON THE CORAL REEFS ARE CYCLOSTREMISCUS CUBANUS PILSBRY AND AGUAYO 1933 AND PACHYSTREMISCUS ORNATUS OLSSON AND MCGINTY 1958. AOROTREMA SP. IS WIDESPREAD BUT FEW IN NUMBERS. THE GENERA CYCLOSTREMISCUS AND SOLARIORBIS ARE REPRESENTED OFFSHORE BY MORE SPECIES THAN HAVE BEEN ENUMERATED ABOVE.

SOME ADDITIONAL RECORDS FOR PREVIOUSLY REPORTED SPECIES: THREE SPECIMENS OF CYCLOSTREMISCUS JEANNAE HAVE BEEN COLLECTED AT SOUTH PADRE ISLAND (COLL. SPEERS). VITRINELLA HELICOIDEA IS COMMON IN BEACHDRIFT ON THE BEACH OF MUSTANG ISLAND.

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...CONTINUED FROM PAGE 21

IT IS HOPED THAT ALL OF OUR NEW MEMBERS WILL COME, AND OUR OLD ONES TOO.

SINCE THE NEXT EDITION WILL NOT BE OUT UNTIL AFTER THE MEETING I HERE ANNOUNCE A FIELD TRIP FOR THE 23RD OF NOVEMBER. THIS TRIP WILL BE IN CONJUNCTION WITH ONE OF THE SAN ANTONIO SHELL CLUB. WE WILL MEET AT THE GALVESTON SIDE OF SAN LUIS PASS AT THE BEACH UNDER THE BRIDGE AT 9:00 A.M. AND WE WILL GO FROM THERE. BE SURE TO MARK THIS ON YOUR CALENDAR SO THAT YOU DON'T FORGET.

#### DUES

THIS WILL BE THE LAST REMINDER TO OUR MEMBERS WHO HAVE NOT YET PAID THEIR DUES:

\$4.00 FOR LOCAL MEMBERSHIP.

\$5.00 FOR FAMILY MEMBERSHIP.

\$2.00 FOR JUNIOR MEMBERSHIP.

\$2.00 FOR SUBSCRIBERS.

MEMBERS DESIRING THE MAILING OF EXTRA COPIES PAY \$2.00 PER ADDITIONAL COPY. INDIVIDUAL COPIES ARE 50¢. THE FIRST THREE VOLUMES ARE OUT OF PRINT. NO FURTHER ISSUES WILL BE MAILED TO UNPAID MEMBERS.

UTIRIK IN THE MARSHALL ISLANDS IS A REMOTE, SMALL ATOLL - ABOUT TEN MILES IN DIAMETER AND MOSTLY UNDER WATER. ONLY THREE OR FOUR TINY ISLANDS ARE HIGH ENOUGH TO SUPPORT VEGETATION. WE LIVED ON THE TRUST TERRITORY BOAT, M/V JAMES A. COOK, AND COMMUTED ASHORE. ONE DAY, THE BOAT'S CREW WENT CLAMMING TO THE SUBMERGED REEFS AT THE RIM OF THE ATOLL. THE WATER THERE AT LOW TIDE WAS WAIST DEEP. THEY CAME BACK WITH A COUPLE DOZEN SPECIMENS OF TRIDACNA GIGAS AND A NUMBER OF TRIDACNA SQUAMOSA. WE WANTED THE SHELLS. THE CREW WANTED THE MEAT.

THE CHIEF STEWARD ON THE SHIP WENT BY THE DIFFICULT NAME OF N. BEKETEI WASISANG. HE CAME FROM PALAU. HE WENT TO CONSIDERABLE EXTRA TROUBLE TO PREPARE FOR ME A REAL GIANT CLAM MEAL. THE LARGE ADDUCTOR MUSCLES WERE SLICED THIN AND SERVED AS "SASHIMI". WITH LIME JUICE AND SHOYU THE FLAVOR AND TEXTURE WERE QUITE REMINISCENT OF THE FRESH CAUGHT ABALONE. THE STEWARD ALSO COOKED WITH BUTTER, BACON, CREAM AND ONION, THE SOFTER PARTS OF THE CLAM, MOSTLY THE MANTLE. THE MEAL WAS DELICIOUS! AS I ENJOYED THE DELECTABLE REPAST, I THOUGHT HERE WAS SOMETHING WORTHY OF INCLUSION IN THE BOOKS OF EUELL GIBBONS.

THE CHIEF STEWARD SURVIVED THE BOMBING AND THE WAR. HE RELATED HOW THE JAPANESE HELD ISLANDS WERE INCESSANTLY BOMBED BY THE AMERICANS. FISHING WAS IMPOSSIBLE. THE NATIVES SURVIVED BY SNEAKING OUT TO THE SUBMERGED REEFS AT NIGHT. THEY LOCATED THE GAPING GIANT CLAMS UNDER WATER. WITH A SWIFT STROKE OF A SHARP KNIFE THEY CUT THROUGH THE ADDUCTOR MUSCLES OF THE CLAMS. WITH THE VALVES NOW UNABLE TO CLOSE, THE MEAT WAS REMOVED AND LUGGED ASHORE. THE JAPANESE CALL THESE GIANT CLAMS "SHAKO-GAI". IN THE SOUTH PACIFIC THEY ARE KNOWN AS "KABOR" IN THE MARSHALLS, "KIM" ON PALAU, AND "PASU" ON PONAPE.

DURING SICK CALL ONE MORNING WE HAD REAL EXCITEMENT. WE RECEIVED WORD THROUGH INTERPRETERS THAT A TEENAGER HAD HIS FOOT CAUGHT BY A GIANT CLAM AND WAS BADLY CUT. DR. BROWN DOBYNS (CLEVELAND) WAS THE SURGEON IN OUR GROUP AND HE BEGAN RESOURCEFULLY TO ASSEMBLE A MAKESHIFT MINOR SURGERY SETUP. MEANWHILE THE BOY HAD BEEN BROUGHT IN WITH A DEEP 3-INCH LACERATION ACROSS THE DORSUM OF HIS LEFT FOOT. IN SPITE OF THE HANDICAPS, DR. DOBYNS CLEANED THE WOUND AND SUTURED THE EDGES TOGETHER. THREE OF THE TENDONS HAD BEEN SEVERED. A SPLINT WAS SHAPED FROM THE STEM OF A PALM FROND. THE FOOT WAS BANDAGED TO THE SUPPORT. WE HAD A HARD TIME BUT WE FINALLY PIECED TOGETHER THE REAL STORY OF THE BOY'S INJURY. APPARENTLY, HE HAD BEEN SWIMMING AND HAD CUT HIS FOOT ON THE SHARP SCALLOPED EDGE OF A DEAD GIANT CLAM SHELL.

INCIDENTALLY, DR. DOBYNS WAS A LONG-TIME NATURALIST AND AN EXPERIENCED ORNITHOLOGIST. HE HAD NOT PAID MUCH ATTENTION TO SEASHELLS BEFORE BUT BY THE TIME HE FINISHED THE MEDICAL SURVEY WITH US HE HAD TURNED INTO A RIGHT ACTIVE SHELL COLLECTOR, TOO!

BEACH SHELLING WAS GOOD ON UTIRIK. I FILLED COUPLE OF PLASTIC BAGS WITH TURBO PETHOLATUS MANY OF WHICH WERE QUITE RIPE. I PICKED UP A NUMBER OF CYPRAEA TESTUDINARIA, CYPRAEA TALPA AND SMALLER COWRIES. BEAUTIFULLY AND FRESHLY COLORED SHELL FRAGMENTS HINTED AT THE FABULOUS MOLLUSCAN WEALTH THAT MUST WASH ASHORE FROM TIME TO TIME.

UNTIL SEVERAL YEARS AGO THE ONLY SPECIES OF OLIVELLA MENTIONED FOR TEXAS WAS O. MUTICA. IT HAS SINCE BEEN ESTABLISHED THAT THIS SPECIES IS NOT FOUND IN TEXAS, BUT THAT THE GENUS IS REPRESENTED BY TWO OTHER SPECIES WHICH APPEAR TO HAVE A DIFFERENT ECOLOGY. O. DEALBATA LIVES ON THE MUDFLATS NEAR THE INLET AREAS OF GALVESTON, MATAGORDA AND PORT ARANSAS, WHILE O. MINUTA SEEMS TO PREFER THE HABITAT OF THE SANDY SURF ZONE TO THE MUD OF THE INLET FLATS. DEAD SHELLS OF BOTH SPECIES CAN USUALLY BE COLLECTED DEAD IN BEACH DRIFT ALL ALONG THE TEXAS COAST. WHILE O. DEALBATA SEEMS TO BE EQUALLY DISTRIBUTED ALONG THE ENTIRE TEXAS COAST AND OCCASIONALLY EVEN SEEMS TO BE MORE COMMON IN THE GALVESTON AREA THAN FURTHER SOUTH, O. MINUTA IS DEFINITELY MORE COMMON AT PORT ARANSAS TO PORT ISABEL THAN ALONG THE EASTERN PART OF THE TEXAS COAST. THE TWO SPECIES CAN BE EASILY SEPARATED BY THEIR COLOR PATTERN AND THE SHAPE OF THE COLUMNELLA AS IS AMPLY DEMONSTRATED IN THE PHOTOGRAPHS, TAKEN BY MR. C. DEXTER.



OLIVELLA MINUTA LINK 1807. LENGTH 5 MM.  
GALVESTON WEST BEACH

THE TWO PHOTOGRAPHS OF O. DEALBATA SHOW THE VARIABILITY OF THIS SPECIES. BOTH FORMS WERE OBTAINED FROM THE SAME POPULATION ON THE MUDFLATS OF SAN LUIS PASS. THE SHELLS OF O. MINUTA WERE COLLECTED IN THE TIDELINE ON GALVESTON. O. DEALBATA HAS USUALLY A BAND OF BROWNISH MARKINGS MAINLY ARRANGED VERTICALLY, WHILE O. MINUTA DISPLAYS REDDISH PURPLE ZICZAC MARKINGS. THERE ARE REPORTS THAT A THIRD SPECIES O. ADELAE ALSO HAS BEEN COLLECTED IN TEXAS. A DEFINITE JUDGEMENT ABOUT THE VALIDITY OF THESE REPORTS HAS TO WAIT UNTIL MORE MATERIAL CAN BE COLLECTED AT PORT ISABEL.

BECAUSE PREVIOUS REFERENCES TO THIS GENUS ALL CONCERN O. MUTICA IT SEEMS NOT WORTH WHILE TO REPEAT THEM HERE.

FOR A SOURCE CONCERNING THESE TWO SPECIES WE REFER TO: STUDIES ON THE GENUS OLIVELLA BY A. A. OLSSON IN PROC. ACAD. NAT. SCI., PHILA., VOL. 108, 1956, P. 155-225



OLIVELLA DEALBATA REEVE 1850. SIZE 6 MM.  
SAN LUIS PASS

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BOTH IN THE SUNDAY EDITION OF THE HOUSTON CHRONICLE OF SEPTEMBER 21 AND THE SEPTEMBER ISSUE OF THE PORT OF HOUSTON MAGAZINE THERE HAVE APPEARED ARTICLES ABOUT THE LATEST SHELLING TRIPS IN THE GULF OF MEXICO. THE FIRST, "TREASURE OF THE 18 FATHOM LUMP" BY LOUIS HOFFERBERT, SHOWS COLORED UNDERWATER SCAPES OF THE REEFS AT THE EDGE OF THE SHELF. THE LATTER, "DIVERS EXPLORE FLOOR OF GULF", BY T. S. BONNEY, SHOWS A NUMBER OF PHOTOGRAPHS OF WHAT HAPPENED DURING THE EXPEDITION.

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SINCE WE ARE GETTING READY FOR OUR FIRST FIELD TRIP OF THE YEAR , PERHAPS IT WOULD BE APPROPRIATE TO REMARK ON THE PROBLEMS OF NOMENCLATURE FOR THE AMATEUR .

ONCE I WAS TOLD BY A PROFESSIONAL MALACOLOGIST THAT THE AMATEUR THROUGH THE AGES HAS ALWAYS FIRST WANTED A NAME FOR HIS SHELL . SOME OF THE EARLY NATURALISTS WERE AMATEURS WHO HAD THE MONEY AND THE DESIRE TO BE COLLECTORS AND ROAMED THE WORLD FOR SHELL SPECIMENS . THEY WOULD RETURN AND PAY PROFESSIONAL SCIENTISTS TO NAME THEIR SHELLS . THE NUMBER OF BOOKS ON THE MARKET TODAY INDICATE THE AMATEUR'S AVID INTEREST IN NAMES FOR THE SHELLS HE COLLECTS .

ON THIS COMING FIELD TRIP YOU WILL , IF YOU ARE ONE OF OUR NEW MEMBERS , PICK UP A SHELL AND ASK WHAT IT IS . SOME OF THE MORE EXPERIENCED MEMBERS WILL BE ABLE TO GIVE YOU THE CORRECT LATIN NAME FOR MANY OF THE SHELLS . YOU WILL BE TOLD TO TRY TO LEARN THE LATIN NAME , TO RECORD IT WITH THE CORRECT DATA . MOST OF YOU KNOW THE PROCEDURES OUTLINED IN CURRENT BOOKS FOR THE COLLECTOR TO FOLLOW . HOWEVER , YOU WILL ALSO PICK UP SOME SHELLS , ESPECIALLY THE SMALL ONES FOUND IN BEACHDRIFT , AND RECEIVE NO CERTAIN ANSWER FROM MOST OF US . THERE ARE ABOUT 200 HUNDRED TEXAS BEACH AREA SHELLS THAT CAN BE FAIRLY EASILY IDENTIFIED . THERE ARE SOME 200 MORE THAT TAKE A LITTLE MORE DIGGING TO DISCOVER THE NAMES . THERE ARE HUNDREDS MORE FROM OFFSHORE , SOME OF WHICH OCCASIONALLY REACH SHORE , THAT WILL BE HARDER TO GET NAMES FOR .

ALTHOUGH FOR THE AMATEUR THE NAME IS THE GAME , HE MUST EVENTUALLY LEARN THAT THE NOMENCLATURE IN THE FIELD OF MALACOLOGY IS NEVER COMPLETE , THAT THE NAMES CHANGE FROM TIME TO TIME BECAUSE OF CONTINUAL STUDIES IN THE FIELD , AND THAT SOME OF THE SHELLS HE PICKS UP MAY BE NAMED SOMEWHERE (OR MAY NOT BE) BUT ASKING FOR A NAME MAY RESULT IN ONLY PARTIAL IDENTIFICATION , PERHAPS A GUESS OR A PLACEMENT IN A FAMILY OF SHELLS . THERE IS NOTHING SET OR STABLE ABOUT THIS KIND OF COLLECTING . ONE PROFESSIONAL SAID RECENTLY THAT IF YOU WANTED A SURER THING YOU HAD BETTER TURN TO FOSSILS .

IT WOULD BE JUST AS WELL FOR YOU TO BE CONTENT TO NAME YOUR SHELLS SHELL #1 , SHELL #2 , SHELL #3 , FILLING IN AS YOU PROGRESS IN YOUR KNOWLEDGE AND READING AND CHECKING WITH COLLECTIONS . ONE OF OUR MEMBERS WISTFULLY SAYS SHE WISHES THAT ALL THE SHELLS COULD BE DESCRIBED AND PICTURED IN ONE BOOK . THERE IS A CONSTANT FLOW OF LITERATURE ON SHELLS . IT IS DIFFICULT TO OBTAIN IT ALL , EVEN THE CURRENT MATERIAL . WE DO HAVE A GOOD LIBRARY THAT WILL BE PUT BACK IN WORKING ORDER IN THE MUSEUM OF NATURAL SCIENCE . ONCE YOU BEGIN TO CHECK THROUGH THE BOOKS AND MONOGRAPHS , YOU WILL SOON DISCOVER THAT NAMES HAVE CHANGED AND RECHANGED . IT REALLY WON'T MATTER IF YOU USE AN OLD NAME OR HAVE AN OLD NAME ON YOU SHELL AS LONG AS YOU NOTE THE REFERENCE YOU USED . THE SHELL WILL STILL BE THE SAME SHELL .

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OF GREAT INTEREST IS THE GROUP OF SMALLER SPECIES RESEMBLING T. VERSICOLOR. ONE OF THESE T. TEXANA, IS APPARENTLY RESTRICTED TO THE BAYS BECAUSE ONLY A SINGLE VALVE IN OLD CONDITION WAS DREDGED OFFSHORE AND ALL FRESH MATERIAL WAS COLLECTED ALIVE IN GALVESTON WEST BAY. TYPICAL BAY SPECIES ARE NOT UNCOMMONLY DREDGED OFFSHORE, BUT MOST, IF NOT ALL, OF THIS MATERIAL IS OLD AND WORN AND SHOULD BE CONSIDERED FOSSIL.

NUMEROUS LOTS OF T. VERSICOLOR WERE OBTAINED, CONTAINING MUCH LIVE MATERIAL. THIS SPECIES, OFTEN FOUND IN BEACH DRIFT, APPARENTLY TOLERATES A WIDE RANGE OF CONDITIONS AS IT IS STILL PRESENT ALIVE QUITE FAR OFFSHORE IN WATER SOME 40-45 FATHOMS DEEP. ITS COLOR PATTERN, SHAPE AND SURFACE SCULPTURE DIFFERENTIATE IT IMMEDIATELY FROM ANOTHER CLOSELY RELATED FORM, WHICH IS ALSO ABUNDANTLY PRESENT IN DREDGED MATERIAL. TELLINA SYBARITICA, REPRESENTED BY ALMOST AN EQUAL NUMBER OF LOTS, MANY OF THEM ALIVE, IS CERTAINLY ONE OF THE MOST COMMON SPECIES OF TELLINS IN TEXAS OFFSHORE WATERS. IT LIVES FARTHER OFFSHORE AND HENCE ON THE AVERAGE IN DEEPER WATER THAN T. VERSICOLOR, ALTHOUGH IN MANY SAMPLES VERSI-COLOR AND SYBARITICA OCCURRED TOGETHER, IT CERTAINLY DOES NOT REACH THE INSHORE ZONE BECAUSE NO BEACH MATERIAL IS KNOWN TO ME. A THIRD SPECIES, LESS COMMON BUT STILL WIDESPREAD, IS MIXED IN WITH THESE TWO ABOVE MENTIONED SPECIES. TELLINA PROBRINA, RECENTLY DESCRIBED BY BOSS, MUST BE CONSIDERED A COMMON SHELL IN THE OFFSHORE GALVESTON-FREEPORT AREA. IN THE COLLECTION IT IS REPRESENTED BY NO LESS THAN 30 LOTS, OF WHICH SOME MATERIAL WAS ALIVE. ALSO THIS SPECIES DOES NOT REACH THE INSHORE AREA, WHICH EXPLAINS THAT IT SO LONG ESCAPED RECOGNITION. IT CAN HOWEVER IMMEDIATELY BE SEPARATED FROM BOTH VERSI-COLOR AND SYBARITICA BY ITS MUCH FLATTER FORM, MORE SQUARISH OUTLINE, DIFFERENT SHADE OF PINK COLOR AND ITS SURFACE SCULPTURE.

COMPLETELY MISSING IN OFFSHORE DREDGE SAMPLES WAS T. IRIS. ITS QUITE COMMON OCCURRENCE ON TEXAS BEACHES INDICATES THAT IT LIVES IN THE IMMEDIATE VICINITY OF THE TIDE LINE, WHICH IS CORROBORATED BY THE FACT THAT THE SPECIES CAN BE COLLECTED LIVE DURING LOW TIDE ON THE TIDAL FLATS NEAR THE INLET AREAS AT GALVESTON AND PORT ARANSAS.

MORE INVESTIGATIONS WILL UNDOUBTEDLY PRESENT A MORE COMPLETE PICTURE ABOUT THE DISPERSAL AND RANGES OF THESE SPECIES. TELLINA VESPUCIANA, MENTIONED WITH SOME RESERVATION BY BOSS FROM OFFSHORE WATER NEAR PORT ISABEL, IS NOT PRESENT IN OUR MATERIAL, BUT PROBABLY A FEW OTHER SPECIES OF TELLINA ARE, WHICH I HAVE NOT YET STUDIED SUFFICIENTLY TO REPORT THEM HERE.

TELLIDORA CRISTATA IS A FAIRLY COMMON SHELL IN TEXAS. LIVE MATERIAL HAS BEEN OBTAINED IN VERY SHALLOW WATER, (MUD FLATS SAN LUIS PASS, COLL. BOONE) AND NEAR THE GALVESTON JETTIES (COLL. GEIS), BUT IN THE MUSEUM COLLECTION OF DREDGED OFFSHORE MATERIAL ONLY SINGLE VALVES FROM WIDELY DISPERSED LOCALITIES ARE PRESENT.

THE GENUS STRIGILLA IS ONLY REPRESENTED BY STRIGILLA MIRABILIS. THIS SPECIES LIVES ALSO ONLY IN SHALLOW WATER, FROM THE SHORE LINE TO PERHAPS ABOUT 20 FATHOMS WE HAVE A FAIRLY GOOD SERIES OF MATERIAL, BUT THE SPECIES IS NOT AS COMMON AS T. VERSICOLOR. THE LARGER STRIGILLA GABBI, RARELY COLLECTED ON THE BEACHES OF SOUTH TEXAS IS NOT PRESENT IN THE MUSEUM COLLECTION OF DREDGED MATERIAL.

IN AUGUST I WAS FORTUNATE TO PARTICIPATE IN MY 2ND COLLECTING TRIP ON BOARD THE DESTROYER HAINSWORTH. ON THE EVENING OF AUGUST 7TH, 1969 SHE TOOK TO SEA WITH A LARGE CONTINGENT OF DIVERS TO COLLECT MOLLUSKS FOR THE RAPIDLY GROWING COLLECTION OF MOLLUSKS FOR THE HOUSTON MUSEUM OF NATURAL SCIENCE. A PREVIOUS TRIP IN OCTOBER 1967 WHICH WAS VERY SUCCESSFUL AND YIELDED MUCH MATERIAL UNKNOWN TO THE NORTHWEST GULF OF MEXICO HAS BEEN REPORTED BEFORE IN THIS PUBLICATION.

THE OBJECTIVES FOR THIS TRIP WERE A "LUMP" AT THE MARGIN OF THE CONTINENTAL SHELF, THE FLOWER GARDENS AND STETSON BANK.

THE SAME PRECAUTIONS AS ON THE PREVIOUS TRIP WERE OBSERVED AND MANY OLD ACQUAINTANCES WERE RENEWED. THE WEATHER WAS PERFECT, THE SEA WITH ONLY A GENTLE SWELL, WHICH LATER DIED DOWN ALMOST COMPLETELY.

IT TURNED OUT TO BE NO SIMPLE MATTER TO LOCATE THE HAINSWORTH IN A PRECISE POSITION ABOVE THE ELEVATIONS ON THE SEA BOTTOM. THE FATHOMETER SHOWED THAT THE STRUCTURES WERE EITHER SHAPED LIKE NARROW SPINES OR LIKE SOMEWHAT ELONGATED RIDGES, OR HAD A SHALLOW CREST AT MOST A HUNDRED YARDS OR SO IN DIAMETER. WHEN THE SHIP HAD BECOME STATIONARY USUALLY THE DEPTH CLOSE TO IT WAS TOO DEEP FOR SAFE DIVING BECAUSE ANCHOR DRAG AND SHIFTING WIND OFTEN CAUSED IT TO VEER INTO DEEPER WATER. DURING THE FIRST DAY OF THE TRIP SEVERAL UNSUCCESSFUL ATTEMPTS WERE MADE TO ANCHOR ON TOP OF THE "18 FATHOM" LUMP. THE WEATHER WAS HOT AND THE SUN SHONE BRILLIANTLY SO THAT THE ESTIMATE OF, PLUS OR MINUS, 25 SOFT DRINKS CONSUMED PER HEAD OF THE TOTAL CREW HAS THE RING OF PLAUSIBILITY. FORTUNATELY THE 2ND DAY, SATURDAY, WE GOT FIRMLY ANCHORED OVER A BOTTOM 180 FEET BELOW THE SHIP AND DIVING PROCEEDED. MANY INTERESTING SHELLS WERE BROUGHT UP, MANY OF WHICH WERE ALIVE, AND A LARGE QUANTITY OF BOTTOM DEBRIS WAS SCOOPED INTO SAMPLE BAGS. THIS MATERIAL WILL BE SORTED OUT UNDER A BINOCULAR MICROSCOPE. AMONG THE LARGER LIVE SHELLS SEEN SO FAR ARE SPECIMENS OF A LARGE ORANGE CONE, A SINGLE ASTRAEA LONGISPINA AND REPRESENTATIVES OF SUCH GENERA AS CYMATIUM AND BURSA. LIVE LYROPECTEN NODOSUS, AFTER CLEANING RUBY RED, A YELLOWISH CHLAMYS SENTIS, LIVE TURBO SP. ALL ADDED TO THE EXCITEMENT. THE OPINIONS ABOUT THE TASTE OF LYROPECTEN, WHOSE MUSCLE WAS CONSUMED ON THE SPOT, WERE RATHER DIFFERENT. LATER ONE OF THE CREW MEMBERS DESCRIBED HAROLD GEIS, LLOYD MEISTER, TOM PULLEY AND MYSELF AS A BUNCH OF BOYS HAVING A GREAT CHRISTMAS PARTY EVERYTIME WE BENT OVER THE TUB TO INSPECT A FRESHLY BROUGHT UP BAG OF SHELLS. SPONGES THIS TIME PROVED SOMEWHAT DISSAPPOINTING: LIVE HIATELLA ARCTICA ABOUNDED AND WHAT I HAD NOT REALIZED DURING THE FIRST TRIP ALSO VERMICULARIA IS QUITE ABUNDANT ON AND IN THE SPONGE MASS. UNEXPECTED WAS A SPECIMEN, IMBEDDED IN THE BASE OF A BIG PINKISH SPONGE, OF COLUMBELLA C.F. MERCATORIA, A SPECIES SO FAR NOT YET OBTAINED FOR THE NORTHWEST GULF OF MEXICO.

A DEPTH OF 180 FEET IS TOO DEEP TO SUPPORT THE GROWTH OF REEF FORMING CORAL AND THUS MOST OF THE DEBRIS CONSISTED OF FRAGMENTS OF CALCARIOUS ALGAE AND HEAVILY ENCRUSTED SHELLS. ALTHOUGH QUITE A FEW SPECIES AT THIS LOCATION WERE NEW TO THE COLLECTION IT IS CLEAR THAT THIS "LUMP" HARBORS ESSENTIALLY AN IDENTICAL FAUNA AS THE ONE ENCOUNTERED ON THE "24 FATHOM LUMP" SAMPLED ON OUR PREVIOUS TRIP IN THE SAME NEIGHBORHOOD. IT IS HOWEVER CERTAIN THAT SEVERAL MORE COLLECTING TRIPS WILL BE NECESSARY TO OBTAIN A MORE COMPLETE SAMPLE OF THIS INTERESTING FAUNA WHICH CONTAINS MOSTLY "CARIBBEAN" COMPONENTS. IT IS TOO EARLY TO MAKE A DEFINITE STATE-

MENT HERE BUT AT THIS MOMENT I AM INCLINED TO ASSUME THAT THE FAUNA OF THESE CALCAREOUS LUMPS HAS MORE AFFINITY WITH THAT OF THE YUCATAN PLATFORM THAN WITH THAT OF SOUTHERN FLORIDA.

THE LAST DAY OF THE TRIP WAS DEVOTED TO STETSON BANK. THIS BANK IS PROBABLY ONE OF THE MOST REMARKABLE SPOTS IN THE ENTIRE GULF OF MEXICO. FOR A BETTER UNDERSTANDING OF ITS UNUSUAL MALACOLOGICAL FEATURES I MAY BRIEFLY REVIEW A FEW SALIENT POINTS OF ITS GEOLOGY. AT MANY LOCATIONS BOTH ON-AND-OFF SHORE IN THE NORTHWEST GULF OF MEXICO, SALT IS RISING AT A VERY SLOW RATE FROM NOW DEEPLY BURIED LAYERS OF SALT. THE DRIVING FORCE IS THE DIFFERENCE IN SPECIFIC WEIGHT BETWEEN SALT AND ITS SURROUNDING ROCK MATRIX, SO THAT THE SALT ASCENDS LIKE A DROP OF OIL WOULD DO IN A BEAKER OF WATER. ONLY ITS VISCOSITY IS MUCH HIGHER SO THAT THE RATE OF THE PROCESS IS MANY ORDERS OF MAGNITUDE SLOWER, BUT OVER GEOLOGIC TIME NEVERTHELESS LARGE DISTURBANCES IN THE ORIGINALLY FLAT UPPER SURFACE OF THE SALT HAVE FORMED AND IN SOME INSTANCES VERTICAL PILLARS OF SALT DEVELOPED. SOME OF THESE HAVE EVEN RAFTED PORTIONS OF OLDER ROCKS UPWARDS WITH THEM SO THAT IN THESE CASES OLDER ROCKS CAN BE FOUND TO OUTCROP, SURROUNDED BY YOUNGER TYPES OF FORMATIONS. THIS IS WHAT HAPPENED AT STETSON BANK. THE SALT WHICH IS STILL BELOW THE SEA BOTTOM HAS PUSHED UP OLDER MIOCENE SHALE FROM GREAT DEPTH, SO THAT THE DIVERS ON STETSON BANK FIND A WILD SEASCAPE WITH LARGE PLATES OF ROCK TUMBLED ON ONE ANOTHER AT ALL POSSIBLE POSITIONS. THE MIOCENE SHALES PROVIDE A HABITAT QUITE UNLIKE ANYTHING ELSE IN THE NEIGHBORHOOD AND FURNISH AN EXCELLENT HIDING PLACE FOR GASTROPODS AND A BURROWING MEDIUM FOR BIVALVES AND OTHER ANIMALS WHO PREFER THIS MODE OF LIFE.

ALL PLATES OF SHALE ARE RIDDED WITH THE USUALLY QUITE RARE JOUANNETIA QUILLINGI TURNER, BUT STILL IT IS NOT EASY TO COLLECT PERFECT SPECIMENS, BECAUSE OF THE FRAGILITY AND EXTREMELY TIGHT FIT OF THESE ANIMALS IN THE SHALE. SOME OF THE RESULTS OF THE DIVING WERE TO ME QUITE UNEXPECTED. TOM PULLEY, WHO LATER CONFESSED THAT THE MUSEUM HAS A FRAGMENT OF A SHELL FROM THE SAME LOCATION, ASKED ME WHAT I WOULD DO IF ONE OF THE DIVERS BROUGHT UP A LARGE SPECIMEN OF CHARONIA VARIEGATA. WELL, WHAT WOULD YOU DO IF YOU ENCOUNTERED A BEAR IN THE EAST TEXAS WOODS? HOWEVER A GOOD SIZED CHARONIA VARIEGATA CAME UP AND WITH IT MANY OTHER SHELLS NOT SEEN BEFORE IN THIS PART OF THE WORLD. ESPECIALLY THE FAMILY CYMATIIDAE SEEMS TO BE WELL REPRESENTED AT THIS LOCATION: C. PILEARE, NICOBARICUM, MURICINUM, RUBECULUM, CARIBBAEUM AND PARTHENOPEUM CAME UP, SEVERAL ALIVE. ASTRAEA AMERICANA AND CALLIOSTOMA JUJUBINUM WERE COMMON AND AGAIN SEVERAL LARGE SPECIMENS OF THE BEAUTIFUL RED COME (SOME LARGER THAN 3 INCHES) WERE TAKEN. THE DIVERS HOWEVER GOT MOST EXCITED ABOUT THE MANY SPECIMENS OF CYPRAEA CERVUS AND (OR?) CYPRAEA ZEBRA WHICH WERE TAKEN ALIVE. THESE ARE NOT EASILY COLLECTED WHEN ENVELOPED BY THEIR BLACK MANTLE AND LIVING ON DARK BLUE BLACK SHALE. ALMOST EQUALLY COMMON WERE THE MUCH SMALLER CYPRAEA SPURCA ACICULARIS, WHICH WHEN ALIVE HAS AN EXTREMELY BEAUTIFUL PAPILLOSE MANTLE OF SOFT PINK COLOR. IT IS INTERESTING TO NOTE THAT A JUVENILE CYPRAEA CERVUS? OF SOFT YELLOW ORANGE COLOR WAS TAKEN AT THE 18 FATHOM LUMP, BUT SINCE IT IS A DEAD SHELL IT IS NOT CERTAIN WHETHER IT ACQUIRED ITS COLOR FROM BEING BURIED, AS ABBOTT AND WARMKE SUGGEST, OR WHETHER THE COLOR IS NATURAL. THE LATTER IS PROBABLY THE CASE, BECAUSE AN OLD SHELL WOULD BE HEAVILY ENCRUSTED, AND THIS ONE LOOKS PERFECTLY FRESH.

ONE OF THE MOST COMMON OF THE LARGER GASTROPODS AT STETSON IS LATIRUS INFUNDIBULUM. A LARGE NUMBER OF LIVE SPECIMENS IS COVERED BY A THICK LAYER OF WHITE GRAY ENCRUSTATION EXCEPT FOR THE LAST BODY WHORL, WHICH IS CLEAN AND HAS THE USUAL BROWN COLOR. THESE SHELLS DO NOT CLEAN WELL BECAUSE REMOVAL OF THE EN-

CRUSTATION UNCOVERS A BADLY CORRODED SHELL SURFACE. MANY OF THE SPECIMENS POSSESS A LARGE AND WIDE FUNNEL SHAPED UMBILICUS. A NUMBER OF SMALLER GASTROPODS WAS OBSERVED ALIVE BETWEEN THE SHALE RUBBLE WITH WHICH SEVERAL BURLAP BAGS WERE FILLED. SPECIES OF MITRA, AMONG WHICH M. NODULOSA AND A SMALL SPECIES UNKNOWN TO ME, DRUPA NODULOSA, RISOMUREX SP., AND COUNTLESS CORALLIOPHILA ABERRANS, WHOSE SHELLS ARE NOT WHITE, BUT GRAYISH. POSSIBLY THIS IS A RESULT OF THE SUBSTRATUM ON WHICH THESE ANIMALS LIVE. THE SINGLE SPECIMEN OF CORALLIOPHILA CARIBAEA OBSERVED HOWEVER IS WHITE. FURTHER MAY BE MENTIONED: DRUPA NODULOSA (ALIVE), DIODORA CAYENENSIS (ALIVE), AND SEVERAL SMALLER FISSURELLIDS, TURRIDS, AND OTHER FORMS NOT YET LOOKED AT IN DETAIL. PHALIUM CICATRICOSUM (DEAD), PROBABLY ONLY A SMALL, SMOOTH, HIGH SPIRED FORM OF P. GRANULATUM CAME AS SOMEWHAT OF A SURPRISE AND A SPECIMEN OF CYPRACASSIS TESTICULUS (DEAD) CONFIRMED EARLIER REPORTS OF THE OCCURRENCE OF THIS SPECIES IN THE NORTHWEST GULF OF MEXICO. A FEW RARE FRAGMENTS AND SHELLS ARE KNOWN FROM THE TEXAS BEACH. MUREX FULVESCENS WAS COMMON AND A LARGE SHELL OF UMBRACULUM PLICATULUM (2 INCHES IN DIAMETER) CAME TO THE SURFACE.

I HAVE NO DOUBT THAT MICROSCOPIC INVESTIGATIONS OF THE SMALLER COMPONENTS OF THE STETSON FAUNA WILL REVEAL MANY INTERESTING SMALL SPECIES. FROM THE VERY CURSORY VISUAL INSPECTION DURING THE PRELIMINARY SORTING OF THE LARGER SPECIES IT IS APPARENT THAT THE STETSON BANK FAUNA IS QUITE DIFFERENT FROM THAT OF THE FLOWER GARDENS.

I MAY CONCLUDE BY EXPRESSING MY THANKS TO ALL NAVY PERSONNEL WHO TOOK PART IN THIS OPERATION AND MADE IT SUCH A GREAT SUCCESS, AND ALL DIVERS WHO BY THEIR EFFORTS, CONTRIBUTED TO A BETTER KNOWLEDGE OF THE MOLLUSCAN FAUNA OF THE GULF OF MEXICO.

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#### THREATENED CORAL REEFS OF THE PACIFIC

BY TOM KISTER

THE SCIENTIFIC AND TRADE LITERATURE HAVE BEEN FEATURING ARTICLES ABOUT ACANTHASTER PLANCI, COMMONLY CALLED THE "CROWN OF THORNS" STARFISH. THE "CROWN OF THORNS" FEEDS ON LIVING CORAL AND HAS DESTROYED HUNDREDS OF SQUARE MILES OF CORAL REEF. THE 16-ARMED ADULT MEASURES UP TO TWO FEET IN DIAMETER AND CAN CONSUME A 50-YEAR GROWTH OF CORAL IN A SINGLE DAY. THE GREAT BARRIER REEF OFF AUSTRALIA AND REEFS NEAR GUAM HAVE SUFFERED TREMENDOUS LOSSES. SCATTERED REPORTS INDICATE REEFS THROUGHOUT MOST OF THE PACIFIC ISLANDS ARE THREATENED.

THE CAUSE OF THIS EVIDENT IMBALANCE IN NATURE HAS NOT BEEN DETERMINED, BUT ONE REASON GIVEN IS THE REMOVAL OF GASTROPODS, WHICH MAY BE A NATURAL ENEMY OF THE STARFISH IN THAT THEY CONSUME THE LARVAE AND THE STARFISH.

SINCE 1968 IT HAS BEEN ILLEGAL TO COLLECT A SHELLER'S FAVORITE, CHARONIA TRITONIS L., TRITONS TRUMPET, OFF THE GREAT BARRIER REEF. THE TRITON TRUMPET IS IMMUNE TO THE POISON OF THE STARFISH, AND "SPITS OUT" THE SPINES AFTER DEVOURING IT. MOST OF THE TRITON TRUMPET SHELLS NOT COME FROM ZANZIBAR AND BRING A MUCH HIGHER PRICE THAN IN FORMER YEARS.

RARE SHELLS BY S. PETER S. DANCE. 128 PP. 24 COLOR PLATES, \$17, BERKELEY, AND LOS ANGELES, UNIVERSITY OF CALIFORNIA PRESS, 1969.

THIS IS A BOOK ABOUT "THE PERSONALITY AND HISTORY" OF 50 SHELLS.

THE TITLE "RARE SHELLS" NEEDS A BIT OF COMMENT. TWO OTHER ADJECTIVES, NAMELY "HISTORICAL" AND "FAMOUS", IN PLACE OF OR IN ADDITION TO THE ONE USED WOULD HAVE PERMITTED A MORE ACCURATE OR MORE COMPLETE INTERPRETATION OF THE CONTENTS OF THIS BOOK.

INCLUDED IN THE BOOK ARE THE SHELLS THAT BROUGHT FAME TO THE SPECIES AND ALSO, IN MOST CASES, CREATED INTERESTING AND NOTABLE HISTORIES AS INDIVIDUAL SPECIMENS. THESE ARE THE SHELLS THAT AT ONE TIME OR ANOTHER WERE CONSIDERED TO BE THE RARITIES AND WERE MUCH IN DEMAND BY THE SHELL COLLECTORS. IN PARTICULAR, THE AUTHOR HAS SELECTED THOSE SPECIES THAT WERE SEEMINGLY "LOST" FOR A PERIOD OF TIME AND WERE LATER "REFOUND". STROMBUS TAURUS IS AN EXAMPLE. IN FACT, IT IS STATED THAT THESE TYPES OF SHELLS ARE "VIRTUALLY THE BOOK'S RAISON D'ETRE."

THE INTRODUCTORY SECTION REVIEWS THE HISTORY OF CONCHOLOGY PARTICULARLY AS IT INVOLVES THE SELLING AND BUYING OF RARE SHELLS AMONG THE COLLECTORS. THIS SECTION, IN A SENSE, PROVIDES A SYNOPSIS OF THE MATERIAL COVERED IN GREATER DETAIL IN DANCE'S PREVIOUS BOOK "SHELL COLLECTING". THE USE, HOWEVER, OF A MORE INTERPRETIVE STYLE OF PRESENTATION HERE GIVES THE READER A BROAD PERSPECTIVE OF THE CURRENTS OF SHELL COLLECTING ACTIVITIES OVER THE YEARS.

ONLY A MINIMUM OF SCIENTIFIC INFORMATION IS OUTLINED FOR EACH SHELL BUT THE DATA GIVEN ARE PERTINENTLY ADEQUATE. EACH SHELL IS IDENTIFIED BY ITS "CURRENTLY ACCEPTED" NAME. THE ORIGINAL AND/OR OTHER IMPORTANT REFERENCES ARE NOTED. DIMENSIONS OF THE PHOTOGRAPHED SPECIMEN AS WELL AS THE LOCALITY OF COLLECTION ARE GIVEN. THE RANGE OF DISTRIBUTION IS INDICATED. ONE VIEW OF EACH OF THE 50 SPECIMENS IS SHOWN IN APPROXIMATELY ITS NATURAL SIZE BY A CLEARLY REPRODUCED PHOTOGRAPH. THERE ARE 24 FULL PAGE PLATES IN THE BOOK. THE SHELLS ARE BY NO MEANS NEWCOMERS; ALL BUT THREE WERE FIRST DESCRIBED BEFORE 1900.

IN THESE PAGES, ONE MEETS INDEED A GLITTERING COMPANY OF CELEBRITIES AMONG THE SHELLS. TWELVE OF THE 50 PICTURED SPECIMENS ARE HOLOTYPE, THREE OTHERS ARE SYNTYPES, AND STILL ANOTHER IS A PARATYPE. MOST REMAIN IN MUSEUMS AS BRIGHT SPOTS OF FAMOUS NAMED COLLECTIONS SUCH AS THOSE OF MRS. DE BURGH, MELVILL-TOMLIN, J. SAUL, H. CUMING, R. P. SCASE, W. J. BRODERIP AND OTHERS. FIVE AMONG THE FIFTY ARE BELIEVED TO BE WORLD'S RECORDS FOR SIZE. THIS INCLUDES THE CYPRAEA AURANTIUM FROM THE BRITISH MUSEUM WHICH HAS DIMENSIONS OF 11.40 x 7.20 CM.

HERE IS A UNIQUELY ATTRACTIVE AND ENJOYABLE BOOK BUT THE PURCHASER SHOULD BE QUITE AWARE OF THE INTENT, FORMAT AND CONTENTS OF THE PUBLICATION. OTHERWISE, HE WOULD EXPERIENCE A VAGUE FEELING THAT SOMETHING MORE SHOULD HAVE BEEN INCLUDED.

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# CONCHOLOGIST

SOUTH PADRE ISLAND SHELL FAIR  
MAY 31 1969  
NOVEMBER 1969  
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Vol. 6, No. 4

## NOTES & NEWS

### NEXT MEETING

OUR NEXT MEETING WILL BE ANNOUNCED IN OUR JANUARY NUMBER. DURING DECEMBER WE DO NOT HAVE A MEETING.

### REPORT OCTOBER MEETING

THE OFFICE OF SECRETARY-TREASURER WHICH WAS HELD BY MRS. CLAIRIE VAN ERP WAS, ON HER REQUEST, SPLIT INTO SEPARATE OFFICES. MRS. JEAN DASHIELL WAS ELECTED SECRETARY. DR. WAT SUTOW GAVE A MOST INTERESTING ACCOUNT OF JAPANESE RAPIDAE, ILLUSTRATED BY BEAUTIFUL COLORED SLIDES MADE OF SPECIMENS IN HIS COLLECTION.

### FIELD TRIP REPORT

BY LLOYD MEISTER

THE TRIP WAS, IN MY OPINION, VERY SUCCESSFUL, AT LEAST AS FAR AS ATTENDANCE WAS CONCERNED. THERE WERE ABOUT 25 PEOPLE. THOSE WHO WISHED DUG CYRTOPLEURA COSTATA (ANGLE WINGS), WHICH IS QUITE A CHORE AFTER THE FIRST ONE. I THINK THAT MOST EVERYONE FOUND ENOUGH TO KEEP THEM HAPPY TRYING TO IDENTIFY THE SPECIMENS.

### CANOE TRIP ON THE GUADELUPE RIVER

BY H. ODÉ

ON THE SAME DAY AS THE FIELD TRIP WAS HELD, WHICH I WAS SORRY TO MISS, I WENT SHELLING ON THE GUADELUPE RIVER SOUTH OF CUERO. MANY TEXAS RIVERS AND STREAMS POSSESS AN INTERESTING FAUNA OF FRESH WATER CLAMS. ONE OF THE MOST DELIGHTFUL WAYS TO COLLECT THESE SHELLS IS TO MAKE A CANOE TRIP DOWN THE RIVER WHERE RAPIDS, UNDERWATER OBSTACLES AND OVERHANGING TREES ADD TO THE EXCITEMENT OF THE HUNT. THE GUADELUPE RIVER BELOW CUERO IS NOT ONLY VERY SCENIC, BUT ALSO RICH IN BI-VALVES. ON ITS NUMEROUS GRAVEL BANKS LARGE NUMBERS OF "CLAMS" CAN BE COLLECTED. A LARGE PLASTIC BAG OF THEM, CONTAINING MANY SPECIES WHICH SURVIVED SEVERAL HECTIC MOMENTS DURING "SHOOTING" THE RAPIDS, WAS THE RESULT OF THE TRIP.

PROGRESSIVE INDUSTRIALIZATION, WIDESPREAD USE OF PESTICIDES AND THE BUILDING OF DAMS THREATEN THIS PART OF THE TEXAS FAUNA. IN MANY STATES THE FRESH WATER FAUNA HAS BEEN RUINED BY THESE CAUSES. THE FATE OF MUCH BEAUTIFUL TEXAS SCENERY, AND THE INTERESTING FAUNA IN IT, IS BY NO MEANS SECURE. TOO FEW COLLECTORS HAVE STUDIED THIS FAUNA, WHICH IS IN DANGER TO DISAPPEAR BEFORE IT EVER HAS BECOME WELL KNOWN.

### SOUTH PADRE ISLAND SHELL FAIR

SOUTH PADRE ISLAND SHELL CLUB HAS SCHEDULED ITS 10TH ANNUAL SHELL FAIR ON MARCH 1, 1970, WITH A SPECIAL GROUP OF OUTSTANDING JUDGES SELECTED. SENIOR JUDGE WILL BE DR. R. TUCKER ABBOTT WHO NOW HOLDS THE DU PONT CHAIR OF MALACOLOGY IN THE NEW DELAWARE MUSEUM OF NATURAL HISTORY. SERVING WITH HIM WILL BE DR. THOMAS E. PULLEY, DR. W. W. SUTOW, AND PAUL MCGEE, ABOUT WHOM BETTY ALLEN WRITES IN THE ANNOUNCEMENT AS BEING "SOME OF OUR BEST FRIENDS FROM HOUSTON." BETTY IS

..CONTINUED ON PAGE 39

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

FAMILY ACLIDIDAE. THIS FAMILY OF MINUTE GASTROPODS HAS BEEN MONOGRAPHED BY BARTSCH IN 1947 (SMITH MISCELL. COLL. VOL. 106, 20). ALTHOUGH IT APPEARS POSSIBLE TO US THAT THE GENUS HENRYA WHICH BARTSCH PLACED WITHIN THIS GROUP, DOES NOT BELONG THERE, WE WILL RETAIN IT IN THE ACLIDIDAE. NONE OF THE SPECIES WHICH WE REPORT HERE HAVE BEEN REPORTED IN THE PAST FOR TEXAS. AT LEAST THREE AND POSSIBLY MORE SPECIES ARE KNOWN FROM THE TEXAS BEACHES. IN THE OFFSHORE WATERS SEVERAL MORE SPECIES HAVE BEEN DREDGED.

GRAPHIS UNDERWOODAE BARTSCH, 1947. THIS VERY BEAUTIFUL NEEDLE SHAPED MINUTE GASTROPOD RESEMBLES A SMALL TURBONILLA, BUT ITS ELEGANT ORNAMENTATION AND DEEP SUTURE READILY SET IT APART. THE FIGURE IN BARTSCH'S MONOGRAPH DOES HARDLY JUSTICE TO THIS EXQUISITE SPECIES. ONLY A FEW SPECIMENS HAVE SO FAR BEEN COLLECTED IN TEXAS: A BROKEN ONE AT SAN LUIS PASS, (COLL. ODE) A PERFECT DEAD SPECIMEN AT PORT ARANSAS (COLL. ODE), AND SOME DEAD AND A SINGLE LIVE SHELL OBTAINED FROM ALGAL SCRAPINGS OF A ROCK AT PORT ISABEL (COLL. SPEERS).

FIGURED IN: SMITHSONIAN MISCELL. COLL. VOL. 106, 20.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, PORT ARANSAS, PORT ISABEL.

HENRYA MORRISONI BARTSCH 1947. AMONG THE SEVERAL SLIGHTLY DIFFERENT LOOKING FORMS OF THIS GENUS, H. MORRISONI IS THE SMALLEST BUT ALSO THE MOST RECTANGULAR IN OUTLINE. IT IS AS YET IMPOSSIBLE TO SAY WHETHER THIS SPECIES AND THE TWO NEXT ONES ARE TRULY SPECIFICALLY SEPARATE. FOR TEXAS SO FAR H. MORRISONI IS KNOWN FROM TWO SPECIMENS IN THE SPEERS COLLECTION, OBTAINED IN THE BAY AREA AT PORT ARANSAS.

FIGURED IN: SMITHSONIAN MISCELL. COLL., VOL. 106, 20.

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS

HENRYA GOLDMANI BARTSCH 1947. THE BULK OF THE MATERIAL ON HENRYA APPEARS TO BE MOST CLOSELY RELATED TO H. GOLDMANI WHICH WAS DESCRIBED FROM YUCATAN. IT IS WELL KNOWN THAT MANY OF THE SMALLER SPECIES LIVING IN THE TEXAS BAYS RANGE FAR SOUTH INTO MEXICO. ALSO IN THIS CASE A CONTINUOUS RANGE ALONG THE WESTERN COAST OF THE GULF OF MEXICO IS INDICATED. THIS SPECIES IS CHARACTERIZED BY A SLIGHTLY LARGER LAST WHORL AND LESS DEEP SUTURE THAN IS H. HENRYI.



IT IS QUITE POSSIBLE HOWEVER THAT , IN VIEW OF THE VARIABILITY DISPLAYED IN OUR MATERIAL , H. MORRISONI , H. GOLDMANI , AND H. HENRYI ARE MERELY VARIANTS OF A WIDELY DISTRIBUTED SPECIES .

FIGURED IN: SMITHSONIAN MISCELL. COLL. VOL. 106 , 20

PREVIOUS REFERENCES: TEXAS CONCHOLOGIST , VOL.

LOCALITIES: IN SMALL NUMBERS ALONG THE ENTIRE TEXAS COAST .

HENRYI HENRYI BARTSCH 1947. THE PHOTOGRAPH OF THIS SPECIES RESEMBLES SO MUCH THAT OF THE PREVIOUS ONE (SLIGHTLY MORE REGULAR IN OUTLINE , SOMEWHAT DEEPER SUTURE) THAT WE SUSPECT THAT IT IS IDENTICAL WITH H. GOLDMANI. IN MOST LOTS OF GOLDMANI A NUMBER OF SPECIMENS WILL BE CLOSE TO H. HENRYI. THIS FORM HAS BEEN COLLECTED AT GALVESTON (ODÉ) , AND AT PORT ARANSAS (SPEERS , ODÉ).

FIGURED IN: SMITHSONIAN MISCELL. COLL. VOL. 106 , 20.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON , PORT ARANSAS

HENRYI SP. (UNDESCRIBED). ANOTHER , DEFINITELY SEPARATE SPECIES HAS BEEN COLLECTED AT GALVESTON AND PORT ARANSAS. ITS WHORLS ARE CLEARLY SHOULDERED. THE TWO AVAILABLE SPECIMENS , OF WHICH ONE IS UNFORTUNATELY RATHER WORN , BOTH SHOW STRONG COSTAE , THUS RESEMBLING A MINUTE TRUNCATELLA BEFORE THE UPPER WHORLS ARE SHED. IN ALL PROBABILITY THE MINUTE SNAILS OF THE GENUS HENRYA ARE CLOSELY ALLIED WITH TRUNCATELLA.

FIGURED IN: NO FIGURE AVAILABLE .

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON , PORT ARANSAS

REMARKS: OFFSHORE GALVESTON AND FREEPORT SEVERAL OTHER SPECIES WERE DREDGED. ONLY A LIMITED NUMBER OF THESE COULD BE IDENTIFIED WITH THE HELP OF BARTSCH'S MONOGRAPH. THE GENERA HEMIACLIS (SEVERAL SPECIES) AND COSTACLIS (1 SPECIES) ARE PRESENT. OF THE TWO SPECIES OF SCHWENGELIA ONE COULD BE IDENTIFIED AS S. FLORIDANA BARTSCH 1911 , THE OTHER APPEARS TO BE NEW. THE ALGAL REEF FRINGING THE OUTER SHELF YIELDED A SPECIMEN OF BERMUDAELIS BERMUDENSIS BARTSCH. LIVE SPECIMENS OF AN HENRYA SPECIES WERE COLLECTED BY MRS. C. BOONE ON THE MUDFLATS NEAR ARANSAS PASS .

#### FAMILY HYDROBIIDAE

THIS LARGE WORLD WIDE FAMILY HAS SEVERAL FORMS IN TEXAS WHICH , ALTHOUGH FOUND ON THE BEACHES , CAN HARDLY BE CLASSIFIED AS MARINE SHELLS . THEY REACH THE BEACHES AFTER TRANSPORT BY THE RIVERS FROM THEIR FRESHWATER HABITATS . ONLY A SMALL NUMBER LIVE IN BRACKISH WATER AND NONE IN THE OPEN SEA. IN TEXAS THE GENERA LITTORIDINA , VIOSCALBA AND ASSIMINEA .

LITTORIDINA SPHINCTOSTOMA ABBOTT AND LADD 1951. THIS LITTLE GASTROPOD IS COMMONLY FOUND IN BEACH DRIFT ON THE BEACHES NEAR THE MAIN PASSES OF THE TEXAS COAST. THE SPECIES IS CHARACTERIZED BY THE PECULIARLY ASKEW POSITION OF THE MOUTH WHEN MATURE. LIVES IN BRACKISH PART OF THE TEXAS COASTAL BAYS. FIGURED IN: TEXAS CONCHOLOGIST , VOL. 5 , P. 51 .

PREVIOUS REFERENCES FOR TEXAS: SEE TEXAS CONCHOLOGIST , VOL. 5 , P. 51-52.

LOCALITIES: FOUND IN DRIFT ALONG THE ENTIRE TEXAS COAST .

TO BE CONTINUED . . .

ODOSTOMIA SEMINUDA C. B. ADAMS 1839. THIS INTERESTING LITTLE SHELL HAS BEEN COLLECTED AT MANY SPOTS ALONG THE TEXAS COAST. IT BELONGS TO THE SAME GROUP AS THE MORE COMMON ODOSTOMIA IMPRESSA AND THE SOMEWHAT RARER O. BUSHIANA. ALL THREE SPECIES ARE CHARACTERIZED BY A HEAVY CHALKY SHELL AND A WELL DEVELOPED COLUMELLAR TOOTH. IT WOULD BE PREFERABLE TO DESIGNATE THESE SHELLS BY THE GENERIC NAME MENESTHO, WHICH SHOULD BE USED AS A FULL GENUS. IN MY OPINION THE GENERIC NAME CHRYSALLIDA WHICH IS USED FOR THIS SPECIES AND RELATED FORMS HAVING STRONGLY RETICULATED SCULPTURE DESERVES AT BEST SUBGENERIC RANK. STRUCTURALLY M. IMPRESSA AND M. SEMINUDA ARE SO SIMILAR THAT THE SMALL EXTERNAL DIFFERENCES IN SCULPTURE DO NOT JUSTIFY THE USE OF CHRYSALLIDA AS A FULL GENERIC NAME. THE SMALL ODOSTOMIA DIANTHOPHILA HOWEVER IS DIFFERENT AND DOES NOT BELONG WITH THIS GROUP. THE GENERIC NAME ODOSTOMIA SHOULD BE USED FOR SEVERAL SMOOTH FORMS, WHICH CAN BE FOUND ON MOST AMERICAN BEACHES.

IN SPITE OF ITS WIDESPREAD OCCURRENCE THE SPECIES HAS BUT SELDOM BEEN REPORTED FOR TEXAS. IT LIVES IN THE BAYS TOGETHER WITH O. IMPRESSA AND FEEDS UPON THE COMMON BAY OYSTER. IN GALVESTON BAY LIVE MATERIAL HAS BEEN RARELY COLLECTED, BUT FURTHER SOUTH THE SPECIES IS OFTEN FOUND ALIVE. THE REPORTS ARE AS FOLLOWS

- 1953 REFERENCE 12; REPORTED FROM 5 LOCATIONS OFF EAST TEXAS (40-46 FT.).
- 1956 REFERENCE 18; REPORTED DEAD FROM BAKER BANK.
- 1958 MOORE, D. R., NAUTILUS, VOL. 74 (4), P. 124-128. ONE SPECIMEN FROM BEACHDRIFT AT PORT ARANSAS.
- 1960 REFERENCE 19 LISTED
- 1967 LISTED BY DR. H. W. HARRY IN A PRELIMINARY REPORT FOR GALVESTON.



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MANY INTERESTING OBSERVATIONS CAN BE MADE FOLLOWING THE VARIATION OF SHAPE OF GASTROPOD SHELLS AND BIVALVES DURING THEIR GROWTH FROM NUCLEAR SHELL TO FULL-GROWN MATURE SPECIMENS. IT IS OFTEN TAKEN FOR GRANTED THAT THE MATURE INDIVIDUALS ARE NOTHING MORE THAN "BLOWN UP" REPLICAS OF THE SAME SPECIES IN THE JUVENILE STAGE. THE PECULIAR MODE OF GROWING IN A SPIRAL, EXHIBITED BY MOST GASTROPODS, HAS UNDOUBTEDLY CONTRIBUTED TO THIS OFTEN ERRONEOUS IDEA. LIKewise OFTEN CONSIDERABLE DIFFERENCES EXIST IN THE FORM AND SHAPE BETWEEN JUVENILE AND MATURE SPECIMENS OF BIVALVES. THAT SUCH DIFFERENCES ARE NOT ALWAYS EASILY RECOGNIZED IS SHOWN BY THE NUMBER OF DESCRIPTIONS OF "NEW SPECIES", WHICH LATER TURNED OUT TO BE JUVENILE STAGES OF WELL KNOWN MOLLUSKS. IN WHAT FOLLOWS WE WILL DISCUSS A FEW CASES OF THESE CONFUSIONS, WHICH HAVE COME TO OUR ATTENTION.

FORTUNATELY MOST MOLLUSKS EVEN IN THEIR JUVENILE STAGES ALREADY RESEMBLE THE FULLY MATURE FORM. ANYONE WHO HAS TAKEN THE TROUBLE TO REMOVE THE "BROOD" FROM AN EGGCASE OF BUSYCON CONTRARIUM WILL HAVE RECOGNIZED THE SHAPE OF THE MATURE SHELL IN THE TINY AND RATHER COARSE JUVENILE SHELL. SIMILARLY JUVENILE POLINICES DUPLICATUS, TECTONATICA PUSILLA, ODOSTOMIAS ETC. ALREADY REFLECT RATHER PRECISELY THE MATURE SHAPES. MORE DIFFICULT TO RECOGNIZE ARE JUVENILE OLIVELLAS, SOME TURBONILLAS AND SEVERAL OTHER GENERA, BUT EVEN HERE A LITTLE EXPERIENCE WILL SHOW, IF NOT THE SPECIES, AT LEAST THE GENUS THE SHELL BELONGS TO. THE VALVES OF BIVALVES ARE, IN THEIR LARVAL STAGES, OFTEN QUITE DIFFERENT IN SHAPE AND DENTITION FROM THE FULL GROWN VALVES OF THE SPECIES. WE SHALL NOT DISCUSS THOSE HERE BECAUSE THE GENERAL COLLECTOR WILL NEVER SEE THEM. HOWEVER SOME SPECIES WITH A RATHER LARGE PRODISSOCONCH MAY CAUSE SOME CONFUSION. FOR A LONG TIME I WAS PUZZLED BY A GLOBOSE, GLASSY WHITE BIVALVE, TRIANGULAR IN SHAPE, WITHOUT ANY SURFACE SCULPTURE, WHICH OCCURS COMMONLY IN SOME DREDGE SAMPLES FROM THE TEXAS SHELF AREA. ALL OF THEM WERE DOUBLETS AND THEIR MINUTE SIZE (1 MM) MADE IT IMPOSSIBLE TO PRY THEM APART. THE RIDDLE WAS SOLVED ONE DAY WHEN A SPECIMEN OF ANOMIA SIMPLEX WAS EXAMINED UNDER THE MICROSCOPE. PERCHED ON TOP OF THIS IRREGULAR WAVY SHELL WAS THE SAME PECULIAR SHELL, OF QUITE DIFFERENT OUTLINE; THEY ARE THE PRODISSOCONCHS OF THIS SPECIES. SIMILARLY THE EARLY SHELL OF ECHINOCHAMA IS QUITE SMOOTH, REGULARLY HINGED AND, UNTIL IT STARTS GROWING IN THE PECULIAR WAY BY TWISTING IN A SPIRAL, IT DOES NOT HAVE THE SPINOSE CHARACTERISTICS OF THE SPECIES.

NOT ONLY DREDGED MATERIAL BUT ALSO THE BEACH PROVIDES MANY EXAMPLES OF DIFFICULT TO RECOGNIZE JUVENILE SHELLS. THE COMMON THAIS HAEMOSTOMA - THE PRECISE RACE IS HERE OF NO IMPORTANCE - IS AN INTERESTING ONE. THE NUCLEAR SHELL OF THAIS IS REMARKABLY DIFFERENT FROM THE COARSE AND HEAVY MATURE SHELLS WHICH ARE EASILY COLLECTED ALONG THE BEACH. IN FACT THEY ARE SO DIFFERENT THAT THE EARLY NATURALISTS ERECTED A SPECIAL GENUS FOR THESE JUVENILE MURICIDS AND CALLED IT SINUSIGERA. FOR THIS REASON ONE SPEAKS OF THE SINUSIGERA STAGE. FOR THAIS THIS STAGE IS QUITE CHARACTERISTIC. THE SMALL SHELL IS SMOOTH AND SHINY AND ITS LIP HAS TWO LITTLE PROJECTIONS. IMMEDIATELY AFTER GROWING STARTS THE NEW SHELL EXTERIOR IS ROUGH AND QUITE DISTINCT FROM THE EXTERIOR OF THE NUCLEAR WHORL. OCCASIONALLY, OFTEN IN WINTERTIME, THE SMALL SINUSIGERA STAGE THAIS SHELLS ARE ABUNDANT IN DRIFT ON THE BEACH AT GALVESTON. ALSO FOR STILL LARGER SHELLS CONFUSION CAN ARISE. NOT SO LONG AGO CLENCH AND TURNER DESCRIBED MUREX (POIRERIA) BURRYI FROM FLORIDA. THIS PARTICULAR SHELL CAN BE DREDGED QUITE COMMONLY OFF THE TEXAS COAST, BUT IS NOTHING ELSE THAN A RELATIVELY EARLY STAGE OF MUREX FULVESCENS, A FACT ALREADY NOTED BY ABBOTT. IT DIFFERS BY ITS LESS EXTENSIVE

ORNAMENTATION AND SOMEWHAT SLENDER APPEARANCE FROM THE LARGER MATURE SHELLS OF M. FULVESCENS. IN THIS CASE IT IS PROBABLE THAT THE EYE PLAYS A TRICK UPON THE OBSERVER BECAUSE IN ALL PROBABILITY THE SAME RATIO IN DIMENSIONS APPEARS SOMEWHAT DIFFERENT TO THE OBSERVER BECAUSE OF THE SIZE EFFECT.

WHILE THE SHELLS OF M. FULVESCENS ARE NOT TOO VARIABLE IN RELATIVE DIMENSIONS DURING THEIR GROWTH. THERE ARE MANY GASTROPODS IN WHICH THE FULLY MATURE STAGE IS CHARACTERIZED BY A COMPLETELY DIFFERENT SHAPE. SPECIES WHICH DEVELOP FLARING LIPS (STROMBUS GIGAS), CONSTRICTIONS OR LOOSE PART OF THEIR EARLY WHORLS ARE ALL EXAMPLES OF SUCH SPECIES. FOR THE LATTER GROUP TRUNCATELLA PULCHELLA MAY BE MENTIONED. SOMETIMES ONE MAY FIND A COLONY OF LIVE SHELLS, LIVING ON ROTTING SEA WEED OR OTHER DEBRIS IN THE PORT ARANSAS AREA. THE JUVENILE SHELLS ARE ALL SLENDER, CONICALLY SHAPED CREATURES, WHOSE APICAL ANGLE IS SMALL. THE FULL GROWN SPECIMENS HOWEVER ASSUME A MORE CYLINDRICAL APPEARANCE BECAUSE THE EARLY WHORLS ARE LOST AND THE SHELLS BECOME TRUNCATED AS INDICATED BY THEIR NAME. A SIMILAR LOSS OF EARLY WHORLS OCCURS IN THE FAMILY CAECIDAE. JUVENILE CAECUM PULCHELLUM WHICH CAN BE COLLECTED BY SCANNING FINE BEACH DRIFT FROM PORT ARANSAS AREA UNDER THE MICROSCOPE SHOW A MINUTE COIL WHOSE WHORLS ARE IN ONE PLANE. THIS COIL IS LOST DURING GROWTH AND THE MATURE SHELL LOOKS LIKE A SMALL PIECE OF SLIGHTLY CURVED TUBING.

SOMETIMES A CHANGE IN GROWTH PATTERN OCCURS RELATIVELY LATE DURING THE DEVELOPMENT. IN THE EARLY FAUNAL LISTS FOR TEXAS SEVERAL TIMES TURRITELLAS HAVE BEEN LISTED; MOST OF THESE REFERENCES UNDOUBTEDLY ARE IN ERROR. IN BEACH DRIFT, ESPECIALLY IN THE SOUTHERN PART OF OUR COAST, SHELLS CLOSELY RESEMBLING A TURRITELLA CAN BE FOUND. THEY ARE THE EARLY TURRITELLA STAGE OF VERMICULARIA FARGOI, A WORM SHELL, WHICH HAS THE HABIT OF FIRST GROWING IN A PERFECTLY REGULAR MANNER BUT SUDDENLY WILL START GROWING IRREGULARLY AND UNCOIL ITSELF. IN BEACH DRIFT THE IRREGULAR PART IS BROKEN AWAY AND ONLY THE TURRITELLA STAGE OF THE SHELL IS STRONG ENOUGH TO WITHSTAND WAVE ACTION.

SERIOUS ERRORS CAN ALSO BE CAUSED BY JUVENILE MATERIAL OF SHELLS WHICH, WHEN ADULT, DISPLAY A VERY CHARACTERISTIC FORM. THE SHAPE OF COWRY SHELLS IS ONLY ASSUMED IN THE FULLY GROWN STAGE AND COUNTLESS COLLECTORS ALL THE WORLD OVER ARE FAMILIAR WITH ITS SHAPE. ABBOTT, IN HIS BOOK AMERICAN SEA SHELLS, SHOWS AN ALREADY WELL DEVELOPED IMMATURE SHELL, WHICH IS FAR ON THE WAY TO BECOMING A TYPICAL CYPRAEA. THE BABY COWRY, HOWEVER, IS STILL QUITE DIFFERENT. FROM FINE MATERIAL DREDGED AT THE FLOWER GARDENS, A CORAL REEF ABOUT 100 MILES SOUTH OF GALVESTON, A NUMBER OF ALMOST SPHERICAL SHELLS WAS OBTAINED, BEARING NO RELATION WHATEVER WITH THE FULL GROWN CYPRAEA CERVUS OR C. ZEBRA. ONLY AFTER LONG HESITATION AND CAREFUL COMPARISON COULD IT BE ESTABLISHED THAT THESE SPHERICAL SHELLS WERE JUVENILE CYPRAEA.

IT IS THUS NOT SURPRISING THAT OCCASIONALLY NEW SPECIES WERE DESCRIBED BASED ON MATERIAL WHICH WAS IN REALITY JUVENILE SPECIMENS OF WELL KNOWN SPECIES. ANOTHER EXAMPLE IS FOR INSTANCE DISSENTOMA PRIMA PILSBRY, WHICH TURNED OUT TO BE A JUVENILE OF CYMATIUM PILEARE. ONE MAY NOTE HERE THAT THE NUCLEAR SHELLS OF TONNA GALEA, A SPECIES NOT SO FAR REMOVED FROM CYMATIUM, ARE QUITE DIFFERENT FROM FULL-GROWN T. GALEA. THESE JUVENILE SHELLS, WHICH ARE NOT RARE IN BEACH DRIFT ALONG THE TEXAS COAST, ARE INDEED UNEXPECTEDLY DIFFERENT. THEY ARE GREENISH IN COLOR, AND HORNY, NOT CHALKY IN CONSISTENCY, SO THAT THEY CAN BE SLIGHT-

LY DEFORMED BETWEEN ONE'S FINGERS WITHOUT BREAKING .

OF COURSE JUVENILES HAVE OFTEN BEEN PLACED IN FAMILIES OF VERY SMALL SHELLS .  
VITRINELLA TINCTA, ORIGINALLY DESCRIBED BY C. B. ADAMS AND LATER DISCUSSED BY  
CLENCH AND TURNER IN THE PAPER ON THE TYPE SPECIMENS OF ADAMS , IS NOTHING ELSE  
THAN A JUVENILE SHELL OF TEGULA FASCIATA , AS CAN BE ASCERTAINED BY COLLECTING  
A FEW OF THESE SHELLS AROUND PORT ARANSAS .

THE QUICKEST WAS TO GET SOME FEELING FOR THESE DIFFICULTIES IS TO LOOK AT BEACH  
DRIFT UNDER THE MICROSCOPE . FOR MANY YEARS I WAS PUZZLED BY SOME MINUTE GAS-  
TROPODS , NOT RARE ON THE TEXAS BEACH . THEY FINALLY TURNED OUT TO BE THE NU-  
CLEAR WHORLS OF LITIOPA MELANOSTOMA , A COMMON PELAGIC SNAIL , WHOSE NUCLEAR  
WHORLS DO NOT RESEMBLE IN THE LEAST THE FULL GROWN SHELL . EVEN MORE STRIKING-  
LY DIFFERENT IN APPEARANCE ARE THE YOUNG STAGES OF CHEILA EQUESTRIS . THE NU-  
CLEAR SHELLS OF THIS SPECIES RESEMBLES A PERFECTLY SMOOTH AND CLEAR HYDROBIID  
SNAIL . IMMEDIATELY AFTER GROWTH BEGINS THE APERTURE STARTS FLARING AND THE CUP  
AND SAUCER STRUCTURE BEGINS TO DEVELOP , SO THAT THE SHELL SOON BEARS NO RESEM-  
BLANCE AT ALL TO ITS ORIGINAL FORM .

THIS NUMBER OF EXAMPLES CAN BE INDEFINITELY EXTENDED . WE MAY CONCLUDE WITH  
TWO FURTHER EXAMPLES . THE FIRST INVOLVES A CASE IN WHICH THE SPECIES CANNOT  
BE DETERMINED FROM NUCLEAR WHORLS , NAMELY THE NUCLEAR SHELL OF EPITONIUM  
WHICH COMPLETELY LACKS THE COSTAE . THERE IS , AS FAR AS I CAN SEE , NO WAY IN  
WHICH THE SPECIES CAN BE DETERMINED FROM SUCH A SHELL . E. ANGULATUM , ALBIDIUM ,  
HUMPHREYSI AND MANY OTHERS , ALL SEEM TO HAVE INDISTINGUISHABLE NUCLEAR WHORLS ,  
WHICH ARE SMOOTH , SLENDER AND IVORY WHITE .

OUR LAST EXAMPLE CONCERNS JUVENILES OF DIODORA CAYENENSIS . IN THE MATURE SHELL  
THE "KEYHOLE" IS PLACED ON TOP OF THE SHELL , BUT IN VERY YOUNG IT IS IN THE SIDE ,  
BUT IT ENLARGES ITSELF GRADUALLY UPWARDS SO THAT FINALLY THE "VOLCANO" EFFECT  
IS ACHIEVED . I SUSPECT THAT SEVERAL REFERENCES IN THE LITERATURE PERTAINING TO  
PUNCTURELLA SPECIES FOR TEXAS , PROBABLY ALL ARE CONCERNED WITH IMMATURE DIO-  
DORA .

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CONTINUED FROM PAGE 33 . .

SERVING AS SHELL FAIR CHAIRMAN . THE SCHEDULE HAS BEEN MAILED TO FORMER EXHIBI-  
TORS AND MEMBERS ALREADY . YOU MAY OBTAIN A SCHEDULE FROM MRS. ALLEN , BOX  
822 , PORT ISABEL , TEXAS , 78578 .

#### LONG PLAYING RECORDING OF SCIENTIFIC NAMES

DR. R. T. ABBOTT NOW HAS A PROFESSIONAL RECORDING OF THE PRONUNCIATION OF 1200  
SCIENTIFIC SPECIES AND GENERIC NAMES AS THEY APPEAR IN "SEASHELLS OF NORTH AMER-  
ICA" ON THE MARKET AND AVAILABLE THROUGH HIM FOR \$4.95 . PRODUCED AND PUBLISHED  
BY DR. ABBOTT AND SPONSORED BY THE DELAWARE MUSEUM OF NATURAL HISTORY , THIS  
RECORDING ALSO TELLS HOW TO ENUNCIATE AUTHOR'S NAMES , FAMILY NAMES , AND DOZENS  
OF TECHNICAL NAMES . IT IS A HIGH-FIDELITY , LONG-PLAYING (33 1/3 RPM) RECORDING  
OF THE NAMES AND TERMS FOUND IN DR. ABBOTT'S NEW BOOK , "SEASHELLS OF NORTH  
AMERICA" , AND ALL NAMES AND TERMS ARE PRINTED ON THE RECORD JACKET .

TO OBTAIN THE RECORD , SEND A CHECK OR MONEY ORDER TO DR. ABBOTT , 8044 CRITTEN-  
DEN STREET , PHILADELPHIA , PA. , 19118 .

CONCHIOLOGY HAS CERTAIN CHARACTERISTICS SIMILAR TO THOSE OF MOST OTHER COLLECTING HOBBIES. THERE ARE PARTICULARLY STRONG PARALLELISMS BETWEEN SHELL COLLECTING AND STAMP COLLECTING. THESE THOUGHTS WERE REINFORCED FOR ME RECENTLY WHEN I READ AN ARTICLE ENTITLED "A PRIMER FOR CRITICS OF TOPICAL PHILATELY" BY ROBERT S. OESCH. THIS ARTICLE APPEARED IN THREE PARTS IN THE MAY-JUNE, JULY-AUGUST, AND SEPTEMBER-OCTOBER (1969) ISSUES OF TOPICAL TIMES, THE OFFICIAL PUBLICATION OF THE AMERICAN TOPICAL ASSOCIATION (A PHILATELIC ORGANIZATION).

TOPICAL PHILATELY IS NOW BOOMING. AS COMPARED TO THE TRADITIONAL GENERAL STAMP COLLECTING, TOPICAL COLLECTING BEGAN BY PHILATELISTS CONCENTRATING PRIMARILY ON SUBJECTS THAT APPEARED ON THE STAMPS. EXAMPLES OF SUCH SUBJECTS WOULD INCLUDE: LOCOMOTIVES, BUTTERFLIES, BRIDGES, FISHES, AND, YES, SEASHELLS AND THE LIKE. PURPOSE-OF-ISSUE COLLECTION OF STAMPS RELATE TO THE TECHNIQUE OF "ARRANGING PHILATELIC MATERIAL ACCORDING TO THE REASON FOR ITS ISSUE." EXAMPLES LISTED ARE OLYMPIC GAMES, WORLD REFUGEE YEAR, EUROPA, INTERNATIONAL RED CROSS, AND ROTARY INTERNATIONAL.

SUCH TOPICAL STAMP COLLECTING HAS OBVIOUS ANALOGIES TO SHELL COLLECTING TECHNIQUES. THE SHELL COLLECTOR CAN START OUT TO AMASS A GENERAL COLLECTION. ONE CAN LIMIT HIMSELF (OR HERSELF) TO SPECIFIC REGIONS, TO SPECIFIC COUNTRIES, TO SELECTED FAMILIES OF MOLLUSKS. BUT LIKE GENERAL, TOPICAL AND ISSUE MOTIVE STAMP COLLECTING, THE BIG FRUSTRATION IS THE IMPOSSIBILITY OF EVER COMPLETING THE COLLECTION. MANY ITEMS ARE JUST TOO RARE, TOO DIFFICULT (OR TOO EXPENSIVE) TO OBTAIN FOR ONE'S PRIVATE COLLECTION.

MR. OESCH, PHILATELIC EXHIBITOR AND JUDGE, SUGGESTS THAT A FLEXIBLE ADAPTABLE THEMATIC COLLECTION IS THE ANSWER. ACCORDING TO THE AUTHOR, "A THEME IS AN IDEA, A THESIS: AN EXPOSITION OF THOUGHT A FULL-FLEDGED ESSAY SUPPORTED BY PHILATELY". THE OBJECTIVE OF THEMATIC PHILATELY "IS TO COMMUNICATE A SYNTHESIS OF THOUGHT COMPLETELY WITHIN THE DISCRETION AND JURISDICTION OF THE INDIVIDUAL COLLECTOR". A THEMATIC COLLECTION, THEREFORE, WOULD BE OPEN-ENDED.

HOW CAN ALL OF THIS BE APPLIED TO A SHELL DISPLAY? LET US TAKE THE FAMILIAR GROWTH SERIES. ALMOST ALL OF THE EXHIBITS I HAVE SEEN TRIED TO DEMONSTRATE THE CONCEPT OF GROWTH BY A SERIES OF SHELLS INCREASING GRADUALLY IN SIZE FROM MINUTE AS POSSIBLE TO AS LARGE AS POSSIBLE. ORIGINALITY IN SUCH EXHIBITS CAN BE EXERCISED ONLY IN THE ARRANGEMENT OF THE SPECIMENS AND IN THE SUPPORTING ART WORK. THE DIFFICULTY AND "RESEARCH" INVOLVED WOULD PRIMARILY CONCERN THE RARITY OF THE SPECIES SHOWN AND THE NUMBER OF SPECIMENS USED.

I WOULD PROPOSE A THEMATIC APPROACH TO THIS BY FIRST ALTERING THE TITLE TO "GROWTH AND DEVELOPMENT". UNDER THIS BROADER CONCEPT, ONE WOULD NO LONGER NEED TO USE THE SAME SPECIES TO ILLUSTRATE THE POINTS RELATED TO THE THEME. FOR EXAMPLE, A PROGRESSIVE INCREASE IN SIZE WOULD BE ONLY ONE FACET OF THE GROWTH PROCESS. THIS CAN BE DEMONSTRATED WITH AS FEW AS TWO OR THREE SPECIMENS. JUST AS IMPORTANT AS CHANGES IN SIZE ARE THE ALTERATIONS IN FORM, BEST TERMED DEVELOPMENT. HERE THE CHANGES IN CONTOUR, MORPHOLOGY, COMPLEXITY, AND PROPORTIONS CAN BE SPECIFICALLY SHOWN. VARIABILITY IS STILL ANOTHER FEATURE OF GROWTH. VARIATIONS IN SIZE CAN BE ILLUSTRATED. AN IMMATURE SHELL MAY BE LARGER THAN A MATURE ADULT. ADULTS VARY IN SIZE AND SHAPE AND COLOR PATTERN. OTHER VARIATIONS THAT CAN BE FEATURED

INCLUDE THE DEFORMITIES THAT FOLLOW INJURY , THE DWARFISM OF STARVATION , AND THE DISCOLORATION FROM ENVIRONMENTAL CHEMICALS . ANY PARAMETER CAN BE EXPANDED ; OTHER PERTINENT ASPECTS CAN BE ADDED . A MINIMUM NUMBER OF SPECIMENS FROM DIFFERENT SPECIES WOULD SUFFICE TO MAKE THE POINTS .

BEST OF ALL , IN A THEMATIC COLLECTION , ONE WILL BE FREED OF THE OVERWHELMING DRIVE (AND THE EQUALLY STRONG FRUSTRATION OF AN IMPOSSIBLE TASK) TO "COMPLETE " ANYTHING .

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MOLLUSCAN ASSEMBLAGES OF THE NORTHWEST GULF OF MEXICO (PART I)

BY H. ODE

ALTHOUGH IT IS PROBABLY ONE OF THE LEAST STUDIED STRETCHES OF THE U . S . ATLANTIC SEA COAST , THE COASTLINE BETWEEN THE MOUTH OF THE MISSISSIPPI AND THE RIO GRANDE IS AN EXTREMELY VARIED ONE AND HARD TO MATCH IN VARIETY OF HABITAT . AT ONE END THE GREATEST RIVER OF THE NORTH AMERICAN CONTINENT EMPTIES INTO THE GULF OF MEXICO , CREATING AN IMMENSE SPECIAL HABITAT IN SOUTHERN LOUISIANA , WITH BRACKISH COASTAL BAYS , PASSES AND CHANNELS , WHILE AT THE OTHER END ANOTHER IMPORTANT RIVER EMPTIES INTO THE GULF . IF ONE CONSIDERS A LINE DRAWN TOWARD THE EAST FROM THE MOUTH OF THE RIO GRANDE TO THE MERIDIAN WHICH CUTS THE MISSISSIPPI BIRDFOOT DELTA , THAT PART OF THE GULF OF MEXICO IS ENCLOSED WHICH SHALL BE DISCUSSED IN THE FOLLOWING ARTICLE . IN THIS NORTHWEST QUADRANT OF THE GULF THE WATER DEPTH VARIES FROM ABYSSAL IN THE SOUTHEAST , BECOMING SHALLOWER OVER A RUGGED CONTINENTAL SLOPE , TO SHALLOW OVER A BROAD AND GENTLY DIPPING SHELF , WHOSE BOTTOM IS MAINLY COMPOSED OF SANDS AND MUD , EXTENDING TO A WIDTH OF 120 MILES AT THE TEXAS-LOUISIANA BORDER . AT THE MARGIN OF THE SHELF IN THIS AREA ARE LOCATED THE MOST NORTHERLY LIVING CORAL REEFS OF THE WESTERN ATLANTIC OCEAN , WHILE OVER THE SHELF OUTCROPS OF MIOCENE SHALE , SUCH AS STETSON BANK , ARE SURROUNDED BY RECENT SEDIMENTS . PLEISTOCENE SHELL BANKS (SABINE , HEALD) , HAVING THEIR OWN SPECIALIZED AND ADAPTED FAUNAS CAN BE FOUND CLOSER TO SHORE . THE SHALLOW COASTAL WATERS ARE NO LESS VARIED . IN THE EAST EXTENDS THE VAST EXPANSE OF THE MUDDY FRESH AND BRACKISH WATER BAYS OF LOUISIANA ; AT GALVESTON THE FIRST OF THE LONG SANDY BARRIER ISLANDS MAKES IT APPEARANCE , BEHIND WHICH COASTAL BAYS EXTEND . FURTHER TO THE SOUTHWEST THESE BAYS , EXCEPT AT INFREQUENT OCCASIONS , RECEIVE ONLY SMALL AMOUNTS OF FRESH WATER SO THAT THEY ARE OFTEN IN SUMMER TIME , WHEN EVAPORATION EXCEEDS THE INFLUX OF FRESH WATER , MORE SALINE THAN EVEN THE OPEN SEA . ALSO FURTHER EAST THERE ARE SEASONAL CHANGES AND FLUCTUATIONS IN THE SALT CONTENT OF THE BAYS .

RIVER SYSTEMS FILL IN THESE BAYS , CREATING ALMOST FRESH WATER LAKES AT THEIR UPPER ENDS , AND IN COME INSTANCES THEY HAVE COMPLETELY FILLED THE BAYS (COLORADO-BRAZOS SYSTEM) . IT IS LITTLE WONDER THAT IN AN AREA WITH SUCH DIVERSITY A VARIED FAUNA CAN LIVE . HOWEVER UNTIL 40 YEARS AGO THE MOLLUSK FAUNA DID NOT ATTRACT MUCH ATTENTION , PROBABLY BECAUSE OF THE PROXIMITY OF MANY RICH PURELY CARIBBEAN TYPE COLLECTING GROUNDS , THE RELATIVE INACCESSABILITY OF LARGE STRETCHES OF THIS COAST (EVEN TODAY!) AND THE SMALL POPULATION DENSITY . MOREOVER COLLECTING IN MUDDY BROWN WATER IS NOT AS INTERESTING AS DIVING IN A CLEAR BLUE TROPICAL LAGOON AND IT MUST BE CONCEDED ; THE SHELLS ARE NOT AS PRETTY . STANDING ON THE SEAWALL AT GALVESTON THE BREAKERS ON A WINDY DAY LOOK BROWN AND MUDDY . PROTODGRAPHS TAKEN FROM SATELLITES SHOW TONGUES OF MUDDY WATER EXTENDING FROM THE BAY INLETS INTO THE GULF AND CAN BE DISCERNED TO ABOUT 70 MILES OFFSHORE . THUS , IT MAY BE

EXPECTED THAT THE INFLUENCE OF SEDIMENT WILL BE FELT ON THE MOLLUSCAN FAUNA FOR THAT DISTANCE. SPECIES WHICH DO NOT TOLERATE SUSPENDED SEDIMENT THEREFORE WILL NOT OCCUR CLOSE TO THE TEXAS COAST. EVEN THOUGH THE WINTERS ARE SELDOM SEVERE A SUFFICIENT DROP IN TEMPERATURE OCCURS OFTEN ENOUGH TO PREVENT SOME SPECIES FROM ESTABLISHING THEMSELVES IN THIS PART OF THE GULF. THE CARIBBEAN TYPE OF FAUNA WHICH EXISTS ON THE CORAL BANKS, AS FOR INSTANCE THE FLOWER GARDENS, 110 MILES SOUTHEAST OF GALVESTON SURVIVES THERE BECAUSE THE WATER TEMPERATURE NEVER GOES BELOW THE CRITICAL TEMPERATURE WHICH WOULD KILL THE SUPPORTING CORAL GROWTH. IT IS SIGNIFICANT IN THIS RESPECT THAT SEVERAL SIMILAR SHALLOW SPOTS ON THE SHELF, LOCATED FARTHER TO THE NORTH ARE NOT TOPPED BY LIVE CORAL.

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... TO BE CONTINUED

CONTINUED FROM PAGE 36...

FOR THOSE WHO MAY WISH TO READ MORE PARTICULARS ABOUT THIS SPECIES WE CITE HERE THE FOLLOWING REFERENCES:

- 1839 JAMINIA SEMINUDA ADAMS, BOST. JOURN. NAT. HIST., II, P. 280, PL. 4, FIG. 13. (REPRINTED 1950, CLENCH AND TURNER, OCC. PAP. MOLL., VOL. 1 (15), P. 341, PL. 41 FIGS. 5, 6)
- 1886 ODOSTOMIA SEMINUDA, TRYON, MAN. 8, P. 357, PL. 78, FIG. 35.
- 1889 ODOSTOMIA SEMINUDA, DALL. BULL. U.S.N.M. No. 37, P. 130. No. 638, PL. 52, FIG. 10.
- 1892 ODOSTOMIA SEMINUDA, DALL. TRANS. WAGN. FREE INST. SCI., VOL. 3, PT. 2, P. 251.
- 1909 ODOSTOMIA (CHRYSALLIDA) SEMINUDA C. B. ADAMS, BARTSCH, PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 97, PL. 13, FIGS. 45, 48.
- 1955 ODOSTOMIA SEMINUDA (C. B. ADAMS), PERRY AND SCHWENDEL, MARINE SHELLS WEST COAST FLORIDA, P. 122, PL. 23, FIG. 164.

THE PHOTOGRAPH SHOWN WAS MADE BY MR. C. DEXTER OF SOME SHELLS COLLECTED BY ME AT PORT ARANSAS.

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TIP FOR COLD WEATHER SHELLERS.

BY CONSTANCE BOONE

A COUPLE OF YEARS AGO, MRS. IKE SHEFFIELD LET ME IN ON A COMFORTABLE WAY TO DO OUR WINTER SHELLING. I'D LIKE TO SHARE THE INFORMATION WITH OUR NEW SHELLERS.

ABOUT THE MOST VALUABLE ITEM I HAVE NOW IN MY SHELLING WARDROBE IS THE STOCKING FOOT LIGHTWEIGHT VINYL WADERS I PURCHASED AT ONE OF THE SURPLUS STORES (ALSO AVAILABLE AT LARGE DISCOUNT STORES' SPORTING GOODS DEPARTMENTS) FOR ABOUT \$3.00. WHILE BOTH MEN AND WOMEN CAN USE THESE, THE FEMININE SEX REALLY BENEFITS FROM THIS ARTICLE OF COVERING BECAUSE IT IS SO EASY TO MOVE AROUND IN. YOU CAN WEAR ANY AMOUNT OF CLOTHING UNDER IT - - - LONGIES FOR INSTANCE, ON OUR 32 DEGREE LOW-TIDE DAYS, I WEAR HEAVY SOCKS UNDERNEATH. OVER THE VINYL FOOT I WEAR HIGH TOP TENNIS SHOES, BOUGHT RATHER BIG TO COVER THE MUCH-TOO-LARGE FOOT OF THE GARMENT AND ALSO FOR REPEATED WASHING AND DRYING WHICH ALWAYS SHRINKS THE SHOES. WITH A LIGHTWEIGHT, BUT GOOD, NYLON, HOODED JACKET, I AM READY TO WADE THE BAYS, TRAMP THROUGH LOW PLACES TO GET TO A SAND BAR, ETC.

THE ONLY PROBLEM ABOUT THIS TYPE OF WADER IS THAT IT IS NOT AS STURDY AS SOME OF THE HEAVIER RUBBER AFFAIRS. THIS TEARS OR SPLITS EASIER. HOWEVER, I JUST GO BUY ANOTHER ONE. I FIND IT MUCH EASIER TO MANIPULATE AND COLLECT IN IT THAN DRAGGING THE HEAVY RUBBER ONE AROUND!



SINCE MY TRIP TO GUAYMAS LAST JANUARY, I HAVE BEEN ASKED SEVERAL TIMES ABOUT THE MECHANICS OF DISTANCES AND DRIVING TO THIS FAMOUS COLLECTING PLACE. TO BEGIN WITH, GUAYMAS IS ON THE EAST SHORE OF THE GULF OF CALIFORNIA IN THE MEXICAN STATE OF SONORA. IT IS LOCATED 260 MILES SOUTH OF THE INTERNATIONAL BOUNDARY AT NOGALES, ARIZONA. THERE ARE A VARIETY OF HABITATS FOR MOLLUSKS HERE AND COLLECTING IS VERY, VERY GOOD DURING THE LOW TIDES OF WINTER. WE ENCOUNTERED A MINUS 2.1 TIDE DURING THE MIDDLE OF JANUARY THIS LAST WINTER. DECEMBER AND JANUARY PROVIDE EXCELLENT TIDES ALL ALONG THE GULF OF CALIFORNIA MEXICAN COASTLINE.

FROM HOUSTON TO GUAYMAS IS APPROXIMATELY 1,500 MILES. YOU DRIVE FROM THIS AREA TO INTERSTATE HIGHWAY 10 ALL THE WAY TO TUCSON, ARIZONA. THEN YOU CUT DOWN TO THE BORDER, CROSS AT NOGALES, TAKE A GOOD, LEVEL HIGHWAY (MEXICAN WEST COAST HIGHWAY 15) TO GUAYMAS. FOUR OF US (ALL WOMEN) DROVE THE DISTANCE, LEAVING EARLY IN THE MORNINGS, BUT NOT DRIVING LATER THAN 8 P.M., IN TWO DAYS. FROM HOUSTON, THE DRIVE TO EL PASO IS A COMFORTABLE STOP. THERE WAS TALK OF AN AIRLINE TO GUAYMAS. THIS HAS TO BE CHECKED OUT JUST BEFORE YOU GO, IF YOU WISH TO FLY TO TUCSON AND GO ON DOWN. THE MEXICAN AIRLINES CHANGE SCHEDULES FREQUENTLY. THERE IS A GOOD BUS SYSTEM FROM THE BORDER.

THE COLLECTING AROUND GUAYMAS IS RATHER FABULOUS FOR TEXANS WHO WORK VERY HARD TO COME UP WITH GOOD LIVE SPECIMENS. SEVERAL HUNDRED SPECIES MAY BE COLLECTED FROM ROCK AREAS, SAND FLATS AND BAYS, OPEN BEACH AREAS, EVEN FROM SHRIMPERS, AT GUAYMAS. WE STAYED AT SAN CARLOS BAY, SOME 12 MILES SOUTH FROM GUAYMAS, A LOCATION I HIGHLY RECOMMEND.

IN ADDITION TO MYRA KEEN'S BOOK, "SEA SHELLS OF TROPICAL WEST AMERICA," NOW OUT OF PRINT AND DUE TO BE REPLACED NEXT YEAR WITH A NEW VOLUME, THERE IS AVAILABLE A GOOD AID TO THE COLLECTOR. A CHECKLIST OF MOLLUSKS FOR GUAYMAS, SONORA, MEXICO, WAS PRINTED IN VOL. 9, No. 4, OF THE VELIGER. THIS PART HAS BEEN REPRINTED SEPARATELY FOR SALE THROUGH THE CONCHOLOGICAL CLUB OF SOUTHERN CALIFORNIA, FROM THE TREASURER (MISS JODY WOOLSEY, 1543 ARMACOST STREET, APT. 5, LOS ANGELES, CALIF.) FOR A FEE OF \$1.60.

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#### BOOK REVIEW

BY W. W. SUTOW, M.D.

THE FOLLOWING BOOKS (TWO WRITTEN IN GERMAN AND ONE IN FRENCH) GIVE INFORMATION ON SEASHELLS OF THE MEDITERRANEAN SEA REGION. ONE OF THE BOOKS ALSO PROVIDES DATA ON SEASHELLS ALONG THE WEST COAST OF EUROPE AND THE NORTHWEST COAST OF AFRICA. THE THREE BOOKS ARE IN THE REVIEWER'S PERSONAL LIBRARY; THEY WILL BE MADE AVAILABLE FOR REFERENCE PURPOSES TO MEMBERS OF THE HOUSTON CONCHOLOGY SOCIETY.

1. DIE EUROPÄISCHEN MEERES-GEHÄUSENSCHNECKEN (PROSOBRANCHIA) VOM EISMEER BIS KAPVERDEN UND MITTELMEER BY FRITZ NORDSIECK, 273 PP., 1200 ILLUSTRATIONS, \$12. . STUTTGART (GERMANY), GUSTAV FISCHER VERLAG, 1968.

THIS BOOK SYSTEMATICALLY AND CONCISELY DESCRIBES THE EUROPEAN GASTROPOD MOLLUSKS FROM THE ARCTIC OCEAN TO CAPE VERDE AND THE MEDITERRANEAN SEA. OVER 1000 SPECIES ARE ILLUSTRATED BY BLACK AND WHITE LINE DRAWINGS WHICH ARE CROWDED MANY TO A PAGE.

THERE ARE 31 PAGES OF THESE DRAWINGS. SHOWN ON FOUR COLOR PLATES ARE A NUMBER OF LIVING MOLLUSKS. WHILE THE DRAWINGS PROVIDE A GREAT DEAL OF MORPHOLOGIC INFORMATION, OTHER TEXTUAL DATA WRITTEN IN GERMAN ARE NEEDED FOR COMPLETE DESCRIPTION OF THE SHELLS. LACK OF COLOR PHOTOGRAPHS WHEN THE READER CANNOT UNDERSTAND THE TEXT IS A SERIOUS HANDICAP TO THOSE USING THE BOOK FOR IDENTIFICATION PURPOSES. WITH A LITTLE EFFORT, HOWEVER, THE AVERAGE SIZE OF THE SHELL, THE RANGE OF DISTRIBUTION, AND THE SEA DEPTH WHERE FOUND CAN BE DECIPHERED.

THIS GERMAN BOOK SEEMS TO PROVIDE A FAIRLY COMPREHENSIVE CHECKLIST FOR THOSE GASTROPOD SPECIES THAT LIVE AROUND THE PERIPHERY OF THE EUROPEAN CONTINENT. IT IS STATED THAT THIS IS THE FIRST BOOK OF THIS SCOPE TO APPEAR IN 60 TO 80 YEARS.

2. FAUNA UND FLORA DER ADRIA BY RUPERT RIEDL, 640 PP, 2590 ILLUSTRATIONS, HAMBURG AND BERLIN (GERMANY), VERLAG PAUL PAREY, 1963.

THE VOLUME IS A COLLABORATIVE TEXTBOOK COMPILED AT THE ZOOLOGICAL INSTITUTE OF THE UNIVERSITY OF VIENNA. INTENDED AS A SYSTEMATIC GUIDE FOR BIOLOGY AND NATURE LOVERS THE CONTENTS COVER THE BROAD FIELDS OF FAUNA AND FLORA OF THE ADRIATIC SEA AND ITS SHORES. APPROXIMATELY ONE-EIGHTH OF THE BOOK (81 PAGES) DEALS WITH MOLLUSKS INCLUDING SECTIONS ON AMPHINEURA, GASTROPODA, BIVALVIA, AND CEPHALOPODA.

ALMOST ALL OF THE ILLUSTRATIONS ARE BLACK AND WHITE LINE DRAWINGS. THE DRAWINGS, HOWEVER, ARE SHARP AND CLEAR AND SHOULD SERVE WELL FOR MOST IDENTIFICATION PURPOSES. FOR OBVIOUS REASONS, NUMEROUS SPECIES HAD TO BE SHOWN ON ONE PAGE BUT THE SHELLS ARE INDIVIDUALLY IDENTIFIED (IN SCIENTIFIC LATIN) AND THE SIZE OF THE SPECIMEN IS NOTED. THERE ARE 19 SUCH PAGES FOR THE UNIVALVES, ONE FOR THE CHITONS, 9 FOR THE BIVALVES AND ONE FOR THE CEPHALOPODS. THERE ARE IN ADDITION ONE COLOR PAGE SHOWING TEN SPECIES OF NUDIBRANCHS AND ONE PLATE WITH COLOR PHOTOGRAPHS OF 11 SPECIES OF BIVALVES.

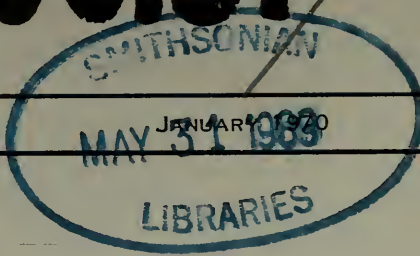
THE SCIENTIFIC DESCRIPTIONS (IN GERMAN) ARE CONCISE. OF PARTICULAR INTEREST ARE THE SHORT PHRASES INDICATING THE TYPES OF ENVIRONMENT IN WHICH EACH SPECIES IS FOUND. ALTHOUGH THE REVIEWER IS UNABLE TO ASSESS HOW COMPLETELY THE MOLLUSCAN FAUNA OF THIS AREA HAS BEEN REPRESENTED IN THIS BOOK, IT WOULD BE REASONABLE TO ASSUME THAT THE MOST COMMONLY FOUND SPECIES HAVE BEEN INCLUDED. OF ADDED VALUE TO THE USUAL SHELL COLLECTOR IS THE HANDY AVAILABILITY OF AN ATLAS THAT WILL PROVIDE INFORMATION ON OTHER ANIMAL AND VEGETABLE LIFE WHICH SO OFTEN ENDS UP IN THE COLLECTING BASKET ALONG WITH SHELLS.

3. COQUILLAGES MARINS BY P. J. ARREGROS, 63 PP, \$2, LAUSANNE (SWITZERLAND) LIBRAIRIE PAYOT, 1965.

THIS IS A SMALL (4 x 6 INCHES) POCKET-SIZED HANDBOOK (HARD COVER) OF SEASHELLS OF THE ENGLISH CHANNEL, ATLANTIC OCEAN AND MEDITERRANEAN SEA. PRESUMABLY, THE EMPHASIS IS PLACED ON THE MOLLUSKS FOUND ALONG THE FRENCH SHORES. THE BOOK IS WRITTEN IN FRENCH. AS USUAL, HOWEVER, THE SHELLS ARE IDENTIFIED BY THEIR SCIENTIFIC NAMES. EACH SPECIES IS ILLUSTRATED BY A SURPRISINGLY CLEAR AND WELL-REPRODUCED COLOR PHOTOGRAPH. BOTH GASTROPODS AND BIVALVES ARE COVERED. WITHIN THE LIMITATIONS OF SIZE AND SCOPE, THE BOOKLET APPEARS TO BE AN EXCELLENT INITIAL GUIDE FOR SEASHELLS OF FRANCE.

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# CONCHOLOGIST



VOLUME VI, No. 5

## NOTES & NEWS

### REPORT NOVEMBER MEETING

PAUL MCGEE GAVE AN ENTHUSIASTIC REPORT ON THE OCEANOGRAPHIC PROGRAM OF THE HOUSTON INDEPENDENT SCHOOL DISTRICT. HIS TALK WAS ILLUSTRATED BY A SERIES OF BEAUTIFUL SLIDES TAKEN IN THE OUTDOOR CLASSROOM ON THE BEACHES AND BAYSHORE OF GALVESTON ISLAND.

### NEXT MEETING

CHARLES DOH, ONE OF OUR OWN MEMBERS, WILL PRESENT THE PROGRAM FOR JANUARY 28 ON "HOW TO FIND SHELLS BY DIVING". HIS TALK WILL BE ILLUSTRATED WITH UNDER-WATER SHOTS FROM HIS TRAVELS TO AUSTRALIA, OTHER PACIFIC SPOTS, THE MEDITER-RANEAN, AND POSSIBLY MEXICO. MR. AND MRS. DOH WILL ALSO SHOW SEVERAL BOXES OF SHELLS BROUGHT BACK FROM THEIR TRIP TO THE ADRIATIC THIS LAST SUMMER.

THE MEETING WILL BE HELD AT 8 P. M. AT THE MUSEUM OF NATURAL SCIENCE. MEM-BERS ARE ENCOURAGED TO INVITE FRIENDS TO VISIT WITH US.

### AUCTION PLANNED FOR FEBRUARY

PLANS ARE TO HAVE THE ANNUAL AUCTION ON FEBRUARY 25 AT THE REGULAR MEETING. WE STILL HAVE SHELLS FROM THE PACIFIC PURCHASED LAST YEAR FROM A RETURNING SERVICE MAN. IN ADDITION, WE ASK THAT ANY MEMBER WHO WISHES TO DONATE SPE-CIMEN SHELLS FOR THE AUCTION TO GIVE THEM TO CONNIE BOONE, PROGRAM CHAIRMAN, 3706 RICE BOULEVARD. PLEASE GIVE EXACT COLLECTING DATA ON THESE SHELLS YOU REGARD GOOD ENOUGH FOR THE AUCTION. NONE WILL BE SOLD AHEAD OF THE MEETING. ANY LEFT OVER WILL BE DONATED TO THE COLLECTION OF SHELLS BEING PREPARED FOR SALE AT THE MAY SHARPSTOWN MALL SHOW. THE SHELLS YOU DONATE FOR THE AUC-TION MAY BE THE ONES YOU FOUND QUITE EASILY ON A SHELLING TRIP BUT WHICH MAY NOT BE IN ANOTHER MEMBER'S COLLECTION. WE'LL WORK OUT SOME FAIR WAY FOR YOU TO PURCHASE THESE AT REASONABLE PRICES.

### REPORT NOVEMBER FIELD TRIP

BY H. ODE

A SUCCESSFUL FIELD TRIP TOGETHER WITH MEMBERS OF THE SAN ANTONIO SHELL CLUB WAS HELD ON NOVEMBER 23RD. THE WEATHER WAS BEAUTIFUL, THE TIDE LOW AND MANY SPECIES OF LIVE SHELLS WERE COLLECTED ON THE EXPOSED FLATS. FOR THOSE WHO NEVER DUG A SINUM OR WHELK IT WAS A GOOD DAY. SEVERAL PEOPLE WERE LUCKY TO GET A LIVE PANDORA TRILINEATA.

IN A SAMPLE OF FINE BEACHDRIFT I COLLECTED A NUMBER OF HIGHLY INTERESTING SMALL SPECIES ABOUT WHICH I WILL REPORT AT A LATER DATE, BUT THE FIRST AUTHENTIC RE-PORT OF PARASTARTE TRIQUETRA FOR TEXAS MAY BE REPORTED HERE.

AFTER THE TRIP EVERYONE WAS ENTERTAINED ROYALLY BY LEO AND MILDRED TATE.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### HYDROBIIDAE (CONTINUED)

VIOSCALBA LOUISIANAE MORRISON 1965. ANOTHER LITTLE GASTROPOD OFTEN FOUND MIXED WITH THE PREVIOUS SPECIES. IT HAS BEEN REPORTED BEFORE UNDER THE NAME PROBYTHINELLA PROTERA PILSBRY, WHICH HOWEVER IS A CLOSELY RELATED VIOSCALBA FROM THE FLORIDA PLIOCENE. FOR FURTHER PARTICULARS WE REFER TO THE ARTICLE OF MORRISON. WE ONLY HAVE REPORTS OF LIVE MATERIAL FROM TRINITY BAY. FIGURED IN: MORRISON, J. E., 1965, PROC. BIOL. SOC. WASH., VOL. 78, P. 217-224.

PREVIOUS REFERENCES: TEX. CONCH., VOL. 1 (9).

LOCALITIES: GALVESTON, MATAGORDA, PORT ARANSAS, PORT ISABEL.

"ODOSTOMIA" BARRETTI MORRISON 1965. THIS IS THE THIRD COMMONLY FOUND SPECIES ON THE TEXAS COAST, USUALLY FOUND TOGETHER WITH THE OTHER TWO SPECIES. IT WAS MISTAKENLY DESCRIBED AS AN ODOSTOMIA. THE SPECIES LIVES IN GALVESTON BAY NEAR LA MARQUE AND SEABROOK, AND DEAD SHELLS ARE KNOWN FROM MATAGORDA BAY AND FURTHER SOUTH.

FIGURED IN: PROC. BIOL. SOC. WASH., VOL. 78, P. 217-224.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON BAY, FREEPORT, MATAGORDA, PORT ARANSAS.

REMARKS: A NUMBER OF OTHER SPECIES CAN USUALLY BE COLLECTED IN BEACHDRIFT THROUGHOUT THE YEAR. MOST OF THESE ARE PROBABLY FORMS WHICH LIVE IN PURE FRESH WATER OF THE LOWER REACHES OF THE RIVERS. WE WILL NOT DISCUSS THESE HERE.

FAMILY ASSIMINEIDAE. THIS WORLDWIDE FAMILY IS REPRESENTED BY ONLY A SINGLE SPECIES IN TEXAS. THE LITTLE SHELLS RESEMBLE SMALL HYDROBIIDS.

ASSIMINEA SUCCINEA PFEIFFER 1840. THIS IS A SOMEWHAT UNUSUAL SPECIES FOUND SO FAR ONLY AT GALVESTON. IT WAS COLLECTED ALIVE IN GALVESTON BAY BY MRS. BOONE. THE SHELL IS SOMEWHAT STURDIER THAN MOST HYDROBIIDS, AND IS NOT UMBILICATED. ITS COLOR IS YELLOWISH, WHEN FRESH. THESE SHELLS AGREE QUITE WELL WITH THE FIGURE OF PHASIANELLA CONCOLOR C. B. ADAMS 1850, IN CLENCH AND TURNER, OCC. PAP. MOLL., VOL. 1 (15), P. 267, PL. 36, FIG. 3, WHICH ACCORDING TO ROBERTSON IS PROBABLY SYNONYMOUS WITH A. SUCCINEA. FIGURED IN: SEE CITED REFERENCE.

PREVIOUS REFERENCES: TEXAS CONCH., VOL. 3, No. 9

LOCALITIES: GALVESTON

FAMILY MYTILIDAE. OF THIS COSMOPOLITIC FAMILY OF BIVALVES SPECIES BELONGING TO THE GENERA MODIOLUS, BRACHIDONTES, AMYGDALUM, LIOBERUS, MUSCULUS, GREGARIELLA, LITHOPHAGA AND ADULA CAN BE COLLECTED ON TEXAS BEACHES. SOME SPECIES SPEND THEIR LIFE ATTACHED BY BYSSUS TO SOME SUBSTRATUM (MODIOLUS, BRACHIDONTES) WHILE OTHERS (LITHOPHAGA) EMBED THEMSELVES IN HOLES IN ROCKS OR CORAL. STILL OTHERS ARE NESTLERS (AMYGDALUM) OR LIVE IN ABANDONED BORINGS IN WOOD (ADULA).

BRACHIDONTES RECURVUS RAFINESQUE 1820. THIS BAY SPECIES IS QUITE COMMON ON PILINGS AND ROCKS IN THE BRACKISH WATER PORTIONS OF THE COASTAL BAYS. WORN VALVES ARE OFTEN FOUND ON THE OUTER BEACHES BUT COME FROM THE BAYS AS THE SPECIES DOES NOT LIVE IN THE OPEN SEA.  
FIGURED IN: 1,2,3,4,5,6  
PREVIOUS REFERENCES: 11,14,17,19,51, ETC.  
LOCALITIES: COMMON IN THE COASTAL BAYS ALONG ENTIRE TEXAS COAST.

BRACHIDONTES EXUSTUS LINNE 1758. A QUITE ABUNDANT SPECIES SMALLER THAN THE PREVIOUS ONE, FROM WHICH IT CAN BE IMMEDIATELY DIFFERENTIATED BY THE DIFFERENT HINGE STRUCTURE. USUALLY ATTACHED ALIVE TO CLUMPS OF OYSTERS OR CLUSTERED IN CRANNIES OF JETTIES AND SEAWALLS. IT OCCURS IN MANY TYPES OF ENVIRONMENTS IN THE TEXAS COASTAL BAYS.  
FIGURED IN: 1,2,3,4,5,6  
PREVIOUS REFERENCES: 11,13,14,17,19,20,27,28, ETC.  
LOCALITIES: ABUNDANT IN BAY ENVIRONMENTS ALONG THE ENTIRE TEXAS COAST.

BRACHIDONTES CITRINUS RODING 1798. THIS SPECIES IS QUITE RARE IN TEXAS. AT PORT ISABEL A FEW SPECIMENS HAVE BEEN COLLECTED ON BOCA CHICA JETTY. IN REFERENCE 14 IT IS STATED THAT THIS SPECIES OCCURS ALIVE IN THE LAGUNA MADRE (INLET HYPERSALINE, OPEN HYPERSALINE, ENCLOSED HYPERSALINE) AND ALSO IN SHALLOW HYPERSALINE ENVIRONMENT AT ROCKPORT. THESE REFERENCES AND SEVERAL OTHERS NEED CONFIRMATION.  
FIGURED IN: 1,2,3,4  
PREVIOUS REFERENCES: 14,19,27,28,51  
LOCALITIES: BOCA CHICA JETTY

GREGARIELLA OPIFEX SAY 1825. FRESH SPECIMENS WHICH ARE CHARACTERISTICALLY BEARDED ARE OCCASIONALLY OBTAINED FROM BEACHDRIFT AT PORT ARANSAS. (COLL. ODE, SPEERS). THE SPECIES HAS BEEN COLLECTED ALIVE AT PORT ARANSAS AND PORT ISABEL (SPEERS) ON ROCKS OR DEBRIS NESTLED IN GOUPS IN A SANDY, SEMI-HARD MATRIX APPARENTLY CREATED BY THE ANIMAL, SO THAT ONLY THE HAIRY HEARTSHAPED END IS EXPOSED. IN THIS MODE OF LIFE THE SHELL IS VERY WELL CAMOUFLAGED. OFFSHORE TIMBALIER ISLAND MANY SPECIMENS WERE DREDGED LIVING IN THIS MANNER. ANOTHER MODE OF LIFE OCCURS TOO: INDIVIDUAL SHELLS CAN BE FOUND IN HOLES BORED, PROBABLY BY OTHER SPECIES, IN MOLLUSKS SUCH AS OYSTERS. (GALVESTON, COLL. ODE). OFFSHORE THE SPECIES IS VERY COMMONLY FOUND THAT WAY.  
FIGURED IN: 2,3,4,6  
PREVIOUS REFERENCES: 11,12,13,18,19  
LOCALITIES: GALVESTON, ST. JOSEPH ISL., PORT ARANSAS, PORT ISABEL.

TO BE CONTINUED.....

ALL ALONG THE TEXAS COAST TWO SPECIES OF THE GENUS NUCULANA CAN BE FOUND COMMONLY IN BEACHDRIFT. THE TWO SPECIES APPEAR TO PREFER DIFFERENT ENVIRONMENTS: NUCULANA CONCENTRICA IS REGULARLY FOUND IN DRIFT ON THE OUTER BEACHES AND IS PARTICULARLY COMMON ON GALVESTON ISLAND, BUT LIVE SPECIMENS ARE RARE IN DRIFT. THE SMALLER NUCULANA ACUTA APPEARS TO BE LARGELY CONFINED TO THE SALINE BAYS. AT SAN LUIS PASS ON GALVESTON IT IS RATHER SCARCE, BUT IT INCREASES IN ABUNDANCE TOWARD THE SOUTHWEST, SO THAT IN THE ROCKPORT-CORPUS CHRISTI AREA IT FAR EXCEEDS N. CONCENTRICA IN ABUNDANCE. BOTH FORMS ARE DIFFERENT IN SURFACE SCULPTURE, SHAPE AND SIZE. THE LARGER OF THE TWO, NUCULANA CONCENTRICA, HAS ITS "BEAK" NOT UPTURNED AND ITS SURFACE CONSISTS OF A NUMBER OF CLOSELY SPACED VERY FINE LONGITUDINAL SURFACE LINES. WHEN FRESH THE VALVES SOMETIMES DISPLAY A SILKEN SHEEN. NUCULANA ACUTA IS A SMALL SHELL, HAVING RATHER COARSE LONGITUDINAL RIBS AND ITS "BEAK" APPEARS TO BE MORE CURVED, AS CAN BE SEEN FROM OUR FIGURES MADE BY MR. C. DEXTER, MADE FROM MATERIAL IN MY COLLECTION AND COLLECTED AT PORT ARANSAS.

THERE IS SOME QUESTION IN MY MIND WHETHER THIS SMALL SPECIES IS CORRECTLY IDENTIFIED AS N. ACUTA. IN OFFSHORE DREDGE MATERIAL A NUMBER OF FORMS INCREASING IN STURDINESS WITH DEPTH CAN BE FOUND WHICH AGREE MUCH BETTER WITH THE FIGURE OF N. ACUTA GIVEN BY DALL IN THE BLAKE REPORT (VOL. 12, BULL. MC2, PL. 7, FIGS. 3A-B). THESE DEEPER WATER SHELLS DISPLAY MUCH MORE CLEARLY THAN THE SMALL BAY FORM THE RADIAL RIB ON THE ANTERIOR END OF THE VALVE, A RIB WHICH IS OFTEN HARDLY DISCERNIBLE IN THE SMALL BAY FORM. IN DREDGE MATERIAL FROM SHALLOW DEPTHS THE SMALL FORM ALSO HAS BEEN OBTAINED, SOMETIMES MIXED WITH THE STURDIER MORE GLOBOSE FORM. BOTH FORMS CAN, WHEN SUFFICIENTLY MATURE, BE SEPARATED WITHOUT TROUBLE. IT IS POSSIBLE THUS THAT THE SMALL BAY FORM REPRESENTS A SEPARATE RACE OR SUBSPECIES OF N. ACUTA OR PERHAPS EVEN ANOTHER SPECIES. N. ACUTA RANGES INTO FAIRLY DEEP WATER. THE DEEP WATER SHELLS OF THE SPECIES THERE ARE SO DISSIMILAR FROM THE BAY FORM THAT IT IS HARD TO BELIEVE THAT THEY BELONG TO THE SAME SPECIES AND I WOULD NOT BE SURPRIZED IF TWO OR MORE SPECIES ARE INVOLVED IN THE ACUTA COMPLEX. HOWEVER, MORE EXTENSIVE MATERIAL THAN IS AT PRESENT AVAILABLE FROM THE GALVESTON AREA AND THE TEXAS COAST IS NECESSARY FOR STUDY TO DECIDE THE PROBLEM.

NUCULANA WAS REPORTED IN MANY OF THE EARLY LISTS. THE FOLLOWING REFERENCES TO NUCULANA CONCENTRICA AND N. ACUTA ARE GIVEN HERE:

NUCULANA CONCENTRICA:

DALL 1885-1886, BLAKE REPORT; DALL 1890, BULL. 37; SINGLEY 1893; SINGLEY 1895, MITCHELL, NO DATE; DALL 1898, TR. WAGNER FREE INST.; JOHNSON 1934, PROC. BOST. SOC. NAT. HIST., VOL. 40 (1); RICHARDS 1939, BULL. GEOL. SOC. AM., VOL. 50; LADD 1951, PUBL. INST. MAR. SCI., VOL. 2 (1); PARKER 1955, JOURN. PAL. VOL. 29; SHEPARD AND MOORE 1955, BULL. AM. ASS. PETR. GEOL. VOL. 38 (8); HENDERSON 1956, TEX. A&M RES. FOUND. PROJECT 124; PARKER 1956, BULL. AM. ASS. PETR. GEOL. VOL. 40; NEUMANN 1958, TEX. A&M RES. FOUND.; MARLAND 1958 MASTERS THESIS, TEX. A&M; PARKER 1959, BULL. AM. ASS. PETR. GEOL. VOL. 43; KENNEDY 1959, MASTERS THESIS, T.C.U.; RICE 1960, INST. MAR. SCI. PORT ARANSAS; PARKER 1960, AM. ASS. PETR. GEOL., TULSA; SILER AND SCOTT 1964, FIELD TRIP GUIDE BOOK, CORPUS CHRISTI GEOL. SOC.; HARRY 1967, TEX. A&M, GALVESTON LAB.

NUCULANA ACUTA:

RICHARDS 1939, BULL. GEOL. SOC. AM., VOL. 50; STENZEL 1939, NAUTILUS VOL. 54 (1); LADD 1951, PUBL. INST. MAR. SCI. VOL. 2 (1); PULLEY 1952, TEX. JOUR,

SCI. VOL. 4 (1); PARKER 1955, JOUR. PAL. VOL. 29; HULINGS 1955, MASTERS THESIS T.C.U.; SHEPARD AND MOORE 1955, BULL. AM. ASS. PETR. GEOL. VOL. 38 (8); PARKER 1956, BULL. AM. ASS. PETR. GEOL. VOL. 40; NEUMANN 1958, TEX. A&M RES. ROUND.; MARLAND 1958, MASTERS THESIS, TEX. A&M; PARKER 1959, BULL. AM. ASS. PETR. GEOL. VOL. 43; KENNEDY 1959, MASTERS THESIS, T.C.U.; RICE 1960, INST. MAR. SCI., PORT ARANSAS; PARKER 1960, AM. ASS. PETR. GEOL., TULSA; SILER, AND SCOTT 1964, FIELD TRIP GUIDE BOOK, CORPUS CHRISTI GEOL. SOC.; HARRY 1967, TEX. A&M, GALVESTON LAB.

THE SYNONYMY OF BOTH SPECIES IS PROBABLY QUITE INVOLVED AND WE SHALL NOT ATTEMPT TO GIVE ONE HERE. DALL PLACED N. EBOREA CONRAD IN SYNONYMY WITH N. CONCENTRICA. LATER PARKER (1955-1956) AND OTHERS USED THIS NAME AND ALSO MENTIONED A "RIBBED" VARIETY OF CONCENTRICA FOR THE LOUISIANA OFFSHORE. THIS REFERENCE MAY PERTAIN TO A FORM OF CONCENTRICA IN WHICH THE AREA ON THE OUTER SURFACE, VARIABLE IN EXTENT, WHERE THE SHELL APPEARS TO BE SMOOTH, IS CLEARLY UNDULATED.



NUDULANA CONCENTRICA  
FROM BEACHDRIFT, PORT ARANSAS, TEXAS



NUDULANA ACUTA  
FROM BEACHDRIFT, PORT ARANSAS, TEXAS

THIS MONTH, LET US TALK ABOUT THE SOUTH PADRE ISLAND SHELL FAIR SCHEDULED FOR FEBRUARY 28 AND MARCH 1, 1970 AT SOUTH PADRE ISLAND (PORT ISABEL). I ASKED MRS. BETTY ALLEN, THE PERENNIAL PROGRAM CHAIRMAN, ABOUT THE HISTORY OF THE SHELL FAIR AND SHE WROTE BACK AS FOLLOWS:

"WE HAD OUR FIRST SHOW IN FEBRUARY OF 1961 . . . . IN THE BACK ROOM OF JETTIES RESTAURANT . . . . THE NEXT YEAR WE HELD IT IN THE OPEN PICNIC PAVILION WITH OUR SHELLS LAID OUT ON THE PICNIC TABLE . . . . HAD ABOUT TWICE AS MANY EXHIBITORS AND OVER TWICE THE CROWD . . . . AT LEAST 5,000 PEOPLE THEY FIGURED FROM THE NUMBER OF TOLLS ON THE BRIDGE. THAT YEAR WE BEGAN USING THE TITLE 'SOUTH PADRE ISLAND SHELL FAIR' AND WE HAD JUDGES FOR THE FIRST TIME . . . . ANNE SPEERS AND DR. PULLEY . . . . AND GAVE RIBBONS FOR THE BEST DISPLAYS.

"IN 1963 (THE 3RD SHOW) A COLD NORTHER FORCED US TO HAVE IT IN THE CABANA AREA AND IT WAS PRETTY MISERABLE BUT AGAIN WE HAD ANNE AND DR. PULLEY, RIBBONS FOR AWARDS AND A GREAT NUMBER OF PEOPLE. IN 1964, THE NEW CIVIC CENTER WAS FINISHED AND WE BRAVELY SET OUT TO FILL HALF OF IT. ANNE AND DR. PULLEY WERE AGAIN THE JUDGES AND THEY WERE GETTING TOUGHER ALL THE TIME . . . . NO LONGER, WE FOUND, COULD WE GET BY WITH JUST PUTTING PRETTY SHELLS IN A CASE. WE HAD TO TELL A STORY, OR ILLUSTRATE A FACT, OR EDUCATE THE PUBLIC.

"IN 1965, THE 5TH FAIR, WAS THE BEGINNING OF THE MAJOR AWARDS WITH DR. ABBOTT MAKING THE PHILADELPHIA AWARD AN ANNUAL TROPHY AND, FOR THE FIRST TIME, ANNE SPEERS OFFERED HER TEXAS SHELL TROPHY. DR. ABBOTT WAS SENIOR JUDGE AND THE PHILADELPHIA AWARD WENT TO DOROTHY MOORE, OF OUR CLUB, FOR A DISPLAY OF GULF OF MEXICO SHELLS. IN 1966, DR. ABBOTT WAS AGAIN SENIOR JUDGE AND THE PHILADELPHIA AWARD WENT TO ANOTHER MEMBER OF OUR CLUB, DON WILEY, A HIGH SCHOOL SENIOR WITH A FINE, EDUCATIONAL DISPLAY OF MOLLUSKS IN AQUARIA. BY THIS TIME WE HAD REACHED OUR SATURATION POINT OF ABOUT 15,000 VISITORS AND OVER 100 EXHIBITS.

"IN 1967 DR. REHDER WAS SENIOR JUDGE AND THE PHILADELPHIA TROPHY WAS WON BY NAWONA GARY. THIS WAS ALSO THE FIRST YEAR FOR THE SILVER SHELL TRAYS FOR THE BEST EXHIBIT IN EACH DIVISION. IN 1968 WE HAD TO MOVE THE SHOW BACK TO THE CABANA AREA BECAUSE THE REPAIRS TO THE CIVIC CENTER HAD NOT BEEN COMPLETED. IT WAS FIERCELY COLD ON FRIDAY AND SATURDAY MORNING BUT BY NOON ON SATURDAY THE SUN WAS OUT AND IT WAS WARM ENOUGH FOR OUR JUDGES (WITH DR. REHDER AGAIN) TO TOUR THE DISPLAYS WITH SOME DEGREE OF COMFORT. I WAS THE LUCKY ONE TO WIN THE PHILADELPHIA TROPHY THAT YEAR. LAST YEAR WE WERE BACK IN THE CIVIC CENTER WITH DR. ROSEWATER AS SENIOR JUDGE AND EVERYTHING RAN AS SMOOTH AS SILK. ANOTHER MEMBER OF OUR CLUB, ANTONIO ANDRETTA, WON THE PHILADELPHIA TROPHY WITH A WONDERFUL DISPLAY (50 FEET LONG) OF FOSSILS AND EXPLANATIONS OF FOSSIL STUDIES.

"AND THAT BRINGS US UP TO THE COMING FAIR . . . . OUR 10TH ONE AND, WE HOPE, OUR BEST ONE". (END OF EXCERPTS FROM BETTY'S LETTER).



IN THE FOLLOWING NOTES SOME DATA ABOUT THE KNOWLEDGE OF TEXAS HYDROBIID SNAILS WILL BE PRESENTED. APART FROM A FEW OBSERVATIONS OF MYSELF I HAVE RELIED HEAVILY ON THE PAPER OF DR. H. D. MURRAY PUBLISHED IN STERKIANA (1). OUR KNOWLEDGE ABOUT THIS PART OF OUR FAUNA IS MINIMAL AND HAS PROGRESSED BUT SLOWLY IN THE LAST DECADES. APPARENTLY ONLY AT RARE OCCASIONS HYDROBIID SNAILS HAVE BEEN COLLECTED IN TEXAS AND MOST OF THESE HAVE BEEN OBTAINED FROM THE GUADALUPE RIVER AROUND NEW BRAUNSFELS AND THE RIO GRANDE AND DEVILS RIVERS. ANOTHER SOURCE OF THESE LITTLE SNAILS IS BEACHDRIFT IN WHICH MANY OF THE COASTAL SPECIES CAN BE FOUND. UNFORTUNATELY ALL HYDROBIIDS REQUIRE A STUDY OF THE SOFT PARTS BEFORE THEIR SYSTEMATICS CAN BE STRAIGHTENED OUT AND THIS WORK HAS ONLY JUST BEGUN. BEACH MATERIAL THEREFORE IS NOT VERY HELPFUL. TO MOST COLLECTORS THESE LITTLE SNAILS ARE DRAB AND UNINTERESTING; MOREOVER THEY ARE DIFFICULT TO FIND AND WORST OF ALL PRACTICALLY IMPOSSIBLE TO IDENTIFY. HOWEVER IT IS A VIRTUAL CERTAINTY THAT AFTER A DILIGENT SEARCH IN FRESHWATER SPRINGS, RIVERS AND COASTAL SWAMPS THE DEDICATED COLLECTOR WILL END UP WITH A NUMBER OF AS YET UNDESCRIBED SPECIES.

IN THE COURSE OF TIME A NUMBER OF HYDROBIID SPECIES HAVE BEEN REPORTED FROM TEXAS AND SEVERAL OF THESE WERE DESCRIBED AS NEW. THE LIST OF SPECIES ORIGINALLY DESCRIBED FROM TEXAS IS AS FOLLOWS:

- 1886 POTAMOPYRGUS SPINOSUS CALL AND PILSBRY, PROC. DAVENPORT ACAD. NAT. SCI., 5, P. 14, PL. 2, FIGS. 17-19. TYPE LOCALITY COMAL CREEK. PROBABLY BELONGS IN THE GENUS PYRGOPHORUS. SEE ALSO REF. 2, 3, AND 4.
- 1886 HYDROBIA TEXANA PILSBRY, PROC. DAVENPORT ACAD. NAT. SCI., 5, P. 33, PL. 3, FIGS. 1, 6. LOCALITY: GUADALUPE RIVER AND COMAL CREEK. PLACED IN SYNONYMY WITH THE FIRST SPECIES BY WALKER, 1918. SEE ALSO REFS. 2, 4 (NON CARINATE FORM)
- 1889 AMNICOLA PERACUTA PILSBRY AND WALKER, PROC. ACAD. NAT. SCI., PHILA., P. 88, PL. 3, FIG. 20. LOCALITY SPIVEY'S LAKE, NAVARRO COUNTY (NEAR CORSICANA) TEXAS. SEE ALSO REF. 4 AND 7.
- 1906 AMNICOLA COMALENSIS PILSBRY AND FERRIS, PROC. ACAD. NAT. SCI., PHILA., P. 171, FIG. 37. LOCALITY COMAL CREEK, GUADALUPE RIVER AT NEW BRAUNSFELS; 1910, PILSBRY, NAUTILUS, VOL. 13, P. 98. SEE ALSO REFS. 3 AND 4.
- 1906 PALUDESTRINA DIABOLI PILSBRY AND FERRIS, PROC. ACAD. NAT. SCI., PHILA., P. 170, FIG. 36. LOCALITY: DEVILS RIVER, VAL VERDE COUNTY AND RIO SAN FELIPI, VAL VERDE COUNTY. SEE ALSO REFS. 3 AND 4.
- 1906 COCHLIOPA RIOGRANDENSIS PILSBRY AND FERRISS, PROC. ACAD. NAT. SCI., P. 171, PL. 9, FIGS. 10-13. LOCALITY: RIO SAN FELIPE, VAL VERDE COUNTY, ALSO DEVILS RIVER, VAL VERDE COUNTY. SEE ALSO REFS. 3, 4, AND 5.
- 1906 HORATIA (HAUFFENIA) MICRA PILSBRY AND FERRISS, PROC. ACAD. NAT. SCI. PHILA., P. 172, PL. 9, FIGS. 7-9, (DESCRIBED AS VALVATA MICRA) 1916, PILSBRY, NAUTILUS, VOL. 30, P. 83. LOCALITY: GUADALUPE RIVER, NEW BRAUNSFELS. SEE ALSO REFS. 3 AND 4.
- 1906 HORATIA MICRA NUGAX PILSBRY AND FERRISS, PROC. ACAD. NAT. SCI., PHILA., P. 173, PL. 9, FIG. 6. (VALVATA); 1916, PILSBRY, NAUTILUS, VOL. 30, P. 83, LOCALITY: GUADALUPE RIVER AT NEW BRAUNSFELS. SEE ALSO REFS. 3 AND 4.

- 1935 *POTAMOPYRGUS CHEATUMI* PILSBRY, NAUTILUS, VOL. 48, P. 91, TEXT FIG. 4. LOCALITY: PHANTOM LAKE NEAR TOYAHVALE, REEVES CO. SEE ALSO REF. 4.
- 1935 *COCHLIOPA TEXANA* PILSBRY, NAUTILUS, VOL. 48, P. 9, TEXT FIGS. 1-3. LOCALITY: PHANTOM LAKE NEAR TOYAHVALE, REEVES CO. SEE ALSO REF. 4.
- 1951 *LITTORIDINA (TEXADINA) SPHINCTOSTOMA* ABBOTT AND LADD, JOURN. WASH. ACAD. SCI., VOL. 41 (10), P. 335-338. LOCALITY: SAN ANTONIO BAY.
- 1960 *CALIPYRGULA CIRCUMSTRIATA* LEONARD AND HO, NAUTILUS, VOL. 73, P. 125, PL. 12, FIGS. 1-3. SEE ALSO REF. 5.
- 1960 *CALIPYRGULA PECOSENSIS* LEONARD AND HO, NAUTILUS, VOL. 73, P. 125, PL. 12, FIGS. 1-3. SEE ALSO REF. 5.
- 1965 *VIOSCALBA LOUISIANAE* MORRISON, PROC. BIOL. SOC. WASH., VOL. 78, P. 217-224. LOCALITY: BARATARIA BAY, LOUISIANA.
- 1965 "ODOSTOMIA" BARRETTI MORRISON, PROC. BIOL. SOC. WASH., VOL. 78, P. 217-224. LOCALITY: HERON BAY, MISSISSIPPI.

IN OTHER SOURCES THE FOLLOWING OTHER SPECIES HAVE BEEN REPORTED. MANY OF THESE WILL REQUIRE FURTHER CONFIRMATION.

- 1901 *POTAMOPYRGUS CORONATUS* PFEIFFER, DALL AND SIMPSON, MOLL. PORTO RICO, P. 434.
- 1928 *AMNICOLA INTEGRATA* (SAY) 1821, BAKER. THE FRESHWATER MOLLUSCA OF WISCONSIN, PART 1, GASTROPODA, WIS. GEOL. AND NAT. HIST. SURVEY, BULL. 70, 506PP., PLS. 1-28; SEE ALSO REFS. 6 AND 7.
- 1928 *AMNICOLA LIMOSA* (SAY) 1817, BAKER, IBID.
- 1928 *AMNICOLA LIMOSA PORATA* (SAY) 1821, BAKER, IBID.
- 1935 *PALUDESTRINA PROTEA* (GOULD) 1855, STRECKER, LAND AND FRESHWATER SNAILS, TRANS. TEXAS ACAD. SCI., VOL. 17. (NUECES RIVER DRIFT)
- 1935 *PALUDESTRINA SEEMANNI* (FRAUENFELD), TRANS. TEXAS ACAD. SCI., VOL. 17. (NUECES RIVER DRIFT).
- 1937 *HYROBIA PALOMASSENSIS* PILSBRY, E. P. CHEATUM, PROC. ACAD. SCI., TEX., VOL. 20, P. 13. (FORT DAVIS, TEXAS).
- 1963 *SOMATOGYRUS DEPRESSUS* TRYON, CHEATUM AND ALLEN, JOURN. GRAD. RES. CENTER, S.M.U., VOL. 31, (3), P. 174. (PLEISTOCENE NORTH TEXAS)
- 1963 *AMNICOLA* SP? CHEATUM AND ALLEN, JOURN. GRAD. RES. CENTER, S.M.U., VOL. 31, (3), P. 174. (PLEISTOCENE NORTH TEXAS)
- 1967 *LYRODES PARVULA* GUILDING 1828, HARRY, MARINE MOLLUSCA OF GALVESTON, TEXAS. TENTATIVE AND PRELIMINARY LIST, MAR. LAB. TEX. A&M UNIV., GALVESTON, TEX., 11P.
- 1968 *LYRODES MONROENSIS* FRAUENFELD, 1863, HARRY, MARINE MOLLUSCA OF GALVESTON, TEXAS. TENTATIVE AND PRELIMINARY LIST. MAR. LAB. TEX. A&M UNIV., GALVESTON, TEX., 2ND ED., 12P.

WE MAY ADD HERE A FEW COMMENTS CONCERNING THESE REPORTS. ON TEXAS BEACHES SEVERAL OF THESE SPECIES IN ALL PROBABILITY HAVE BEEN FOUND, BUT NO CERTAINTY EXISTS. THE VERY DISTINCTIVE BUT VARIABLE *CALIPYRGULA CIRCUMSTRIATA* LEONARD AND HO 1960 IS SOMETIMES QUITE COMMON IN BEACHDRIFT ON THE BEACHES OF THE SOUTHERN PART OF PADRE ISLAND. THIS SPECIES, AS FAR AS I KNOW, HAS NEVER BEEN FOUND ALIVE, AND IS ONLY KNOWN FROM PLEISTOCENE DEPOSITS ALONG THE PECOS RIVER. ITS OCCASIONAL ABUNDANCE IN BEACHDRIFT COULD INDICATE THAT IT STILL LIVES IN THE LOWER REACHES OF THE RIO GRANDE SYSTEM.

CONTINUED ON PAGE 55.....

ABOUT A YEAR AGO WE LISTED IN THIS PUBLICATION (TEXAS CONCHOLOGIST, Vol. V, pp. 54, 55, 68, 75, 88, 89, 92) THE STAMPS THAT FEATURED MOLLUSKS AS THE CENTRAL OR SECONDARY DESIGN. SINCE THAT TIME STAMP ISSUES PICTURING MOLLUSKS HAVE CONTINUED TO APPEAR. THE TABLE PRESENTED BELOW UPDATES THE INFORMATION THROUGH OCTOBER, 1969. WHENEVER POSSIBLE, SCOTT NUMBERS HAVE BEEN CHECKED WITH SCOTT'S STANDARD POSTAGE STAMP CATALOGUE 1970 AND WITH THE INFORMATION PUBLISHED IN SCOTT'S MONTHLY STAMP JOURNAL. REFERENCE MATERIAL FOR THE MORE CURRENT RELEASES NOT YET CLASSIFIED IN THE CATALOGUE OR THE JOURNAL WAS OBTAINED FROM LINN'S STAMP NEWS.

IN ADDITION TO LOCALLY WELL-KNOWN SPECIES (SUCH AS STROMBUS GIGAS IN THE CARIBBEAN COUNTRIES) AND UNIVERSALLY POPULAR FAVORITES (SUCH AS NAUTILUS POMPILIUS AND CHARONIA TRITONIS) A NUMBER OF FAMOUS RARITIES HAS BEEN PHILATELICALLY ILLUSTRATED. THESE INCLUDE MIKADOTROCHUS HIRASEI (JAPAN), CYPRAEA AURANTIUM (FIJI), CONUS GLORIAMARIS (PAPUA & NEW GUINEA), LAMBIS VIOLACEA (MAURITIUS), HARPA COSTATA (MAURITIUS), AND CONUS CLYTOSPIRA (MAURITIUS). INDEED, THE MOLLUSK-ON-STAMP STAMPS HAVE SO INCREASED IN NUMBER AND VARIETY THAT PHILATELIC SHELL-COLLECTING SHOULD PROVIDE BOTH EXCITING AND REWARDING EXPERIENCES FOR THE VENTURESOME HOBBYIST.

	<u>MOLLUSK</u>	<u>COUNTRY</u>	<u>YEAR</u>	<u>VALUE</u>	<u>SCOTT No.</u>
136.	OCTOPUS	URUGUAY	1968	15P	C335
137.	CUTTLEFISH	"	1968	50P	C339
138.	MITRA & TONNA	MALDIVE	1968	10L	283
139.	TURBO & ANGEL WING	ISLDS.	1968	25L	284
140.	" " "	"	1968	1R	286
141.	MITRA & TONNA	"	1968	2R	287
142.	MITRA EPISCOPALIS	MAURITIUS	1969	4Ç	341
143.	HARPA MAJOR & HARPA COSTATA	"	1969	30Ç	347
144.	ARGONAUTA ARGO	"	1969	35Ç	348
145.	HEXABRANCHUS MARGINATUS	"	1969	40Ç	349
146.	LAMBIS LAMBIS & LAMBIS VIOLACEA	"	1969	50Ç	350
147.	CONUS CLYTOSPIRA	"	1969	75Ç	352
148.	MUREX HAUSTELLUM	NEW CALEDONIA	1969	2F	374
149.	MUREX TIREMIS	"	1969	5F	375
150.	MUREX RAMOSUS	"	1969	15F	376
151.	MUREX BRUNNEUS	"	1969	100F	C65
152.	TURBO LAJONKAIRII	COCOS	1969	1Ç	8
153.	TRIDACNA CROCEA	"	1969	2Ç	9
154.	TRIDACNA DERASA	"	1969	3Ç	10
155.	SHELLS ON BORDER (FISH SERIES)	DUBAI	1969		101- 108
156.	STROMBUS GIGAS (IN DESIGN)	HAITI	1969		596- 598
157.	HARP SHELL	SHARJAH-KHOR	1969	2NP	-
158.	DISTORSIO	"	1969	1NP	-

THE INTERPRETATION OF DREDGED BOTTOM SAMPLES CANNOT BE MADE WITHOUT AN UNDERSTANDING OF THE GEOLOGIC PAST. IT IS NOW UNIVERSALLY ACCEPTED THAT AFTER THE LAST ICE AGE THE SEA LEVEL HAS RISEN SEVERAL HUNDRED FEET, SUBMERGING THE LARGE AREA WHICH NOW EXTENDS AS THE SHALLOW SHELF IN FRONT OF THE TEXAS-LOUISIANA COAST. OLD BAYS AND BARRIER SYSTEMS ARE NOW COVERED BY WATER AND THE DREDGE OFTEN BRINGS UP FROM LOCATIONS FAR OUT IN THE OPEN GULF SPECIES WHICH CAN ONLY LIVE IN THE SHELTERED ENVIRONMENT OF THE COASTAL BAYS. THE PROCESS OF TRANSGRESSION BY THE SEA PRESENTLY CAN BE SEEN AT MANY PARTS OF THE TEXAS COAST, FOR INSTANCE AT SARGENT AND THE BOLIVAR PENINSULA. WITHOUT THE INTERFERENCE OF MAN THE PROCESS WOULD PROCEED AT A FASTER RATE.

FROM THE FIRST THE TEXAS FAUNA HAS INVITED A COMPARISON WITH THAT OF THE CAROLINAS WHICH HAS BEEN CALLED "CAROLINIAN". MANY SPECIES FOUND ON THE CAROLINA COAST ALSO OCCUR IN ABUNDANCE IN THE WESTERN GULF. THEY ARE SEPARATED FROM THE ATLANTIC PROPER BY THE FLORIDA PENINSULA WHICH AT ITS SOUTHERN END SUPPORTS A DIFFERENT, MORE TROPICAL FAUNA CALLED "CARIBBEAN". IN EACH OF THESE SOCALLED "PROVINCES" THERE EXIST MANY TYPES OF ECOLOGICAL ASSEMBLAGES EACH WITH THEIR OWN SPECIALIZED COMPOSITION. IT HAS BEEN ASSUMED THAT SOMEWHERE ALONG THE TEXAS COAST, ABOUT MATAGORDA ISLAND, AN IMPORTANT FAUNAL BREAK OCCURS. THE MOLLUSCAN BEACH FAUNAS OF GALVESTON ON ONE HAND AND THOSE OF PADRE ISLAND ON THE OTHER INDEED SEEM TO POINT TO SUCH A CONCLUSION. I TAKE ISSUE WITH THIS INTERPRETATION AND IN MY OPINION THE DIFFERENCE IS CAUSED BY THE AFOREMENTIONED DIFFERENCE IN THE WATER REGIME OF THE COASTAL BAYS. EAST OF THE COLORADO RIVER DELTA, LARGE AMOUNTS OF RIVER WATER REGULARLY FRESHEN THE BAYS, BUT SOUTH AND WEST OF THIS RIVER THE BAYS HAVE LARGELY A HYPERSALINE CHARACTER. THE MOST WESTERLY PART OF GALVESTON BAY, WHICH CONNECTS WITH THE GULF THROUGH SAN LUIS PASS, AND WHICH IS MUCH LESS INFLUENCED BY RIVER RUNOFF THAN THE MAIN PART OF GALVESTON BAY, HAS YIELDED MORE SOUTHERLY ELEMENTS OF THE MOLLUSCAN FAUNA THAN ANY OTHER PART OF THE BEACHES EAST OF THE COLORADO RIVER. IT IS THUS PROBABLY CORRECT TO INCLUDE THE WHOLE OF THE TEXAS COAST IN THE SAME FAUNAL PROVINCE, REALIZING THAT IMPORTANT CHANGES ONLY MANIFEST THEMSELVES WHERE THE SUPPORTING ELEMENTS OF THIS FAUNA CHANGE. THE OCCASIONAL RICHNESS IN "RARE" SPECIES OF THE PADRE ISLAND BEACHES IS NOT SO MUCH A CONSEQUENCE OF A FAUNAL BREAK AS A CONSEQUENCE OF THESE TWO CAUSES: 1) DEEPER AND CLEARER WATER IS MUCH CLOSER TO SHORE THAN IT IS IN THE GALVESTON-FREEPORT AREA. MOST OF THE UNUSUAL SPECIES OF THE PADRE ISLAND BEACH HAVE BEEN OBTAINED BY DREDGING 30-40 MILES OFFSHORE IN THE GALVESTON-FREEPORT AREA. (TEL-LINA MAGNA, PTERIA, DISTORSIO, MODIOLUS AMERICANUS, TRACHYCARDIUM ISOCARDIA, NEOSIMNIA, CYPHOMA.) 2) THE BAYS HAVE A HYPERSALINE CHARACTER AND CONTAIN ELEMENTS ADAPTED TO SUCH AN ENVIRONMENT: ANOMALOCARDIA, BULLA, HAMINOEA, LUCINA, PHACOIDES, ETC. THESE SPECIES OCCUR ONLY SPARINGLY AT GALVESTON BUT ARE COMMON FURTHER SOUTH, WHERE THEY CONSEQUENTLY COMPOSE A LARGER PERCENTAGE OF THE BEACH DRIFT. THE PERSISTANCE OF THE TYPICAL TEXAS BAY FAUNA FAR SOUTH INTO MEXICO HAS BEEN DOCUMENTED IN A PAPER BY GARCIA CUBAS. PRACTICALLY ALL REPORTED SPECIES FOR THE LAGUNA DE TERMINOS HAVE BEEN COLLECTED ALIVE IN TEXAS SO THAT AT LEAST THE SHALLOW COASTAL BAY FAUNA FROM THE MISSISSIPPI TO VERA CRUZ SHOULD BE CONSIDERED THE SAME PROVINCE. THIS IS NOT SURPRISING. COASTAL CONDITIONS ARE MORE OR LESS THE SAME; MUDDY BAYS WITH VARIABLE SALINITY AND RELATIVELY MILD WINTERS. THE OFFSHORE FAUNA HOWEVER MAY CHANGE MORE DRASTICALLY FARTHER SOUTH. A SIMILAR FAUNAL "BREAK" OCCURS SOMEWHERE EAST OF THE MISSISSIPPI DELTA. THE DISCONTINUOUS DISTRIBUTION OF SEVERAL SPECIES EAST AND WEST OF THE DELTA SUPPORTS THE IDEA THAT WEST OF IT WE DEAL WITH A MORE BRACKISH AND MUDDY PART OF THE CAROLIN-

IAN PROVINCE WHILE IN THE EAST ITS ELEMENTS PREFER THE CLEARER AND SOMEWHAT WARMER WATERS OF THE EASTERN GULF. THE ABSENCE OF TRULY CARIBBEAN ELEMENTS ON THE WEST FLORIDA COAST NORTH OF TAMPA CLEARLY DESIGNATES THE FAUNA THERE AS CAROLINIAN. COLDER WINTER TEMPERATURES AND A DIFFERENT WATER REGIME WEST OF THE DELTA (LARGE SEDIMENT LADEN RIVERS) ARE RESPONSIBLE FOR THE DIFFERENCE.

IT IS REMARKABLE THAT A LARGE NUMBER OF SPECIES, COMMONLY FOUND DEAD IN BEACH DRIFT AROUND PORT ARANSAS AND PORT ISABEL ARE RARELY FOUND ALIVE OR HAVE NEVER BEEN FOUND ALIVE AT THESE LOCATIONS. THIS MIGHT INDICATE A CHANGE IN ENVIRONMENT DURING THE LAST 2000 YEARS. HOWEVER THESE SPECIES ARE STILL CAROLINIAN. MAN HAS DUG MANY ARTIFICIAL CHANNELS AND DEEPENED EXISTING ONES, SO THAT THIS "FOSSIL" MATERIAL CAME TO THE SURFACE. THE "SPOIL" IS NOW SLOWLY BEING DISTRIBUTED OVER THE AREA BY CURRENTS, ETC. IN THIS MANNER THE PRESENCE OF BATILLAREA MINIMA, CERITHIUM FLORIDANUM, CASSISPIRA OSTREARUM, ETC. MAY BE EXPLAINED AT PORT ARANSAS AND PORT ISABEL.

IN SUMMARY THEN, IT CAN BE STATE THAT THE TEXAS-LOUISIANA FAUNA WHICH SHOWS GREAT SIMILARITY WITH THAT OF THE CAROLINA'S IS FOUND ANOMALOUSLY FAR TO THE SOUTHWEST. ON THE OTHER HAND ITS TROPICAL ELEMENTS ON THE SHELF EDGE APPEAR TO BE DERIVED TO A LARGE EXTENT FROM THE FAUNA OF THE YUCATAN PLATFORM (DUE TO CURRENT DISTRIBUTION) AND ARE FOUND ANOMALOUSLY FAR TO THE NORTH. THE CLOSE PROXIMITY OF BOTH THESE FAUNAS MAKES THE NORTHWEST GULF OF MEXICO ONE OF THE MOST INTERESTING AREAS IN THE ENTIRE WESTERN ATLANTIC.

THE FIRST EXTENSIVE STUDIES OF THE COASTAL FAUNAS AND A CLASSIFICATION OF THEM WAS MADE IN A SERIES OF PAPERS BY PARKER. FOR CONVENIENCE WE MAY HERE ADHERE TO A DIVISION OF THE FAUNA INTO THREE CATEGORIES:

- I. THE BAY AND SHORE ASSEMBLAGES
- II. THE OPEN GULF BOTTOM ASSEMBLAGES
- III. THE PELAGIC ASSEMBLAGES

TO BE CONTINUED. . . . .

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. . . . .CONTINUED FROM PAGE 52

THE SHELL REPORTED AS LYRODES MONROENSIS FRAUENFELD, IS OFTEN QUITE COMMON ON THE BEACHES OF GALVESTON ISLAND. IT COMES FROM THE LOWER REACHES OF THE SAN JACINTO AND TRINITY RIVERS WHICH ARE BUILDING DELTAS INTO GALVESTON BAY. FROM BEACHDRIFT ON MATAGORDA BEACH SEVERAL OTHER AND SMALLER SPECIES ARE KNOWN BUT WILL HAVE TO AWAIT IDENTIFICATION UNTIL LIVE POPULATIONS CAN BE DISCOVERED.

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- 2) SINGLEY, J. A., 1893, CONTRIBUTIONS TO THE NATURAL HISTORY OF TEXAS, PT. 1, TEXAS MOLLUSCA, GEOL. SURVEY TEXAS, FOURTH ANN. REPORT, P. 297-343.
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- 4) STRECKER, J. K., 1935, LAND AND FRESHWATER SNAILS OF TEXAS, TRANS. TEX. ACAD. SCI., VOL. 17.

- 5) LEONARD, A. B., AND FRYE, J. C., 1962, PLEISTOCENE MOLLUSCAN FAUNAS AND PHYSIOGRAPHIC HISTORY OF PECOS VALLEY IN TEXAS, UNIV. TEX. BUR. ECON. GEOL., REP. IM. NO. 45, 29P., 4 PL.
- 6) CHEATUM, E. P., AND ALLEN, D. (1963), AN ECOLOGICAL COMPARISON OF THE BEN FRANKLIN AND CLEAR CREEK LOCAL MOLLUSCAN FAUNAS IN TEXAS, JOURN. GRAD. RES. CENTER, S.M.U., VOL. 31 (3), P. 174-179.
- 7) BRANSON, B. A., 1967, NOTES ON AND MEASUREMENTS OF RIVER DRIFT SNAILS FROM TEXAS. TEX. JOURN. SCI., VOL. 19 (3), P. 292-300.

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BOOK REVIEW

BY H. ODE

THE AQUATIC SNAILS OF THE FAMILY HYDROBIIDAE OF PENINSULAR FLORIDA, BY FRED G. THOMPSON, UNIVERSITY OF FLORIDA PRESS, GAINESVILLE, 1968. \$8.00.

THE FIRST SYSTEMATIC STUDY OF THIS EXTREMELY DIFFICULT FAMILY PERTAINING TO A RELATIVELY SMALL PART OF THE CONTINENTAL U.S.A. HAS RECENTLY APPEARED. IT IS A BEAUTIFUL BOOK, WELL PRINTED AND CONTAINING SOME OF THE BEST SHELL DRAWINGS I HAVE EVER SEEN, (BY MRS. BARBARA WEBB). BY FAR THE MAJOR PART OF ITS 268 PAGES IS DEVOTED TO A SYSTEMATIC ACCOUNT OF THE VARIOUS FLORIDA SPECIES AND ONLY A RELATIVELY BRIEF ACCOUNT IS GIVEN OF THE GENERAL SYSTEMATICS OF THE FAMILY. THE AUTHOR EMPHASIZES THAT AT PRESENT SUCH A MORE DETAILED ACCOUNT IS IMPOSSIBLE AND THAT MORE ANATOMICAL INVESTIGATIONS HAVE TO BE MADE. THEREFORE THIS BOOK CANNOT BE USED AS AN IDENTIFICATION GUIDE OF DEAD SHELLS OF THIS FAMILY. A NUMBER OF NEW GENERIC NAMES, HELEOBOPS, ONOBOPS, HYALOPYRGUS, APHAOSTRACON, SPILOCHLAMYS IS INTRODUCED. IN TOTAL 35 SPECIES ARE DISCUSSED DIVIDED OVER 10 GENERA. OF THESE 23 SPECIES ARE NEW.

ACCORDING TO THE AUTHOR ONLY A SINGLE SPECIES IS TYPICALLY WEST INDIAN; A FEW HAVE MIGRATED INTO FLORIDA ALONG THE NORTHERN COAST OF THE GULF, WHILE THE MAJORITY OF SPECIES IS TRULY ENDEMIC. USEFUL ARE THE DISTRIBUTION MAPS WHICH ARE SHOWN FOR ALL DISCUSSED SPECIES. IT BECOMES ONCE MORE APPARENT FROM THIS BOOK THAT MANKIND IS DESTROYING THE HABITAT OF MANY SPECIES AT AN ALARMING RATE. ON PAGE 127 THE AUTHOR RELATES THAT THE TYPE LOCALITY, THE ONLY LOCATION FROM WHICH A CERTAIN SPECIES IS KNOWN, WAS "IMPROVED" AS THE SITE OF A NEW POWER GENERATING PLANT.

ON PAGE 152 THE AUTHOR PRESENTS AN EXCELLENT EXAMPLE OF WHY PATRONIMICS SHOULD BE AVOIDED IN TAXONOMY.

THE ONLY CRITICAL REMARK I HAVE TO MAKE CONCERNS THE SLIGHT INCONSISTENCY IN THE USE OF LATIN NAMES. FOR A FEW NAMES THE LATIN DERIVATION IS GIVEN, WHILE FOR OTHERS THE AUTHOR NEGLECTED TO DO SO. IT WOULD BE A SERVICE TO THE GENERAL READER, WHO NOWADAYS IS NOT FAMILIAR WITH GREEK OR LATIN TO EXPLAIN PRECISELY THE DERIVATION OF ALL NEWLY PROPOSED NAMES, GENERIC OR OTHERWISE, AND TO STATE CLEARLY WHETHER SUCH A NAME IS TO BE CONSIDERED AN ADJECTIVE OR NOT. ALTHOUGH THE AUTHOR HAS STATED (P. 76) THAT THE GENDER OF APHAOSTRACON IS NEUTER, HE USES CONSISTENTLY MASCULINE ENDINGS IN THE SPECIFIC NAMES (F. I. RHADINUS FROM THE GREEK *ῥαδινός* - SLENDER). THE NUMBER OF MISPRINTS IN NAMES IS VERY SMALL (VIASCALBA FOR VIOSCALBA) ON PAGE ONE. WE HOPE THAT IN THE FUTURE THE AUTHOR WILL EXTEND HIS STUDIES TO OTHER AREAS OF THE AMERICAS.

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# CONCHOLOGIST

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## NOTES & NEWS

### NEXT MEETING

A SHELL AUCTION WILL BE HELD AT THE MEETING FEBRUARY 25 AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE. MRS. CLARICE VAN ERP WILL SWING FORTH WITH HER ROLE AS AUCTIONEER. DR. W. W. SUTOW TELLS US THAT THE LOT OF SHELLS FROM GUAM INCLUDES SOME VERY NICE TEREBRAS, CONES AND CYPRAEA THAT WERE NOT ON DISPLAY LAST YEAR. SEVERAL MEMBERS OF THE CLUB AND OUT-OF-TOWN FRIENDS ARE DONATING OTHER SHELLS FOR THE SALE. SO COME AND BRING ALL THE "SHELL MONEY" YOU CAN. THIS WILL BE YOUR CHANCE TO GET THESE SHELLS BEFORE THEY GO ON SALE AT THE SHARPSTOWN MALL FAIR.

### REPORT LAST MEETING

MR. LAURENCE DEXTER SPOKE A FEW WORDS IN MEMORY OF MR. ARMAND YRAMATAGUI, WHOSE TRAGIC DEATH CAME AS A SHOCK TO HIS MANY FRIENDS IN OUR SOCIETY. AFTER READING OF THE MINUTES A NEW SECRETARY WAS APPOINTED. OUR NEW MEMBER, FRANK VAN MORKHOVEN VOLUNTEERED. THE NOMINATING COMMITTEE IS: TOM KISTER, LAURENCE DEXTER AND DOUG REYNOLDS. ALSO THE SHELL FAIR COMMITTEE WAS APPOINTED: MARY SUTOW, JOHN EKSTROM, JEAN DASHIELL AND CLAIRIE VAN ERP.

CONNIE BOONE GAVE THE REPORT FOR THE LIBRARY COMMITTEE, AND SHOWED SOME OF OUR NEW ACQUISITIONS. THE LIBRARY WILL SOON BE HOUSED IN THE MUSEUM, BUT THE CURRENT FLU EPIDEMIC HAS DELAYED THE TRANSFER.

CHARLIE DOH GAVE A MOST ENTERTAINING TALK ABOUT HIS DIVING TRIPS IN THE MEDITERRANEAN AND PACIFIC. NOT ONLY IS CHARLIE AN ACCOMPLISHED DIVER, BUT ALSO A FIRST RATE PHOTOGRAPHER.

### OUR NEW MEMBERSHIP CARDS

THOSE WHO ATTENDED OUR LAST MEETING WERE HANDED A BEAUTIFUL MEMBERSHIP CARD. THE PRESIDENT WAS AMISS NOT TO MENTION THE STORY BEHIND THEM. SEVERAL MONTHS AGO LEOLA AND BERKELEY GLASS OFFERED THE SOCIETY TO HAVE A SET OF THE CARDS PRINTED, WHICH OFFER OF COURSE WAS THANKFULLY ACCEPTED. JIM GLASS, THEIR SON, WHO IS A PROFESSIONAL DESIGNER, DREW THE ATTRACTIVE DESIGN.

THOSE WHO WERE NOT PRESENT AT OUR LAST MEETING WILL BE MAILED A CARD WITH THIS ISSUE.

AT THIS PLACE, THE SOCIETY OFFERS ITS SINCERE THANKS TO BERKELEY, LEOLA AND JIM GLASS.

CONTINUED ON PAGE 68.....

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY MYTILIDAE (CONTINUED)

MODIOLUS AMERICANUS LEACH 1815. THIS WELL KNOWN SPECIES IS, EXCEPT ON SOUTH PADRE ISLAND, UNCOMMON ON TEXAS BEACHES. IT IS QUITE RARE AT GALVESTON, WHERE ONLY A FEW LOOSE VALVES HAVE BEEN FOUND. LIVE SPECIMENS ATTACHED TO CLUMPS OF WHIPCORAL ARE NOT UNCOMMONLY FOUND AT SOUTH PADRE ISLAND. FIGURED IN: 1, 2, 3, 4, 5, 6  
PREVIOUS REFERENCES: 11, 15, 19, 20  
LOCALITIES: GALVESTON (RARE), ST. JOSEPH ISL., PORT ARANSAS, SOUTH PADRE ISLAND.

MODIOLUS DEMISSUS GRANOSISSIMUS SOWERBY 1914. THIS LARGE CHARACTERISTIC BAY SPECIES OCCURS IN MANY EAST TEXAS BAYS, BUT APPARENTLY THE BAYS FROM CORPUS CHRISTI SOUTH BECOME TOO SALINE FOR THIS SPECIES. IT IS COMMON AROUND THE FRINGES OF GALVESTON BAY AND MATAGORDA BAY (WEST OF PALACIOS). THEY LIVE MOSTLY BETWEEN THE ROOT MASSES OF VEGETATION AT THE WATERS EDGE. SURPRISINGLY HARDLY EVER FOUND ON THE OUTER BEACHES NEAR GALVESTON, AND THEN USUALLY BROUGHT IN BY GULLS, WHO EAT THEM. LIVE AND FRESH SPECIMENS ARE OCCASIONALLY IN OR ATTACHED TO ROOT MASSES STRANDED UPON THE GULF BEACHES IN THE CORPUS CHRISTI AREA. (COLL. SPEERS).  
FIGURED IN: 1, 4, 5, 6  
PREVIOUS REFERENCES: 11, 24  
LOCALITIES: GALVESTON BAY, MATAGORDA BAY, CORPUS CHRISTI BAY.

LIOBERUS CASTANEUS SAY 1822. THIS SPECIES CAN BE COLLECTED ALIVE TOGETHER WITH M. AMERICANUS FROM CLUMPS OF WHIPCORAL AT ARANSAS PASS AND SOUTH PADRE ISLAND. LIVE MATERIAL MAY OCCASIONALLY BE OBTAINED IN DREDGINGS FROM THE BAY INLET AREA. IN OFFSHORE DREDGE MATERIAL LIVE SPECIMENS ARE SOMETIMES OBTAINED ENVELOPED IN A "NEST" COMPOSED OF SHELL FRAGMENTS HELD BY THE BYSSUS THREADS.  
FIGURED IN: 1, 2, 3, 4  
PREVIOUS REFERENCES: 11, 12, 51  
LOCALITIES: PORT ARANSAS, SOUTH PADRE ISLAND.

AMYGDALUM PAPHYRIA CONRAD 1846. THIS THIN AND BEAUTIFUL SHELL IS FOUND ALONG THE ENTIRE TEXAS COAST, BUT NEVER IN GREAT QUANTITIES. ONCE AT PORT ISABEL A GREAT NUMBER OF LIVE AND FRESH SPECIMENS WAS COLLECTED (ODÉ). IT IS KNOWN FROM GALVESTON BAY AND MATAGORDA BAY (PALACIOS AND INDIANOLA)



AND FROM AROUND ROCKPORT , PORT ARANSAS AND PORT ISABEL . IT LIVES AS A NESTLER IN ROOT MASSES AND EMPTY SHELLS .

FIGURED IN: 1,2,3,4,5,6

PREVIOUS REFERENCES: 11, 12, 13, 14, 19, ETC .

LOCALITIES: GALVESTON , PALACIOS , INDIANOLA , PORT ARANSAS , PORT ISABEL .

MUSCULUS LATERALIS SAY 1822. THIS SPECIES IS QUITE RARE AT GALVESTON (COLL. BOONE) BUT IS NOT UNCOMMON AT PORT ARANSAS AND IS COMMON AT PORT ISABEL . LIVE SPECIMENS HAVE BEEN OBTAINED AT THE LAST NAMED LOCATIONS (REF. 23, SPEERS) . LIVES ATTACHED TO THICK CLUSTERS OF ALGAE . IS UNCOMMONLY DREDGED OFFSHORE GALVESTON ON MUD BOTTOMS .

FIGURED IN: 1,2,3,4,5,6

PREVIOUS REFERENCES: 19, 23, HARRY 1967 .

LITHOPHAGA BISULCATA ORBIGNY 1842. THIS IS A COMMON BORING SHELL WHICH IS OFTEN FOUND ALIVE IN OLD OYSTER VALVES AT PORT ARANSAS . AT SARGENT ALSO FOUND IN ROCKS . LESS COMMON AT GALVESTON BUT WIDE SPREAD IN OFF-SHORE DREDGINGS .

FIGURED IN: 1,2,3,4,5,6,21

PREVIOUS REFERENCES: 11, 12, 16, 18, 19, 21, ETC .

LOCALITIES: ALONG ENTIRE TEXAS COAST BUT MORE COMMON TO THE SOUTHWEST .

LITHOPHAGA ARISTATA DILLWYN 1817. THIS SPECIES HAS ONLY BEEN TAKEN FROM ROCK AT PORT ARANSAS AND PORT ISABEL (BOTH COLL. SPEERS) WHERE IT IS LESS COMMON THAN L. BISULCATA . SO FAR NOT FOUND AT GALVESTON .

FIGURED IN: 1,2,4,6,21

PREVIOUS REFERENCES: 18, 21

LOCALITIES: PORT ARANSAS , PORT ISABEL

ADULA SP. THIS POSSIBLY UNDESCRIBED SPECIES WAS DISCOVERED SEVERAL YEARS AGO , BY A . SPEERS IN THE EMPTY TUBES BORED BY BANKIA OR TEREDO IN A PIECE OF DRIFTWOOD FOUND AT PORT ARANSAS . A SIMILAR FIND WAS MADE SOMEWHAT LATER ON MATAGORDA BEACH (COLL. ODÉ) WHERE A PIECE OF TROPICAL HARDWOOD WAS COLLECTED FULL WITH LIVE AND FRESHLY DEAD SPECIMENS . SINCE THAT TIME OTHER SPECIMENS HAVE BEEN COLLECTED IN WOOD ON PADRE ISLAND GULF BEACH NEAR BOB HALL PIER (SPEERS) AND AT GALVESTON , SAN LUIS PASS (COLL. ODÉ) . TWO LIVE SPECIMENS WERE COLLECTED FROM LITHOPHAGA HOLES IN AN OLD SHELL AT THE PASS INLET AREA AT SOUTH PADRE ISLAND (COLL. SPEERS) . SEVERAL LOTS OF THIS SPECIES HAVE BEEN OBTAINED OFFSHORE GALVESTON IN THE OPEN GULF .

FIGURED IN: NOT AVAILABLE

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON , MATAGORDA ISL. , PORT ARANSAS , SOUTH PADRE ISL .

REMARKS: SEVERAL OTHER SPECIES OCCUR IN TEXAS OFFSHORE WATERS: LITHOPHAGA NIGRA (CORAL BANKS) , CRENELLA SP. (VERY DEEP WATER) , BOTULA FUSCA (CORAL BANKS) , AMYGDALUM SP. (SHALLOW SHELF) .

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IN "TULANE STUDIES IN GEOLOGY AND PALEONTOLOGY" , VOL. 7 (4) , P. 143-191 , HAS APPEARED A PAPER BY R. L. GERTMAN ABOUT THE SUBFAMILY TYPHINAE (MURICIDAE) . IN IT THE REPRESENTATIVES , FOSSIL AND RECENT , OF THE WESTERN ATLANTIC REGION

CONTINUED ON PAGE 60 . . . . .

SOME YEARS BACK (IN 1962 OR 1963) I SENT A LETTER TO THE JACKSONVILLE SHELL CLUB IN FLORIDA INQUIRING ABOUT SHELL TRADING POSSIBILITIES. I RECEIVED A FRIENDLY REPLY FROM MRS. ELIZABETH EUBANKS. THE NET RESULT WAS A SERIES OF SHELL EXCHANGES. LIZ EUBANKS WAS THEN THE VIGOROUS EDITOR OF THE JACKSONVILLE SHELL CLUB PUBLICATION CALLED THE SHELL-O-GRAM.

GOOD FORTUNE SMILED ON US. IN 1964 LIZ AND HER FAMILY MOVED TO PASADENA AND IMMEDIATELY JOINED OUR SHELL CLUB. LIZ BROUGHT WITH HER A PROFOUND KNOWLEDGE ABOUT SHELLS AND A CONTAGIOUS ENTHUSIASM FOR THE HOBBY. WHEN OUR CLUB VOTED TO START A CLUB PUBLICATION LIZ EUBANKS WAS ELECTED TO BE THE FIRST EDITOR. LIZ REMAINED EDITOR OF THE TEXAS CONCHOLOGIST THROUGH VOLUME ONE. SHE FORMULATED MANY OF THE BASIC EDITORIAL POLICIES FOR THE PUBLICATION.

IN THE SUMMER OF 1965 THE EUBANKS FAMILY WAS TRANSFERRED TO DALLAS. OVER THE NEXT FOUR YEARS, LIZ NOT ONLY TOOK CARE OF HER FAMILY BUT ALSO STUDIED AT THE NORTH TEXAS STATE UNIVERSITY. SHE WAS AWARDED THE MASTER OF ARTS DEGREE IN AUGUST 1969. LIZ IS NOW LIVING AT 9353 BERMUDA AVE., BATON ROUGE, LOUISIANA 70810, WHERE SHE IS WORKING TOWARD A DOCTORATE IN MICROBIOLOGY. OUR FORMER EDITOR WRITES AND SAYS MOLLUSKS ARE STILL HER HOBBY. WE ARE PROUD AND WE WISH HER WELL.

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WE FINALLY GOT UP TO LITTLE ROCK, ARKANSAS, LAST SEPTEMBER AND INSPECTED FIRSTHAND THE SHELL MUSEUM THAT THE GEORGE MAJORS HAVE RECENTLY BUILT. IT WAS MOST IMPRESSIVE! GEORGE AND MARY MAJOR HAVE ADDED A TWO-FLOOR EXTENSION TO THEIR HOME - JUST TO HOUSE AND DISPLAY THEIR COLLECTION OF WORLD-WIDE SEASHELLS. A GREAT DEAL OF PLANNING PRECEDED THE CONSTRUCTION OF THIS ADDITION. THE MAJORS NOW HAVE A SPACIOUS DISPLAY ROOM, WORK TABLES, AND PLENTY OF STORAGE FACILITIES. BUT THE UNFORGETTABLE THINGS ABOUT ANY VISIT WITH THE MAJORS ARE THE GRACIOUS HOSPITALITY THAT THESE HOSTS UNFAILINGLY EXTEND TO ANY GUEST AND THE ENTHUSIASM WITH WHICH THEY WILL SHOW YOU AROUND.

IT HAS BEEN MENTIONED HERE BEFORE BUT IT BEARS REPEATING. IF YOU ARE IN THE LITTLE ROCK AREA, TAKE TIME OUT TO VISIT THE MAJORS. THEY, AS WELL AS THE JUNIOR FAMILY (GEORGE, JUNIOR AND LYNN), WILL WELCOME YOU. JUST ONE THING, BOTH GEORGE AND MARY HOLD JOBS DURING WORKING HOURS SO IT WOULD BE ESSENTIAL TO WRITE OR CALL THEM FIRST. THE MAJORS LIVE IN THEIR "HOBBY HOUSE" AT 4405 WEST 8TH STREET IN LITTLE ROCK. THE PHONE NUMBER IS 501-663-2280. (THE MAJORS HAVE BEEN SUBSCRIBERS TO THIS PUBLICATION FOR YEARS).

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.....CONTINUED FROM PAGE 59

ARE DISCUSSED. IN THE JANUARY ISSUE OF THE TEXAS CONCHOLOGIST, VOL. 5, P. 48, 1969, THE FIGURE OF A SMALL TYPHIS WAS PUBLISHED AND DISCUSSED BY OUR MEMBER MILDRED TATE IN THE ACCOMPANYING ARTICLE. THE IDENTITY OF THIS SHELL, WHICH WAS DREDGED OFFSHORE FREEPORT, IS TYPHIS SOWERBII BRODERIP 1833. IT IS ONE OF THE SEVEN RECENT SPECIES KNOWN FROM THE WESTERN ATLANTIC AND SO FAR THE ONLY ONE KNOWN FROM THE GULF OF MEXICO. IN GERTMAN'S PAPER THE SPECIES IS FIGURED ON PLATE 1, FIGS. 5A, 5B, 5C.

MENESTHO IMPRESSA SAY 1822.

THIS VERY COMMON SPECIES OCCURS IN ALL BAYS ALONG THE TEXAS COAST WHERE IT LIVES ON THE COMMON OYSTER. ALTHOUGH NOT AS COMMON IN THE GALVESTON AREA AS FURTHER SOUTH AROUND CORPUS CHRISTI AND PORT ISABEL IT IS THE MOST WIDESPREAD OF ALL PYRAMIDELLIDS OF THE BAY SYSTEMS. IT BELONGS TO THE GROUP OF CHALKY, THICK SHELLED, HEAVILY ORNAMENTED ODOSTOMIAS OF WHICH WE HAVE ALREADY FIGURED SEVERAL ONES. THE SPECIMENS FIGURED HERE ARE IN TYPICAL BEACH CONDITION AS THEY WERE COLLECTED AROUND PORT ARANSAS. IN SPITE OF ITS ABUNDANCE IN DRIFT RELATIVELY FEW REFERENCES TO THIS SPECIES IN TEXAS EXIST. THE EARLIEST IS BY SINGLEY, 1892, IN THE 4TH ANNUAL REP. OF THE GEOL. SURV. TEXAS; SOME YEARS LATER IT WAS LISTED BY MITCHELL IN HIS UNDATED LIST. AFTER THAT LADD 1951, PULLEY 1952, PUFFER AND EMERSON 1953, PARKER 1955, 1956, 1959, RICE 1960 AND HARRY 1967, 1968 LISTED THE SPECIES FOR TEXAS.

IT IS ONE OF THE LEAST DIFFICULT TO IDENTIFY OF ALL TEXAS PYRAMIDELLIDS. THOSE INTERESTED IN FURTHER INFORMATION WE REFER TO THE FOLLOWING SOURCES:

- 1822 TURRITELLA IMPRESSA SAY, JOURN. ACAD. NAT. SCI. PHILA., 2, P. 244  
1870 ODOSTOMIA IMPRESSA GOULD, INV. MASS., ED. BINNEY, P. 330, FIG. 600  
1892 ODOSTOMIA IMPRESSA SAY, DALL. TRANS. WAGNER FREE INST. SCI., VOL. 3, PT. 2, P. 251.  
1909 ODOSTOMIA (MENESTHO) IMPRESSA SAY, BARTSCH, PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 103, PL. 13, FIG. 51.  
1955 ODOSTOMIA (MENESTHO) IMPRESSA SAY, PERRY AND SCHWENGEL, MAR. SHELLS WEST COAST FLORIDA, P. 122, PL. 23, FIGS. 162.

THE PHOTOGRAPH OF THREE SPECIMENS COLLECTED FROM DRIFT ALONG THE PORT ARANSAS CAUSEWAY WAS TAKEN BY MR. C. DEXTER.



## PART III. BAY AND SHORE ASSEMBLAGES

THE GREAT MAJORITY OF BEACH SHELLS IN TEXAS DERIVES FROM THE BAYS AND THE SURF-ZONE AND BUT A FEW SPECIES ORIGINATE FROM THE OPEN GULF. THE BAY FAUNA IS A RATHER VARIED ONE. IN THE UPPER BAYS NEAR THE RIVER DELTAS ONE FINDS A CHARACTERISTIC BRACKISH WATER FAUNA. IT IS NOT RICH IN SPECIES, BUT BECAUSE IT HAS BEEN UNFORTUNATELY LITTLE STUDIED, IT IS NOT WELL KNOWN. ITS MOST CHARACTERISTIC COMPONENTS ARE THE SMALL GASTROPODS OF THE FAMILY HYDROBIIDAE. MANY MEMBERS OF THIS FAMILY ARE SPECIALLY ADAPTED TO COPE WITH THE OFTEN RAPIDLY CHANGING CONDITIONS OF TEMPERATURE AND SALINITY AND AS ALSO NOTICED IN WESTERN EUROPE, POLLUTION. IN TEXAS THERE ARE SEVERAL SPECIES: LITTORIDINA SPHINCTOSTOMA, VIOSCALBA LOUISIANAE, "ODOSTOMIA" BARRETTI, ARE KNOWN TO LIVE HERE AND IT IS PROBABLE THAT FURTHER INVESTIGATION WILL REVEAL MORE SPECIES. BIVALVES ARE FEW. CONGERIA LEUCOPHEATA IS THE ONLY BIVALVE WHICH CAN WITHSTAND EXTREMELY LOW SALINITIES AND THUS RANGES FARTHER UPSTREAM THAN ANY OTHER SPECIES. OCCASIONALLY SPECIES MORE TYPICAL FOR THE ENCLOSED BAYS ARE FOUND HERE. NUMEROUS SPECIMENS OF BRACHIDONTES RECURVUS CAN BE FOUND ATTACHED TO PILINGS AND OTHER OBJECTS, RANGIA, IN SOFT MUD BOTTOMS AND MODIOLUS DEMISSUS DUG IN BETWEEN THE MATTED ROOTS OF VEGETATION.

THE BAY ASSEMBLAGES PROPER HAVE BEEN CLASSIFIED BY PARKER AND OTHERS IN A GREAT MANY CATEGORIES. IT SEEMS TO ME THAT SUCH A DIVISION IS RATHER BASED ON CONVENIENCE OF CLASSIFICATION THAN THAT IT REFLECTS A TRULY EXISTING BIOLOGICAL DIFFERENCE. HEDGPETH PREFERS TO USE FOR ALL BAY COMMUNITIES THE TERM "OYSTER BOTTOM" AFTER ITS MOST CHARACTERISTIC MOLLUSK CRASSOSTREA VIRGINICA. A DISTINCTION MUST BE MADE BETWEEN BAYS OF VARIABLE SALINITY AND THE HYPERSALINE BAYS OF SOUTH TEXAS. AS FURTHER CATEGORIES ONE HAS TO ADD: THE INLET AND SURFZONE COMMUNITY AND THE VERY SPECIAL JETTY AND PILINGS COMMUNITY, WHICH IN TEXAS REPRESENTS A COMPLETELY ARTIFICIAL ENVIRONMENT. THE ARTIFICIAL JETTIES HAVE BEEN STUDIED IN MANY PLACES IN THE WORLD AND ALWAYS EXHIBIT A ZONATION OF THEIR BIOTA. SUCH A ZONATION CAN ALSO BE SEEN ON TEXAS JETTIES AND IT IS WELL KNOWN TO COLLECTORS THAT SOME "RARE" SPECIES CAN BE OBTAINED AT THE END OF THE LARGER TEXAS JETTIES, WHERE THE WATER IS DEEP (CANTHARUS TINCTUS, BARBATIA, ARCA, ETC.)

THE BAYS THEMSELVES HAVE BEEN DIVIDED INTO: 1) ENCLOSED BAYS, USUALLY THE UPPER PARTS OF THE COASTAL BAYS WHICH EMPTY INTO ANOTHER PART OF THE SYSTEM. EXAMPLE: TRINITY BAY OF THE GALVESTON SYSTEM OR NUECES BAY OF THE CORPUS CHRISTI SYSTEM. 2) THE OPEN BAYS, I.E. THOSE PARTS OF THE BAY SYSTEM WHICH ARE IN DIRECT CONTACT WITH THE OPEN SEA THROUGH PASSES. IN THESE BAYS EXIST MANY DIFFERENTIATIONS OF ENVIRONMENT, SOME OF WHICH SUPPORT A CHARACTERISTIC ENSEMBLE OF SPECIES. MANY OF THESE SPECIES WILL OCCUR IN OTHER ENVIRONMENTS BUT IN DIFFERENT PROPORTION TO THE TOTAL FAUNA. THE MOST CLEARLY DEFINED COMMUNITY IS THAT OF THE LOW SALINITY OYSTER REEF WHICH SUPPORTS A NUMBER OF SPECIAL SPECIES. THE IRREGULAR SURFACES OF THE OYSTERS PROVIDE A SHELTER FOR MANY SMALLER GASTROPODS WHICH LIVE IN ABUNDANCE ON THE REEF. IN THE UPPER PARTS OF THE BAY SYSTEM THE MAIN COMPONENT OF THE REEF MATRIX IS CRASSOSTREA VIRGINICA WHILE CLOSER TO THE INLETS THIS SPECIES MAY BECOME REPLACED BY THE SMALLER NONCOMMERCIAL OSTREA EQUESTRIS (HIGH SALINITY SHELL BANK OF PARKER).

OF THE SMALLER GASTROPODS A NUMBER LIVES DIRECTLY ON THE OYSTER (MENESTHO IMPRESSA, BUSHIANA, ETC.), BUT OTHERS FIND A SHELTER ON THE OYSTER BECAUSE OF THE

MAT OF GREEN ALGAE WHICH OFTEN GROWS ON THEIR OUTER SURFACE (BITTIUM, MITRELLA, SEILA, ANACHIS, PYRGOCYTHARA PlicosA, THE ONLY TEXAS BAY TURRID.) THE PRECISE MODE OF LIFE OF THESE SPECIES IS NOT WELL KNOWN. SOME ARE PROBABLY VEGETARIANS (BITTIUM, SEILA?) OTHERS AS ANACHIS AND MITRELLA PREY ON OTHER ORGANISMS WHICH ALSO LIVE ON THE REEF. A FEW ATTACHING BIVALVES ARE FOUND ON THE OYSTERS (BRACHIDONTES EXUSTUS). SMALLER PATCHES OF OYSTERS ARE FOUND THROUGHOUT THE ENTIRE BAY SYSTEM, EVEN CLOSE TO THE INLETS. THERE THE CLUMPS CAN SUPPORT MANY OTHER SPECIES WHICH ARE CONDITIONED TO RATHER HIGH SALINITIES (DIODORA, ISCHNOCHITON). THE CHARACTERISTIC BORING MOLLUSK IS DIPLOTHYRA SMYTHI WHICH LIVES IN ABUNDANCE IN DEAD OYSTER SHELLS. LESS COMMON ARE DIPLODONTA SEMIASPERA, GASTROCHAENA HIAN AND LITHOPHAGA BISULCATA, SPECIES WHICH DO OCCUR IN THE HIGHER SALINITY REEFS BUT WHICH ARE PROBABLY MORE AT HOME IN THE DEEPER WATER OF THE INLETS.

BAY MARGINS PROVIDE A SPECIAL ENVIRONMENT. MELAMPUS IS VIRTUALLY A LAND SNAIL AND ALSO LITTORINA IRRORATA SPENDS MOST OF ITS TIME ABOVE WATER. ON THE VERY MUDDY SHORES DUG IN BETWEEN THE ROOTS OF VEGETATION LIVE MODIOLUS DEMISSUS AND TAGELUS PLEBEIUS AND TRUNCATELLA PULCHELLA IS OCCASIONALLY FOUND IN HEAPS OF ROTTING VEGETATION AT THE BAYSHORES. A NUMBER OF SMALL GASTROPODS HAS BEEN COLLECTED ALONG THE MARGINS: SEVERAL SPECIES OF SAYELLA, ODOSTOMIA WEBERI, ASSIMINEA, APPEAR RESTRICTED TO THE MARGINS. MACOMA MITCHELLI AND M. TENTA APPEAR TO BE SPREAD THROUGH THE TOTAL ENVIRONMENT OF THE UPPER BAYS AND ARE NOT RESTRICTED TO THE MARGINS. ALL SPECIES FOUND AT THE BAY MARGINS ARE ADAPTED TO COPE WITH THE VAGARIES OF SUCH A LIFE: HIGH AND LOW TIDE, EXPOSING AND FLOODING THE MUDFLATS, ROTTING DEBRIS, CHANGES IN TEMPERATURE, ETC. IN SOME BAYS THE SOCALLED "GRASSFLATS" SUPPORT A COMMUNITY OF MOLLUSKS ADAPTED TO LIVE BETWEEN THE ROOTS AND ON THE THALASSIA STEMS (SMARAGDIA, TRICOLIA, RISSOINA, LUCINA, ETC.). A VERY UNUSUAL TYPE OF ENVIRONMENT HAS BEEN OBSERVED BY HEDGPETH IN BAFFIN BAY. HERE ARE LOCATED SMALL REEFS FORMED BY MASSES OF CALCAREOUS WORM TUBES (SERPULID REEF). HOWEVER THESE REEFS ARE NOT OF WIDESPREAD OCCURRENCE AND THE CONDITIONS WHICH FAVOR THEIR GROWTH SEEM NO LONGER TO PREVAIL BECAUSE NO LIVE REEF MASS HAS BEEN OBSERVED.

THE INLET AND SURFZONE FAUNA IS PROBABLY THE MOST VARIED NEAR THE INLETS AND RICHEST IN SPECIES. NEAR THE PASSES THROUGH WHICH SEA WATER ENTERS AND LEAVES THE BAYS, THE MUDFLATS CONTAIN A RICH VARIETY OF SPECIES OF BIVALVES AND GASTROPODS. OF COURSE MANY SPECIES OF THE OPEN GULF HAVE INVADDED THE BAYS AND SOME HAVE ASSUMED SLIGHTLY DIFFERENT SHAPES AND COLORATION. FOR INSTANCE POLINICES DUPLICATUS EXHIBITS A BAY FORM AND AN OPEN SEA FORM. THE FORMER IS MORE GLOBOSE AND HAS A DARKER COLORATION THAN THE ONE LIVING IN THE OPEN GULF. ANADARA TRANSVERSA GROWS MUCH HEAVIER AND LARGER IN THE SHELTERED BAYS THAN IN THE OPEN GULF.

THE SAME ZONATION AS ON THE JETTIES PROBABLY EXISTS ON THE BEACH. NEAR THE TIDELINE THE DONAX COMMUNITY LIVES IN PURE SHIFTING SANDS OFTEN TOGETHER WITH TEREBRA SALLEANA, TEREBRA MARYLEEAE AND OLIVA SAYANA. THESE SPECIES ARE SELDOM IF EVER FOUND ON THE INNER MUDFLATS WHERE THEY ARE REPLACED BY TEREBRA DISLOCATA AND OLIVELLA DEALBATA AND ON RARE OCCASIONS TEREBRA PROTEXTA (MR. BURCH HAS INFORMED ME THAT THIS IDENTIFICATION IS PROBABLY INCORRECT; AT A LATER DATE WE SHALL PUBLISH THE NECESSARY CORRECTIONS); THIS SPECIES PREFERS DEEPER WATER OF THE INLET CHANNELS AND BECOMES QUITE COMMON OFFSHORE.

IN THE TIDELINE OF TEXAS BEACHES MANY SPECIES OF SMALL MOLLUSKS CAN BE FOUND, SOME OF WHICH HARDLY EVER ARE FOUND ALIVE OR DEAD IN THE BAYS. SUCH SPECIES

MUST LIVE IN THE INLET AND SURF AREAS. NOW IT IS SOMEWHAT OF A PUZZLE HOW SUCH SMALL ANIMALS CAN MAINTAIN THEMSELVES IN SUCH A TURBULENT MEDIUM. IT IS EXTREMELY PROBABLE THAT MOST OF THEM LEAD AN EPIPHYTIC OR PARASITIC LIFE ON OTHER ORGANISMS WHICH ARE ANCHORED SECURELY TO THE SUBSTRATUM. FOR INSTANCE SOME VITRINELLIDS AND EPITONIIDS APPARENTLY LIVE ON WORMS. COUNTLESS OF THEIR LEATHERY TUBES, FORMED BY GLUEING SANDGRAINS AND SHELL FRAGMENTS ARE SOMETIMES FOUND AFTER A BLOW. MRS. C. BOONE DISCOVERED THAT MANY OF THE MICROMOLLUSKS CAN BE COLLECTED ALIVE BY CAREFULLY INSPECTING MASSES OF FRESH WORMTUBE MATERIAL. ALSO CYCLOSTREMELLA HUMILIS WAS COLLECTED ALIVE IN THIS MATERIAL. LARGER GASTROPODS SUCH AS POLINICES, MUREX, AND BUSYCON CAN DIG SO DEEP AS TO BE NOT DISTURBED BY WAVE ACTION. TYPICAL BIVALVES OF THE SURFZONE ARE LABIOSA PLICATELLA AND LINEATA. THEY RARELY IF EVER ARE FOUND IN THE BAYS AND OFFSHORE DREDGING DOES NOT REVEAL ANY, SO THAT THE ONLY POSSIBILITY LEFT IS THAT THEY LIVE IN THE SURFZONE. DURING WINTERTIME, AFTER A COLD SPELL, OCCASIONALLY LIVE MATERIAL IS FOUND AT THE TIDE-LINE. DOSINIA DISCUS, TELLINA ALTERNATA, ANADARA BRASILIANA ARE TYPICAL SURF-ZONE SPECIES AND ANADARA OVALIS AND NOETIA PONDEROSA ALSO OCCUR HERE BUT ARE NOT TYPICAL FOR THIS TYPE OF ENVIRONMENT. THESE SPECIES MAY SUPPORT SOME OF THE SMALL PYRAMIDELLID MOLLUSKS FOUND SO COMMONLY IN BEACHDRIFT; VARIOUS TURBONILLAS, ODOSTOMIAS, LONCHAEUS, ETC. WHOSE HOSTS FOR THE MAIN PART ARE AS YET UNKNOWN.

THE DEEPER CHANNELS ARE THE MOST LIKELY SOURCE OF THE RARER AND LARGER BEACH SHELLS. TONNA, THE LARGER SPECIMENS OF BUSYCON AND MUREX FULVESCENS, AN OCCASIONAL DISTORSIO, AMAEA, ETC., PROBABLY ALL COME FROM THE DEEPER WATERS OF THE INLET CHANNELS.

THE ENVIRONMENT RICHEST IN SPECIES AND POPULATIONS IS UNDOUBTEDLY FOUND ON THE TIDAL MUDFLATS OF THE INLET AREAS, WHERE A FLOCK OF SMALL SPECIES CAN BE COLLECTED DURING THE CHANGE OF SEASONS. THE SUDDEN APPEARANCE AND DISAPPEARANCE OF SOME OF THESE SMALLER SPECIES ON THE MUDFLATS IS QUITE REMARKABLE. THE FLATS AT SAN LUIS PASS "BLOOM" ON OCCASION WITH SMALL OLIVELLA DEALBATA, BUT MANY A TIME HARDLY A SINGLE SPECIMEN CAN BE FOUND. RETUSA CANDEI IS SOMETIMES QUITE COMMON WHILE AT OTHER OCCASIONS NOT A SINGLE ANIMAL CAN BE DUG. TELLINA IRIS IS USUALLY COMMON AND MOST OF THE TIMES A MEAL OF MERCENARIA AND SPISULA CLAMS CAN BE OBTAINED. OTHER SPECIES SUCH AS PANDORA TRILINEATA, TELLADORA CRISTATA ARE LESS COMMONLY FOUND BUT LIVE HERE THE YEAR ROUND AND ALSO SINUM PERSPECTIVUM, PHOLADS AND PINNA HAVE A FOOTHOLD ON THE FLATS.

THE TEXAS JETTIES CONTRIBUTE ONLY A SMALL NUMBER OF TYPICAL MOLLUSKS TO THE FAUNA. NOT QUITE SOLVED IS THE PROBLEM WHY THE MOST COMMON MOLLUSK FOUND ON THE JETTIES, CRASSOSTREA VIRGINIA, NEVER GROWS THERE TO MATURITY. IT MUST BE THAT THE ENVIRONMENT IN WAVE TOSSED WATERS IS UNSUITABLE FOR ITS DEVELOPMENT. MORE SUCCESSFUL ARE SIPHONARIA PECTINATA AND THE LITTLE SHELLS OF THE LITTORINA LINEOLATA COMPLEX. UNTIL RECENTLY THESE WERE IDENTIFIED L. ZICZAC, BUT THAT SPECIES DOES NOT OCCUR IN TEXAS AND IT SEEMS THAT IN TEXAS A MIXTURE OF TWO CLOSELY ALLIED SPECIES LIVES ON THE JETTIES. LITTORINA NEBULOSA WHICH WAS PRACTICALLY WIPED OUT IN TEXAS BECAUSE OF A NUMBER OF LONG COLD SPELLS IN THE EARLY SIXTIES IS ONLY FOUND ON OLD WOOD. AT LEAST I HAVE NEVER SEEN IT ON ROCK. IN THE ALGAL MAT BITTIIUM VARIUM LIVES. THAIS HAE-MOSTOMA IS THE MOST COMMON LARGE GASTROPOD BUT IS NOT TYPICAL FOR THIS ENVIRONMENT. A NUMBER OF ATTACHING FORMS LIVES BELOW THE LOW TIDE LEVEL;

ARCA IMBRICATA, BARBATIA TENERA, BARBATIA CANDIDA AND CHAMA CONGREGATA. MOST VALVES OF THESE SPECIES FOUND ON OUR OUTER BEACHES PROBABLY DERIVE FROM THE JETTIES. IN TEXAS THE MAIN TYPE OF ROCK USED IN CONSTRUCTION OF THE JETTIES IS PINK GRANITE WHICH COMES FROM THE LLANO UPLIFT. THIS GRANITE WITHSTANDS BORING SHELLS, SO THAT ONLY VERY RARELY BORERS ARE FOUND ON THE JETTIES IN AN OCCASIONAL PIECE OF SOFTER ROCK. NOT STUDIED AT ALL IS THE NUDIBRANCH FAUNA OF THE JETTIES.

A SYSTEMATIC SUMMARY OF THE ENVIRONMENTS MENTIONED SO FAR FOR CATEGORY I IS:

1. BRACKISH WATER FAUNAS
2. HYPERSALINE BAYS; BAYS OF VARIABLE SALINITY
  - A) ENCLOSED BAYS
  - B) OPEN BAYS
  - C) OYSTER REEF
  - D) GRASSFLATS
  - E) BAY MARGINS
3. INLETS AND SURFZONE
  - A) INLET MUDFLATS
  - B) CHANNELS
  - C) TIDAL BEACH ZONE
  - D) SURFZONE
4. JETTIES AND PILINGS
  - A) SPLATTER ZONE
  - B) TIDALZONE
  - C) UNDERWATER ZONE

### III. OPEN GULF BOTTOM COMMUNITIES.

LITTLE IS KNOWN ABOUT THE VARIOUS ASSEMBLAGES OUT IN THE OPEN GULF FOR THE SIMPLE REASON THAT ONLY FEW SYSTEMATIC INVESTIGATIONS HAVE BEEN MADE. THE DATA WHICH ARE AVAILABLE HAVE BEEN CLASSIFIED ACCORDING TO THE DEPTH OF THE WATER AND ARE LISTED AS SHALLOW SHELF, INTERMEDIATE SHELF, DEEP SHELF, AND CONTINENTAL SLOPE. IT IS PROBABLY TRUE THAT WITHIN EACH OF THESE CLASSIFIED RANGES IMPORTANT DIFFERENCES EXIST IN TYPE OF COMMUNITY, DEPENDING ON THE TYPE OF BOTTOM, THE PRESENCE OF PARTICULAR SUPPORTING ORGANISMS, ETC.

ON THE SHALLOW SHELF ROCKS AND OTHER DEBRIS MAY BE PRESENT OR EXTENSIVE BANKS COMPOSED OUT OF PLEISTOCENE SHELL MATERIAL OFFER A FIRM SUBSTRATUM FOR SPECIES WHICH CANNOT LIVE ON SOFT MUD BOTTOMS. HEALD BANK AND SABINE BANK HARBOR A FAUNA WHICH IS QUITE DIFFERENT FROM THE ONE FOUND ON THE SURROUNDING MUD BOTTOMS. FOR THE LATTER SEVERAL ANADARA SPECIES, CANTHARUS, SOME ANACHIS SPECIES AND MACOMA PULLEYI ARE CHARACTERISTIC, WHILE THE PLEISTOCENE BANKS CONTAIN A NUMBER OF SPECIES WHICH DO NOT OCCUR ON MUD BOTTOMS. (XENOPHORA). IN SOME AREAS OF THE SHALLOW SHELF THERE ARE "STANDS" OF WHIP CORAL, ENABLING PTERIA, WHICH ATTACHES ITSELF TO IT, AND CYPHOMA AND NEOSIMNIA, WHICH "BROWSE" ON IT, TO LIVE IN ABUNDANCE. AT OTHER LOCATIONS SEA PANSIES OCCUR IN GREAT MASSES. IT IS PROBABLY THAT SUCH LOCAL ABUNDANCE OF SUPPORTING ORGANISMS, FAVOR SPECIALIZED MOLLUSK FAUNAS. THE REASON FOR SUCH ABUNDANCE IS UNKNOWN TO ME.

THE MOST IMPORTANT DIFFERENCE BETWEEN THE SHALLOW SHELF FAUNAS MAY BE THE COMPOSITION OF THE BOTTOM SEDIMENT: THIS CAN BE EITHER MUD OR SAND IN VAR-

IOUS DEGREES OF MIXING. AN EVEN APPROXIMATE KNOWLEDGE OF THE DISTRIBUTION OF SPECIES OVER THE SHALLOW SHELF IS LACKING AND WE CAN ONLY HOPE THAT SYSTEMATIC INVESTIGATION IN THE FUTURE WILL CLARIFY THE PROBLEMS. THE ONLY TYPE OF COMMUNITIES MENTIONED IN THE LITERATURE ARE THE SO CALLED "WHITE SHRIMP GROUND" AND THE "BROWN SHRIMP GROUND" SAID TO BE CHARACTERIZED BY PITAR CORDATA AND CALLOCARDIA TEXASIANA, RESPECTIVELY.

AT THIS MOMENT IT IS IMPOSSIBLE TO MAKE A MORE SIGNIFICANT CLASSIFICATION OF SHELF ECOLOGIES THAN THE VAGUE AND NONDESCRIPTIVE DISTINCTION BETWEEN SHALLOW, INTERMEDIATE AND DEEP SHELF COMMUNITIES.

BELOW THE 50 FATHOM LEVEL THE CHARACTER OF THE FAUNA BEGINS TO CHANGE DRASTICALLY. ABOVE THAT LEVEL THE FAMILY COMPOSITION IS FAIRLY UNIFORM, ALTHOUGH SPECIES IN A FAMILY ARE REPLACING EACH OTHER, BUT BELOW IT ELEMENTS WHICH HAVE NO IMMEDIATE COASTLINE RELATIONS BEGIN TO APPEAR SO THAT BELOW 100 FATHOMS THE COMPOSITION OF THE FAUNA IS QUITE DIFFERENT. IT IS HIGHLY PROBABLE THAT SEVERAL LEVELS OF SUCH COMPLETE FAUNAL CHANGE EXIST, ALL THE WAY DOWN TO THE DEEPEST PART OF THE GULF OF MEXICO. (INFORMATION OBTAINED FROM MR. B. JAMES OF TEXAS A&M UNIVERSITY). VERY FEW DATA HAVE BEEN PUBLISHED SO FAR ABOUT THESE CHANGES BUT THE DATA OF PARKER ABOUT THE FAUNA WHICH APPEARS ON THE CONTINENTAL SLOPE SEEM TO SUPPORT THIS VIEW.

SOMEWHAT MORE CAN BE SAID ABOUT THE FAUNA OF THE CORAL REEFS FRINGING THE SHELF. THE MOLLUSK FAUNA OF THESE REEFS APPEARS TO BE PURELY CARIBBEAN AND THE PRESENCE OF A GREAT MANY SPECIES ALSO FOUND ON THE YUCATAN PLATFORM JUSTIFIES THE PRELIMINARY ASSUMPTION OF A CLOSE RELATIONSHIP WITH THE FAUNA AT THAT LOCATION. COLLECTION OF SHELLS MADE SO FAR ON THE REEFS INDICATE THAT THE LUMPS, WHICH RISE A FEW HUNDREDS OF FEET ABOVE THE SURROUNDING SEA BOTTOM DISPLAY A ZONATION IN THEIR MOLLUSC FAUNA. THOSE WHICH RISE HIGH ENOUGH TO SUPPORT A CROWN OF LIVE CORAL ARE POPULATED BY A COMMUNITY OF WHICH SEVERAL MEMBERS ARE MISSING AT THE DEEPER LEVEL OF CALCAREOUS ALGAE. THE ALGAL ZONE SUPPORTS A RICH COMMUNITY OF MICROMOLLUSCS WHICH WILL TURN-OUT TO BE OF HIGH INTEREST (MECOLIOTIA, SCISSURELLA, FISSURELLIDS, PYRAMIDELLIDS, CAECIDS, AMPHITHALAMUS, CYCLOSTOMA, ETC.) AND IS OF COURSE ACCOMPANIED BY VARIOUS BORING AND ATTACHING FORMS OF BIVALVES (GREGARIELLA, JOUANNETIA, SPONDYLUS, MALLEUS) BUT RELATIVELY FEW FREE LIVING BIVALVES (LYROPECTEN, ANTIGONIA, PSAMMOBIA CIRCE). COMMENSALS OF SPONGES, WHICH ARE WIDESPREAD, ARE COMMON: HIATELLA, VERMICULARIA.

AS CAN BE EXPECTED THE COMPLETELY DIFFERENT SUBSTRATE OF STETSON BANK, SUPPORTS AN ENTIRELY DIFFERENT FAUNA. THE MORE NORTHERLY LOCATION OF THIS BANK UNDOUBTEDLY CONTRIBUTES TO THIS DIFFERENCE. PART OF THIS DIFFERENCE CAN BE EXPRESSED RATHER IN THE RELATIVE PROPORTIONS OF THE COMPONENTS THAN IN THE OCCURENCE OF NEW SPECIES. THE CYMATIIDAE OCCUR IN GREAT MANY SPECIES AND SOME IN LARGE NUMBERS. THE MICROFAUNA HAS YET TO BE SCRUTENIZED UNDER THE MICROSCOPE.

### III. PELAGIES

A THIRD VERY SPECIALIZED GROUP OF MOLLUSCS INHABITS THE EXPANSE OF WATER AND LEADS A FLOATING OR SWIMMING LIFE. THE GROUP INCLUDES MOST OF THE SQUIDS AND OTHER CEPHALOPODIA EXCEPT THE OCTOPUS. NOT LONG AGO VOSS SUM-



MARIZED THE OCCURENCES OF CEPHALOPODA IN THE GULF. WE SHALL NOT DEAL WITH THEM HERE.

TO JUDGE FROM BOTTOM SAMPLES LARGE NUMBER OF PELAGICS MUST LIVE IN THE GULF. SUBSURFACE FLOATING FORMS SUCH AS CAVOLINIDS, ATLANTA AND SPIRA-TELLA ARE PRACTICALLY ALWAYS PRESENT IN DREDGE SAMPLES AND IT IS TO BE EXPECTED THAT MOST SPECIES REPORTED IN THE WESTERN ATLANTIC WILL BE OBTAINED IN THE SAMPLES DREDGED OFFSHORE TEXAS AND LOUISIANA.

SOME SURFICIAL PELAGICS, WHICH OCCASIONALLY ARE PRESENT IN QUANTITY ON THE BEACHES SUCH AS JANTHINA AND LITIOPA ARE SURPRISINGLY SCARCE IN BOTTOM MATERIAL. ONLY CRESEIS, WHICH IS QUITE COMMON IN BEACHDRIFT, IS ALSO COMMON IN BOTTOM SAMPLES.

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NOTES FROM THE LIBRARY COMMITTEE BY W. W. SUTOW, M. D.

RECENT ADDITIONS TO THE LIBRARY OF THE HOUSTON CONCHOLOGY SOCIETY INCLUDE THE FOLLOWING:

- S. PETER DANCE: RARE SHELLS (REVIEWED IN VOL. VI No. 3, OCTOBER 1969)
- ROWLAND F. ZEIGLER AND HUMBERT C. PORRECA: OLIVE SHELLS OF THE WORLD
- R. TUCKER ABBOTT: SEASHELLS OF NORTH AMERICA (REVIEWED IN VOL. VOL. V No. 7, MARCH 1969)
- WALTER FREEMAN WEBB: FOREIGN LAND SHELLS
- PHILLIP W. CLOVER: A CATALOG OF POPULAR MARGINELLA SPECIES
- FRED G. THOMPSON: THE AQUATIC SNAILS OF THE FAMILY HYDROBII-DAE OF PENINSULAR FLORIDA (REVIEWED IN VOL. VI No. 5, JANUARY 1970)
- R. TUCKER ABBOTT: PRONOUNCING THE SCIENTIFIC NAMES OF SEA-SHELLS OF NORTH AMERICA (THIS IS A RECORD)
- F. A. SCHILDER AND M. SCHILDER: PRODROME OF A MONOGRAPH ON LIVING CYPRAEIDAE (REPRINT)
- THE COWRY (VOL. 1, Nos. 1,4,5,6,7,8 AND VOL. 2 No. 1)

BOOK REPORT

BY H. ODE

DOVER REPRINT, THE SEA BEACH AT EBB-TIDE BY AUGUSTA FOOTE ARNOLD. DOVER, 486-21949-6, \$3.50, 490 PAGES.

IT IS INTERESTING TO LEAF THROUGH THIS CLASSIC WRITTEN MORE THAN HALF A CENTURY AGO. IT IS STILL QUITE READABLE AND THE AMATEUR COLLECTOR WITH LITTLE BIOLOGICAL BACKGROUND AND NOT FUSSY ABOUT THE DEVIUS PATHS OF TAXONOMY DURING THE LAST 60 YEARS, SHOULD FIND THIS REPRINT QUITE USEFUL, PROVIDED HIS INTEREST IS IN THE GENERAL BIOLOGY RATHER THAN IN THE SYSTEMATICS. AS STATED IN THE PREFACE THE VOLUME "WAS DESIGNED AS AN AID FOR THE AMATEUR COLLECTOR AND STUDENT OF ORGANISMS, BOTH ANIMAL AND VEGETABLE, WHICH ARE FOUND UPON NORTH AMERICAN BEACHES", ATLANTIC AS WELL

AS PACIFIC. TO GIVE SUCH AN AID IN LESS THAN 500 PAGES MAY AT PRESENT SEEM AN IMPOSSIBLE TASK. OPINION MAY DIFFER ON THE EMPHASIS GIVEN TO VARIOUS PHyla DISCUSSED IN THE BOOK. FOR INSTANCE, THE MOLLUSCA HAVE TAKEN UP NO LESS THAN 170 PAGES OF THE BOOK WHEREAS THE ARTHROPODA ARE DEALT WITH IN 61 PAGES AND THE VARIOUS PHyla OF WORMS GET 28 PAGES. FORAMINIFERA AND OSTRACODA ARE ONLY MENTIONED. HOWEVER ONE SHOULD KEEP IN MIND THAT THE BOOK WAS WRITTEN IN 1901 AND THAT ITS EMPHASIS FOR THE ATLANTIC FAUNA FALLS ON THE BEACHES OF NEW ENGLAND WITH A LIBERAL SPRINKLING OF INFORMATION CONCERNING THE SOUTH FLORIDA FAUNA. ITS REPRINTING MAY REFLECT THE SOMEWHAT DISMAYING CIRCUMSTANCE THAT NO REALLY MODERN, TAXONOMICAL-  
LY UP TO DATE, GENERAL FIELD GUIDE FOR EASILY ACCESSIBLE SHALLOW WATER MARINE BIOTA IS AVAILABLE. FOR SUCH A GUIDE THERE IS DEFINITELY A NEED.

HOWEVER, FOR THE "BLUENOSED" SHELL COLLECTOR A NUMBER OF MODERN TEXTS AND GUIDES IS AVAILABLE AND FOR HIM THE SYSTEMATIC PART OF THE 170 PAGES DEVOTED TO MOLLUSCS HAS MAINLY HISTORICAL VALUE. REFERENCES TO TEXAS ARE QUITE SCARCE AND LISTED FOR TEXAS ARE ONLY NERITINA VIRIDIS, LITTORINA IRRORATA, MUREX POMUM, MUREX FULVESCENS AND PURPURA HAEMOSTOMA. THE FIRST OF THESE IS QUITE SURPRISING, SMARAGDIA VIRIDIS WAS DISCOVERED (OR PERHAPS REDISCOVERED) ABOUT TEN YEARS AGO NEAR PORT ARANSAS, BUT IT IS POSSIBLE THAT THE AUTHOR WAS FAMILIAR WITH ITS TEXAS OCCURENCE ALREADY IN 1901.

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#### CORPUS CHRISTI SHELL FAIR

THE EIGHTH ANNUAL SHELL FAIR SPONSORED BY THE COASTAL BEND SHELL CLUB OF CORPUS CHRISTI WILL BE HELD THIS YEAR ON MARCH 7 & 8 AT THE GARDEN CENTER. CO-SPONSOR WILL BE THE CITY PARK AND RECREATION DEPARTMENT. JUDGES WILL BE DR. W. W. SUTOW OF OUR OWN CLUB, MRS. JUD TAYLOR OF SAN ANTONIO, AND MRS. JEAN WASSON OF CORPUS.

ANYONE INTERESTED MAY ENTER AN EXHIBIT. CATEGORIES AND RULES MAY BE OBTAINED FROM MRS. H. L. WEAVER, 622 PERLMAN, CORPUS CHRISTI, TEXAS 78411. THE SHOW WILL BE OPEN TO THE PUBLIC AT THE GARDEN CENTER, 5325 GREELY, FROM 2 TO 6 P.M. ON MARCH 7 AND FROM 1 TO 6 P.M. ON MARCH 8. EVEN IF YOU DO NOT PLAN TO ENTER THE SHOW, HOUSTON SHELLERS MAY WISH TO DRIVE DOWN TO SEE THE SHOW AND DO A LITTLE COLLECTING ON PADRE AND MUSTANG ISLAND BEACHES.

IT IS HARDLY NECESSARY TO REMIND OUR READERS OF THE 10TH ANNUAL SOUTH PADRE ISLAND SHELL SHOW WHICH WILL BE HELD MARCH 1ST AT SOUTH PADRE ISLAND. THERE WILL BE A GET TOGETHER EVENING ON FRIDAY EVENING, FEBRUARY 27TH AND THE AWARDS DINNER ON SATURDAY EVENING, FEBRUARY 28TH. THE FAIR WILL BE OPEN TO THE PUBLIC ALL SUNDAY MARCH 1ST.

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A REPORT OF THE LAST FLOWER GARDEN DIVING TRIP HAS BEEN PRINTED IN DIVE, OF FEBRUARY 1970. IT WAS WRITTEN BY MIKE BROCK AND ILLUSTRATED BY PHOTOS TAKEN BY DR. HAROLD REUTER, DR. W. E. PIERCE AND TRAVIS BURGESS OF THE GALVESTON DAILY NEWS. THE ARTICLE GIVES A GOOD IMPRESSION OF THE TRIP BOTH ABOVE AND BELOW THE WATER.

Texas  
no. 7  
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# CONCHOLOGIST

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MARCH 1970  
MAY 31 1989  
LIBRARIES

## NOTES & NEWS

### NEXT MEETING

THE MEETING ON MARCH 25 AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE IS BEING CALLED SHOW, TELL, AND LISTEN NIGHT. WE PLAN TO HAVE A MICROSCOPE SET UP, A RECORD PLAYER AVAILABLE SO WE CAN LISTEN TO THE RECORD ON PRONUNCIATION BY DR. R. TUCKER ABBOTT, AND A PANEL OF MEMBERS TO HELP OTHERS WITH IDENTIFICATIONS OF SMALL OR LARGE SHELLS, LOCAL OR FOREIGN. SO COME WITH SOME OF THE SHELLS YOU WANT IDENTIFIED (PLEASE LIMIT THE NUMBER!), OR COME WITH A FEW SHELLS YOU WANT TO SHOW AND TELL ABOUT. IT'S YOUR NIGHT; MAKE IT WORK FOR YOU!

### REPORT FEBRUARY MEETING

THE MONTHLY MEETING, HELD ON FEBRUARY 25TH, WAS ATTENDED BY ABOUT 45 MEMBERS AND 10 VISITORS.

MRS. BOONE REPORTED THAT MOST OF THE LIBRARY BOOKS ARE NOW HOUSED IN THE MUSEUM. THEY MAY BE PICKED UP THERE FROM MRS. ANN SPEERS EVERY MONDAY THRU FRIDAY BETWEEN 8:30 A.M. AND 5:00 P.M.; OR THEY CAN BE ORDERED BY PHONING MRS. SPEERS AT THE MUSEUM FOR DELIVERY AT THE NEXT MONTHLY MEETING.

DR. LAURENCE DEXTER, CHAIRMAN OF THE NOMINATING COMMITTEE REPORTED THAT A BALLOT FORM WILL BE MAILED TO ALL MEMBERS ON OR ABOUT MARCH 15TH.

MRS. MARY SUTOW REPORTED THAT PREPARATIONS FOR THE SHELL FAIR IN SHARPS-TOWN MALL IN EARLY MAY ARE COMING ALONG NICELY, AND THAT THE SOCIETY MAY USE THE ENTIRE MALL SPACE IF NECESSARY. SHE SUGGESTED THAT MR. CHARLES DOH BE THE GENERAL COORDINATOR FOR THE FAIR, AND APPEALED ONCE AGAIN TO ALL MEMBERS TO DONATE WHATEVER SHELLS THEY CAN SPARE TO THE FAIR.

THE MAIN EVENT OF THE EVENING WAS THE AUCTION OF A NUMBER OF SHELLS, MAINLY FROM THE GUAM AREA. MRS. CLARICE VAN ERP AGAIN PROVED HER TALENTS AS AN AUCTIONEER, AND THE AUCTION PROVED A GREAT SUCCESS. A TOTAL OF \$171.42 WORTH OF SHELLS WERE SOLD.

ALL MEMBERS WHO HAVE SHELLS TO DONATE TO OUR SHOP AT THE SHOW IN THE SHARPS-TOWN MALL, MAY 7, 8, 9, AND 10, SHOULD CONTACT MRS. J. DASHIELL AS SOON AS POSSIBLE.

### FIELD TRIP

ON APRIL 19TH WE WILL ASSEMBLE ON THE SAN LUIS SIDE OF THE BEACH PAVILLION AT JAMAICA BEACH, GALVESTON ISLAND FOR A SHELLING TRIP ALONG THE BEACH. LEADER LLOYD MEISTER.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

FAMILY PHENACOLEPADIDAE. OF THIS FAMILY ONLY A SINGLE SPECIES HAS BEEN TAKEN ON THE TEXAS COAST. THE LOCATION HAS SINCE BEEN BADLY DISTURBED.

PHENACOLEPAS HAMILLEI FISCHER 1856. MANY YEARS AGO THREE SHELLS WERE COLLECTED AT CLINE'S POINT, PORT ARANSAS, BY MRS. SPEERS. SINCE THEN ONLY ONE FURTHER RECORD HAS COME TO OUR ATTENTION; A SINGLE SPECIMEN COLLECTED BY MRS. TATE ABOUT THE SAME TIME ON FREEPORT BEACH.

FIGURED IN: 3

PREVIOUS REFERENCES: NONE

LOCALITIES: FREEPORT, PORT ARANSAS

FAMILY CORBULIDAE. THIS DIFFICULT FAMILY NEEDS MUCH WORK IN ORDER TO CLEAR UP TAXONOMIC CONFUSION. ALTHOUGH SELDOM REPORTED IN PREVIOUS LITERATURE, THE SMALL VALVES OF THIS FAMILY ARE NOT RARE IN DRIFT. OUR NAMES ARE SUBJECT TO REVISION.

CORBULA SWIFTIANA C. B. ADAMS 1852. THIS SPECIES IS COMMON IN BEACHDRIFT ALL ALONG THE TEXAS COAST. IT IS CHARACTERIZED BY THE ANGULAR HOOK IN THE OUTLINE. FRESH SHELLS EXHIBIT A SMOOTH SHEEN NOT SEEN IN OTHER CORBULAS. VALVES OF CORBULA START OUT THIN BUT AT SOME STAGE IN THEIR DEVELOPMENT THEY INCREASE SUDDENLY IN THICKNESS. THIS MAKES JUVENILE SPECIMENS LOOK QUITE DIFFERENT FROM MATURE ONES, AND PROBABLY EXPLAINS THE DIFFICULTY AND CONFUSION IN THIS FAMILY. LIVE MATERIAL HAS BEEN DREDGED IN INLETS AND BAYS NEAR PORT ARANSAS (SPEERS). IN ALL LIKELIHOOD THIS SPECIES IS IDENTICAL WITH C. CARIBAEA ORBIGNY 1842.

FIGURED IN: 1, 2, 3, 4

PREVIOUS REFERENCES: 9, 12, 14, 18, 19

LOCALITIES: ENTIRE TEXAS COASTLINE.

CORBULA BARATTIANA C. B. ADAMS 1852. A MUCH MORE GLOBOSE AND SOMEWHAT SMALLER SPECIES THAN THE PREVIOUS ONE. IT IS AT GALVESTON SLIGHTLY LESS COMMON THAN C. SWIFTIANA IN DRIFT. IN OFFSHORE WATERS LIVE SHELLS ARE COMMONLY DREDGED AND ALSO A FEW ARE KNOWN FROM OUR BEACHES. IT IS COMMONLY DREDGED LIVE FROM INLETS AND BAYS AROUND PORT ARANSAS AND PORT ISABEL (SPEERS).

FIGURED IN: 1, 6

PREVIOUS REFERENCES: 9

LOCALITIES: ENTIRE TEXAS COASTLINE.

NOTOCORBULA OPERCULATA PHILLIPPI 1848. THIS IS ONE OF THE MOST COMMON OFFSHORE SPECIES IN THE GALVESTON-FREEPORT AREA OF THE CONTINENTAL SHELF. REMARKABLY ENOUGH IT IS NOT FOUND ON THE BEACH IN EAST TEXAS, EXCEPT FOR ONE OLD VALVE NEAR SABINE. IT BECOMES COMMON ON THE BEACH ON ST. JOSEPH ISLAND AND IS COMMONLY FOUND IN DRIFT FROM THERE ON SOUTHWARD. A FEW LIVE SPECIMENS AND A FEW FRESH ONES HAVE BEEN TAKEN FROM THE ATTACHMENT ROOT OF WHIPCORAL (PORT ISABEL). OCCASIONALLY LIVE SPECIMENS ARE FOUND IN ROOTMASSES WASHED ASHORE ON MUSTANG ISLAND. THE TAXONOMY OF THIS SPECIES IS INVOLVED AND WE HAVE INCLUDED SEVERAL REFERENCES USING OTHER TAXA IN OUR "PREVIOUS REFERENCES".

FIGURED IN:

PREVIOUS REFERENCES: 9,12,17,18,19 AND LISTED BY HARRY 1968.

LOCALITIES: SABINE, ST. JOSEPH ISLAND, MUSTANG AND PADRE ISLAND.

PARAMYA SUBOVATA CONRAD 1845. THIS SOMEWHAT INCONSPICUOUS SHELL IS UNCOMMONLY FOUND ON TEXAS BEACHES. IT IS KNOWN FROM MANY LOCATIONS AND IS PROBABLY MORE COMMON THAN ITS RECORDS INDICATE. ONLY KNOWN FROM DEAD SHELLS.

FIGURED IN: 5

PREVIOUS REFERENCES: 15

LOCALITIES: GALVESTON, FREEPORT, PORT ARANSAS.

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SHELLS COLLECTED DURING THE SOUTH PADRE ISLAND SHELL FAIR.

BY H. ODÉ

SEVERAL OF OUR MEMBERS COLLECTED LIVE LITTORINA NEBULOSA ON THE ROCKS NEAR THE JETTY. OF THIS SPECIES I HAD STATED THAT IT OCCURS ON WOOD. IT APPARENTLY ALSO DOES LIVE ON OTHER SUBSTRATA. MR. F. VANMORKHOVEN OBTAINED TWO SPECIMENS OF EPITONIUM SERICIFILUM FROM BEACHDRIFT. ON MARCH 7TH I OBTAINED A PERFECT LARGE COMPLETE SPECIMEN OF LABIOSA LINEATA, BOTH VALVES STILL ADHERING AT SAN LUIS PASS. AT THE SAME TIME SEVERAL PAIRS OF LABIOSA PLICATELLA WERE COLLECTED. THE TIDE WAS UNUSUALLY HIGH AND THE SEA VERY ROUGH.

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NEW PUBLICATIONS

IN THE JANUARY ISSUE OF GEOTIMES J. T. DUTRO, JR., HAS REVIEWED PROGRESS IN THE FIELD OF PALEONTOLOGY. HE WRITES: "ONE OF THE MORE IMPORTANT PAPERS OF THE DECADE WAS PUBLISHED BY THE PALEONTOLOGICAL SOCIETY AS ITS MEMOIR 3, "THE EVOLUTION OF THE ARGOPECTEN GIBBUS STOCK. . . . ." BY T. R. WALKER. THIS MODERN PALEONTOLOGICAL CLASSIC REPRESENTS AN ELEGANT PICTURE OF SPECIATION AND EVOLUTION IN A COMPACT GROUP OF PELECYPODS THAT AROSE IN THE MIDDLE MIOCENE AND DEVELOPED THROUGH THE LATE TERTIARY WITH LIVING REPRESENTATIVES IN BOTH THE ATLANTIC AND PACIFIC OCEANS. WALLER'S CASE FOR THE PALEONTOLOGICAL SPECIES CONCEPT WELL GROUNDED IN NEONTOLOGIC STUDIES IS AS COMPLETE AS ANY THAT HAS BEEN ATTEMPTED.

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SOUTH PADRE ISLAND SHELL FAIR

BY CONSTANCE BOONE

THE 10TH ANNUAL SHELL FAIR HELD BY THE SOUTH PADRE ISLAND SHELL CLUB WAS A GREAT SUCCESS. ONE T.V. PROGRAM ESTIMATED THAT 20,000 PEOPLE CAME TO

THIS MONTH, MENTION WILL BE MADE OF TWO PUBLICATIONS CONCERNED WITH MOLLUSKS OF THE JAPANESE WATERS AND PARTS OF THE SOUTH PACIFIC. THESE BOOKS ARE NOT FOUND ON THE USUAL DEALER'S BOOK LISTS. THE CONTENTS AND SCOPE OF THESE VOLUMES, HOWEVER, SEEM TO BE OF SUFFICIENT SIGNIFICANCE TO WARRANT REFERENCE DOCUMENTATION HERE.

1. THE MOLLUSCAN SHELLS BY KATURA OYAMA, EDITOR. PHOTOGRAPHY BY YOSHIO TAKEMURA. VOLUMES I THROUGH VI. TOKYO, JAPAN. SCIENCE AND PHOTOGRAPHY CLUB AND RESOURCES EXPLOITATION INSTITUTE. 1957 TO 1963.

THIS IS A SET OF SIX VOLUMES. EACH VOLUME IS A REMARKABLE COLLECTION OF SUPERB PHOTOGRAPHS (ALL IN BLACK AND WHITE) TAKEN ESPECIALLY FOR USE IN IDENTIFICATION OF SPECIES. CONSIDERABLE EFFORT WAS MADE TO SHOW DISTINGUISHING FEATURES IN DETAIL. THE SPECIES WERE SELECTED MOSTLY FROM JAPANESE MOLLUSCAN FAUNA BUT SOME INDO-PACIFIC SPECIES HAVE ALSO BEEN INCLUDED. WELL-PRESERVED SPECIMENS FROM NOTABLE INDIVIDUAL AND MUSEUM COLLECTIONS IN JAPAN WERE PHOTOGRAPHED. THE GENERA HAVE NOT BEEN ARRANGED IN ANY TAXONOMIC ORDER SINCE THE SELECTIONS WERE MADE ON THE BASIS OF POSSIBLE INTEREST TO THE AMATEUR COLLECTOR.

EACH VOLUME CONSISTS OF APPROXIMATELY 30 UNBOUND PLATES. EACH PLATE (7 1/2 BY 10 INCHES) USUALLY PICTURES SHELLS BELONGING TO THE SAME GENUS. THE IDENTIFICATION BY SCIENTIFIC NAME (IN ENGLISH) IS PRINTED ON A FACING PAGE. ALL PRINTING IS DONE ONLY ON ONE SIDE OF THE PAGE. ALTHOUGH IT WAS STATED IN THE FOREWORD TO THE FIRST VOLUME THAT THE TEXT FOR THE FIGURED GROUPS WOULD BE PUBLISHED, THIS HAS NOT BEEN DONE.

THE PHOTOGRAPHS ARE OF HIGHEST TECHNICAL AND ARTISTIC QUALITY AND AMAZING AMOUNTS OF FINE DETAILS ARE CLEARLY REPRODUCED. IN ALMOST EVERY CASE, TWO VIEWS OF THE SHELL SPECIMEN ARE SHOWN. IN MANY INSTANCES, ADDITIONAL SPECIAL VIEWS ARE INCLUDED. THESE VOLUMES SHOULD BE CONSIDERED IMPORTANT SUPPLEMENTS TO THE POPULAR AND WIDELY USED JAPANESE BOOKS ON SEASHELLS.

2. ENCYCLOPAEDIA ZOOLOGICA ILLUSTRATED IN COLOURS. VOLUME III. EDITED BY Y. K. OKADA, I. TAKI AND OTHERS. 200 PP + 16 PP. TOKYO, JAPAN. HOKURYUKAN PUBLISHING CO., LTD. S16. 1960.

THIS VOLUME (III), WHICH CAN BE OBTAINED SEPARATELY, DEALS WITH INVERTEBRATES OF THE PHyla ECHINODERMATA, MOLLUSCA, CHAETOGNATHA, AND PROSOPYGII. THE SECTION ON MOLLUSKS (164 PAGES) WAS EDITED BY THE LATE DR. ISAO TAKI OF THE JAPAN SCIENCE MUSEUM. THE VOLUME IS OF THE SAME FORMAT, SAME SIZE (7 1/2 BY 10 1/2 INCHES) AND SAME QUALITY AS THE WIDELY POPULAR SELECTED SHELLS OF THE WORLD BY DR. TOKIO SHIKAMA. HOWEVER, THE SCOPE OF COVERAGE OF THE MOLLUSCAN FAUNA SEEMS TO BE LESS THAN THAT ENCOMPASSED BY KIRA'S WELL-KNOWN BOOK OR BY HIRASE'S EARLY VOLUME. THE TEXT IS IN JAPANESE, THE IDENTIFICATION IN ENGLISH, AND THE ILLUSTRATIONS ARE IN COLOR.

MENTION OF THIS BOOK IS MADE HERE NOT BECAUSE OF THE GENERAL PRESENTATION OF THE MOLLUSCAN MATERIAL BUT BECAUSE OF OTHER SPECIAL FEATURES. THERE ARE THREE COLOR PLATES OF THE CEPHALOPODS (30 SPECIES) AND SEVEN STUNNING NUDEBRANCHS (99 SPECIES). IN ADDITION, THE BOOK INCLUDES A PLATE SHOWING EN-

LARGED PHOTOGRAPHS (IN COLOR) AND LINE DRAWINGS (BLACK AND WHITE) OF 16 SPECIES OF PTEROPODS. TWO OTHER PLATES (IN COLOR) SHOW 15 SPECIES OF CHITONS OF THE JAPANESE WATERS.

NEXT TO THE SECTION ON MOLLUSCA, A MAJOR CHAPTER OF THE BOOK IS CONCERNED WITH ECHINODERMATA. THE SEA URCHINS, SAND DOLLARS, SEA CUCUMBERS, STARFISHES, BRITTLE STARS AND THE LIKE ARE PICTURED IN FULL COLOR. FINALLY THERE IS A CHAPTER ON CHAETOGNATHIA (ARROW-WORMS) AND ONE ON THE PROSOPYGII (BRYOZOA AND BRACHIOPODS.)

THE VOLUME, THEREFORE, CONTAINS PICTORIAL INFORMATION ON MOLLUSCAN AND OTHER SPECIES NOT ORDINARILY AVAILABLE FROM ORDINARY TEXTS. SINCE THE BOOK INCLUDES MANY SPECIES FROM THE SOUTH PACIFIC WATERS, THE DATA COULD BE OF PRACTICAL VALUE TO THOSE INTERESTED IN THE INDO-PACIFIC INVERTEBRATE FAUNA.

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NOTES FROM THE LIBRARY COMMITTEE

BY W. W. SUTOW, M.D.

TWO BOOKS RECENTLY OBTAINED FOR THE LIBRARY ARE:

SHELL COLLECTING, AN ILLUSTRATED HISTORY, BY S. PETER DANCE.  
UNIVERSITY OF CALIFORNIA PRESS. 344 PAGES. 1966.

SEA TREASURES. A GUIDE TO SHELL COLLECTING. BY KATHLEEN  
YERGER JOHNSTONE. HOUGHTON MIFFLIN COMPANY. 242 PAGES. 1957.

AFTER A LONG LAPSE OF THREE YEARS, THE LIBRARY HAS RECEIVED THE CURRENT ADDITIONS TO THE OCCASIONAL PAPERS ON MOLLUSKS (THE DEPARTMENT OF MOLLUSKS, MUSEUM OF COMPARATIVE ZOOLOGY, HARVARD UNIVERSITY). THESE ARE:

LAND MOLLUSCA OF SABA ISLAND, LESSER ANTILLES BY WILLIAM J.  
CLENCH. (VOL. 3, No. 38, PP 53-60, FEB. 6, 1970)

THE GENUS PRIOTROCHATELLA (MOLLUSCA: HELICINIDAE) OF THE  
ISLE OF PINES AND JAMAICA, WEST INDIES BY WILLIAM J. CLENCH AND  
MORRIS J. JACOBSON. (VOL. 3, No. 39, PP 61-80, FEB. 6, 1970.)

oooOooo

CORAL REEFS

BY H. ODÉ

IN THE LATEST ISSUE OF GEOTIMES, JANUARY 1970, A FEW NOTES OF INTEREST APPEARED. IN A PAPER REVIEWING THE PROGRESS IN THE FIELD OF OCEANOGRAPHY DURING 1969, JOHN LYMAN WRITES (PAGE 20) "LIVING REEF CORALS WERE FOUND OFF NORTH CAROLINA, A HABITAT THOUGHT EXCLUDED BY ITS LOW MINIMUM TEMPERATURES".

APPARENTLY THE NORTHWEST GULF OF MEXICO REEFS FRINGING THE CONTINENTAL SHELF ARE NOT THE MOST NORTHERLY REEFS IN THE ATLANTIC. I AM VERY INTERESTED TO HEAR PARTICULARS ABOUT THE COMPOSITION OF THE MOLLUSC FAUNA OF THESE NEWLY DISCOVERED REEFS.

THE SMALLEST AMERICAN SPECIES OF THE GENUS SEMELE HAS BEEN FOUND A FEW TIMES ON THE BEACHES OF ST. JOSEPH AND PADRE ISLAND. IT IS AN EASILY RECOGNIZED SHELL, MUCH MORE ELONGATE IN OUTLINE THAN THE LARGER AND MORE COMMON SPECIES SEMELE PURPURASCENS, WHICH LIVES OFFSHORE AND IS UNCOMMONLY FOUND ON THE BEACHES. IT LIKewise DIFFERS FROM SEMELE PROFICUA, WHICH LIVES IN THE BAYS, BUT WHICH IS NOT FOUND IN OFFSHORE WATERS. SEMELE NUCULOIDES LIVES IN OFFSHORE WATERS ALL ALONG THE TEXAS COAST, BUT BEACH MATERIAL IS ONLY KNOWN FROM THE SOUTHERN PART OF TEXAS. SOME LIVE MATERIAL HAS BEEN OBTAINED OFF SHORE GALVESTON AND FREEPORT. AT PORT ISABEL SPECIMENS HAVE BEEN COLLECTED ON THE BEACH WHICH WERE RAFTED ASHORE ON CLUMPS OF WHIPCORAL. SOME OF THESE ARE SHOWN IN THE PHOTOGRAPH, WHICH WAS MADE BY MR. C. DEXTER. SIZE OF THE LARGEST SHELL IS ABOUT 6 MM.

SEMELE NUCULOIDES HAS BEEN REPORTED EARLIER FOR TEXAS IN THE FOLLOWING REPORTS

- 1955 HULINGS, N.C., AN INVESTIGATION OF THE BENTHIC INVERTEBRATE FAUNA FROM THE SHALLOW WATERS OF THE TEXAS COAST. MASTERS THESIS, TEX. CHRIST. UNIV., 87 P.
- 1959 KENNEDY, E. A., A COMPARISON OF THE MOLLUSCAN FAUNA ALONG A TRANSECT EXTENDING FROM THE SHORELINE TO A POINT NEAR THE EDGE OF THE CONTINENTAL SHELF OF THE TEXAS COAST. MASTERS THESIS, TEX. CHRIST. UNIV.
- 1964 ODÉ, H. AND SPEERS, A., NOTES CONCERNING TEXAS BEACH SHELLS. TEX. CONCHOLOGIST. VOL. 1 (2), P. 3
- 1967 HARRY, H. W., MARINE MOLLUSCA OF GALVESTON, TEXAS. TENTATIVE AND PRELIMINARY LIST. MARINE LAB., TEX. A & M UNIV., GALVESTON, TEX. 11 P. (SECOND ED. 1968.)



CONTINUED ON PAGE 80



A STATEMENT BY A LITTLE OLD LADY IN TENNIS SHOES - IN A STATE OF CONFUSION  
ABOUT A "STATE" SHELL

WITH THE MORNING PAPER, THE DAILY MAIL, IN MAGAZINES, ON T.V., ON RADIO, -  
AT EVERY TURN WE ARE BEING TOLD OF THE SERIOUS PROBLEMS MAN FACES AS THE  
RESULT OF HIS PAST EXPLOITATION OF THE EARTH'S NATURAL RESOURCES. WE ARE  
WARNED THAT THE CONTINUED WANTON DESTRUCTION OF NATURAL ECOLOGIES CAN  
EASILY RESULT IN THE EVENTUAL DESTRUCTION OF A LIVABLE EARTH. IN FACT, THE  
PROBLEMS ARE SO SERIOUS, THAT PERHAPS IT IS FRIVOLOUS TO WORRY ABOUT ONE  
LITTLE SPECIES OF SHELL. HOWEVER, PERSONAL PRINCIPLES ARE INVOLVED, AND BE-  
CAUSE THE DESIGNATION OF A STATE SHELL COULD SO EASILY BECOME JUST ONE MORE  
INSTANCE OF MAN'S SELFISH EXPLOITATION OF NATURE, PERHAPS YOU WILL BEAR WITH  
ME WHILE I EXPRESS SOME SECOND THOUGHTS I HAVE HAD ON THE SUBJECT.

IF THE TEXAS SHELL CLUBS COME TO AN AGREEMENT AND SUCCESSFULLY PROMOTE THE  
CREATION OF A STATE SHELL, WHAT WILL BE THE RESULT? RECENTLY I HAVE BEGUN  
HAVING "VISIONS" WHENEVER THIS QUESTION ARISES. I KEEP IMAGINING SOME OF THE  
FOLLOWING SITUATIONS OCCURRING AGAIN AND AGAIN, ALL OVER THE STATE OF TEXAS:  
(I HERE USE OLIVA SAYANA AS THE POSSIBLE STATE SHELL AS IT IS THE LATEST SPECIES  
PROPOSED FOR THE HONOR(?). HOWEVER, WHATEVER SPECIES MIGHT BE CHOSEN, THE  
RESULTS WOULD PROBABLY BE THE SAME.)

SCENE I: ELEMENTARY CLASSROOM. THE TEACHER SPEAKS: "FOR OUR SPRING  
OUTING WE ARE GOING TO THE BEACH. WE HAVE CHOSEN A DATE WHEN THERE WILL BE  
A VERY LOW TIDE, AND I WANT ALL OF YOU TO TRY TO COLLECT A SPECIMEN OF OUR  
STATE SHELL. REMEMBER WHAT WE HAVE STUDIED OF ITS HABITAT, AND IF WE FIND A  
GREAT MANY OF THE SHELLS, PERHAPS WE CAN SEND THE EXTRAS TO A SCHOOL IN NORTH  
TEXAS, AS THEY DON'T HAVE THE OPPORTUNITY TO KNOW THE SHELLS." - - - - -

SCENE II. TWO TWELVE YEAR OLD BOYS ARE SPEAKING: "HEY, JOHNNY, GUESS  
WHAT, I'M GOING TO THE BOY SCOUT JAMBOREE THIS YEAR." "YEAH? WHAT ARE YOU  
GONNA TAKE WITH YOU FOR TRADES?" "TEXAS OLIVE SHELLS! MY BIG BROTHER TOOK  
THEM LAST YEAR AND CAME BACK WITH ALL KINDS OF KEEN STUFF. I'VE BEEN COLLECT-  
ING ALL SUMMER WHEN WE'RE DOWN AT OUR BEACH COTTAGE. I GOT NEARLY 300 NOW.  
TOM ONLY TOOK 200 AND RAN OUT." - - - - -

SCENE III. ENTERTAINMENT COMMITTEE MEETING FOR A FUTURE CONVENTION.  
THE CHAIRMAN SPEAKS: "AS WE ARE USING THE SEA AS OUR THEME, WE'VE BOUGHT  
CORAL AND SEA FANS AND SUCH FOR THE CENTERPIECES. WHAT WE FEEL WILL BE THE  
NICEST TOUCH WILL BE PRESENTING EACH DELEGATE WITH A SPECIMEN OF OUR STATE  
SHELL, OLIVA SAYANA, AS A PLACE FAVOR. I'VE CONTACTED SEVERAL SHELL DEALERS  
IN GALVESTON, BUT THEY SAY WE'LL HAVE TO GET HELP TO GET THE 5000 WE WILL NEED,  
SO I'VE WRITTEN THE STATE SHELL CLUBS, AND SOME BOY AND GIRL SCOUT TROOPS ALONG  
THE COAST, AND - - - - - (OF COURSE THIS REFERS TO A SMALL CONVENTION.  
HOUSTON RECENTLY ENTERTAINED 60,000 AT ONE CONVENTION.)

SCENE IV. SOUVENIER SHOP. "OH, HENRY, I MUST GET SOMETHING TO TAKE  
TO ALL OUR GRANDCHILDREN UP NORTH. OH LOOK AT ALL THESE CUTE THINGS MADE FROM  
THE TEXAS STATE SHELL. KEY CHAINS, DOLLS, ANIMALS, ASH TRAYS, PAPER WEIGHTS,  
AND - - - - -"

WELL, I'M SURE YOU TOO CAN IMAGINE SUCH SCENES REPLAYED OVER AND OVER THROUGH  
THE YEARS. DO YOU GET THE FEELING THE OLIVE SHELLS SHOULD HEAD FOR DEEP WATER?

I AM ALSO REMINDED OF A VISIT I MADE TO SO. PADRE A FEW YEARS BACK. NOT LONG AFTER NORTH CAROLINA HAD DECLARED THE SCOTCH BONNET THEIR STATE SHELL. I STOPPED BY TO SEE BETTY ALLAN, AS I ALWAYS DO ON MY TRIPS DOWN THERE, AND AFTER HER USUAL WARM GREETING SHE CHUCKLED AND SAID, "DO YOU HAVE A STOCK OF SCOTCH BONNETS YOU'D LIKE TO GET RID OF?". IT SEEMED SHE HAD HAD A NUMBER OF INQUIRIES FROM NORTH CAROLINA SHELL DEALERS FOR THESE SHELLS, AS THE LOCAL SUPPLY HAD BEEN EXHAUSTED. THEY WERE FRANTIC TO TAKE ADVANTAGE OF THE DEMAND AND WANTED THE NORTH CAROLINA STATE SHELL, REGARDLESS OF WHAT STATE IT CAME FROM. COULD IT BE WE WOULD SEE A SIMILAR DISAPPEARANCE OF OUR OLIVES?

OF COURSE STATE SHELL OR NO, COLLECTING PRESSURES ARE ON THE INCREASE. THERE ARE MORE TOURISTS, SUMMER RESIDENTS, MARINE SCIENCE STUDENTS AND ACTUAL SHELL COLLECTORS ROAMING THE BEACHES EVERYDAY. HOWEVER, THIS SORT OF PERSONAL COLLECTING IS NOT AIMED AT ANY ONE SPECIES, AND FORTUNATELY, MOST SHALLOW WATER SPECIES HAVE A RANGE EXTENDING INTO DEEP ENOUGH WATER THAT A GOOD PERCENTAGE OF EACH SPECIES IS PROTECTED FROM CASUAL COLLECTING. HOWEVER, IF THE DEMAND ON ONE PARTICULAR SPECIES IS GREATLY INTENSIFIED, AND ESPECIALLY IF THERE IS THE POSSIBILITY OF A PROFIT INVOLVED, THE STORY MAY BE SOMETHING ELSE. WE CAN SEE THE EFFECTS OF SUCH A DEMAND IN THE COMMERCIAL, EDIBLE MOLLUSKS, SUCH AS THE PISMO CLAM, THE "CHERRYSTONES" OF THE EAST COAST, AND SO ON. THEY MUST BE PROTECTED BY SIZE, BY LIMIT AND/OR BY SEASONAL RESTRICTIONS ON COLLECTING. IN A FEW CASES EVEN THIS IS NOT ENOUGH, AS IS SEEN IN THE CALIFORNIAN ABALONE, AND THE SPECIES HAS BEEN SERIOUSLY DECIMATED. AND SO, IF A SPECIES IS DESIGNATED AS A STATE SHELL, THE RESULTING DEMAND MAY GIVE RISE TO MORE SOPHISTICATED METHODS OF COLLECTING, AND POSSIBLY THE SPECIES, AT LEAST ALONG OUR COAST COULD BE SERIOUSLY REDUCED IN NUMBERS.

OF COURSE WE HAVE A STATE FLOWER AND A STATE BIRD, AND THERE ARE STILL PLENTY OF THESE AROUND YEARS AFTER THEIR DESIGNATION AS STATE SYMBOLS. HOWEVER, WE MUST REMEMBER THAT THEY ARE PROTECTED FROM BOTH COLLECTING AND COMMERCIAL EXPLOITATION BY LAW. THEY ALSO ENJOY ONE OR TWO OTHER ADVANTAGES WE MIGHT CONSIDER.

THE BLUEBONNET HAS ONE SPECIAL ADVANTAGE. IT IS EASILY PROPAGATED BY MAN. DELIBERATELY PLANTED ALONG OUR HIGHWAYS, IT IS NEVERTHELESS PROTECTED BY LAWS PROHIBITING PICKING ALONG THE HIGHWAY RIGHT OF WAYS, IN STATE PARKS, ETC. OF COURSE MOST OF THE BREATH-TAKING DISPLAYS WE SEE OCCUR ON PRIVATE PROPERTY AND ARE INACCESSIBLE TO THE GENERAL PUBLIC. ALSO THE BLUEBONNET IS NOT AT ITS BEST AS A CUT FLOWER, AND SO MOST PEOPLE ARE CONTENT TO ENJOY ITS BEAUTY AS IT OCCURS IN ITS NATURAL HABITAT, KNOWING ANY THEY GATHER WILL SOON WITHER AND FADE.

THE MOCKINGBIRD IS ALSO PROTECTED AGAINST BOTH CAGING AND COLLECTING. AS ONE OF PROTECTED SONG BIRDS, IT IS UNLAWFUL TO HAVE EVEN A DEAD BIRD IN YOUR POSSESSION, THOUGH IT MAY BE ONE FOUND ALONG THE ROAD, OR EVEN IN YOUR OWN BACK YARD. WITHOUT A SPECIAL COLLECTORS PERMIT, WHICH ARE DIFFICULT TO OBTAIN, YOU ARE LIABLE TO AS MUCH AS A \$1000 FINE FOR POSSESSING ONE OF THE PROTECTED BIRDS. AS WITH THE BLUEBONNET, THE MOCKINGBIRD IS ALSO BEST APPRECIATED FOR SONG AND SAUCY MANNER IN ITS NATURAL HABITAT. FOR ITS PLUMAGE IS NOT ESPECIALLY ATTRACTIVE, AND MOST PEOPLE HAVE LITTLE DESIRE TO HAVE A DEAD BIRD AROUND THE HOUSE. THE BIRD AND FLOWER HAVE ONE OTHER DISTINCT ADVANTAGE. THEY OCCUR OVER A WIDE RANGE AND ARE WELL KNOWN THROUGHOUT MOST AREAS OF THE STATE.

WITH A STATE SHELL THE CIRCUMSTANCES ARE SOMEWHAT DIFFERENT. IT OCCURS

ONLY ALONG A VERY NARROW STRIP OF COASTAL BEACHES. IT IS LITTLE KNOWN EVEN TO THE MAJORITY OF COASTAL RESIDENTS, AND CERTAINLY CAN BE ONLY PARTIALLY APPRECIATED IN ITS NATURAL HABITAT. ONE MUST HAVE AN OLIVE SHELL IN THE HAND TO APPRECIATE THE FORM AND COLORFUL PATTERN. THE DEAD SHELL IS QUITE A LOVELY THING IN ITSELF, EASILY TURNED INTO A DESIRABLE SOUVENIR. AS MOST OF THE STATE RESIDENTS COULD ONLY HOPE TO KNOW IT AS A DEAD SHELL, IT IS UNDERSTANDABLE THAT IT COULD BECOME A VERY EXCELLENT ITEM TO FEATURE IN EVERY CURIO AND SOUVENIR SHOP THROUGHOUT THE STATE. THUS IT WOULD SEEM THAT, IF WE AS SHELL CLUB MEMBERS ARE TRULY CONCERNED WITH THE WELFARE OF THESE ANIMALS WE FIND SO FASCINATING, WE CAN HARDLY PROMOTE THE CREATION OF A STATE SHELL UNLESS WE ALSO PROMOTE A BILL THAT WOULD SIMULTANEOUSLY PROVIDE THE SAME KIND OF PROTECTION THAT FAVORS OUR STATE FLOWER AND STATE BIRD.

IN CONSIDERING SUCH A LAW, WE CAN SEE THAT IT WOULD HAVE TO MAKE TWO RATHER STRINGENT PROVISIONS: 1. No COLLECTING. (NO 'LIVE' COLLECTING? BUT THAT WOULD BRING UP THE SAME PROBLEM AS WITH THE BIRDS. HOW CAN YOU TELL WHAT STATE A SPECIMEN WAS PICKED UP AFTER IT'S IN A COLLECTION?) 2. No COMMERCIAL EXPLOITATION. ANYTHING LESS THAN THESE TWO PROVISIONS WOULD BE IMPOSSIBLE TO POLICE, AND PROBABLY WORTHLESS AS PROTECTION FOR THE SPECIES.

SO THINKING CAREFULLY OF ALL THE IMPLICATIONS OF PROMOTING A STATE SHELL, PERHAPS THE SHELL CLUBS SHOULD BE THE LAST GROUPS TO URGE SUCH EXPLOITATION OF A MOLLUSCAN SPECIES. AFTER ALL, IS A STATE SHELL REALLY NECESSARY? IS IT TRULY ANYTHING MORE THAN A PROMOTIONAL GIMMICK? WOULD IT SERVE A USEFUL PURPOSE, OTHER THAN 'SELLING' SHELLS? HOW WOULD YOU VOTE IS YOU WERE AN OLIVE SHELL?

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CONTINUED FROM PAGE 71

VIEW THE EXHIBITS. CERTAINLY THE LINES WERE LONG, LONG, LONG ALL DAY ON SUNDAY, MARCH 1, AT THE PARK PAVILLION. SOME FORTY HOUSTONIANS SPENT THE WEEK END EXHIBITING. JUDGING, SHELLING VIEWING THE SIGHTS ON THE ISLAND AND DIPPING BRIEFLY INTO MEXICO. EXHIBITORS FROM OUR CLUB WON MANY AWARDS. MR. AND MRS. HARRY SHORT WON BLUE RIBBONS, MRS. MILDRED TATE WON SHELL OF THE SHOW, MARY DRYDEN WON THE DIVISIONAL JUNIOR TROPHY, MRS. LEOLA GLASS WON A RIBBON ON ONE SPECIES, AND MRS. CONSTANCE BOONE WON BLUE RIBBONS AND THE SWEEPSTAKES RIBBONS FOR OUT-OF-TOWN EXHIBITORS. THERE WERE MANY OUTSTANDING DISPLAYS THIS YEAR.

SHELLING IN THE AREA IS STILL POOR. GRASSES ARE BEGINNING TO COME BACK, BUT MANY OF THE BEST BAY AREAS BEFORE HURRICANE BUELAH SEEM BARE EXCEPT FOR SMALL SPECIES. ONE PLEASANT MOMENT CAME WHEN TWO CHITONS WERE FOUND ALIVE ON THE CLUMPS OF OYSTERS, NONE HAVING BEEN FOUND SINCE BUELAH. JANTHINA JANTHINA WERE WASHING IN ON THE GULF BEACH ON MONDAY. DRIFT HUNTING STILL PRODUCES NICE EPITONIUMS, EMERALD NERITES, PINK PHEASANT SHELLS. OYSTERS SUPPORT ODOSTOMIA IMPRESSAS AND TURBONILLAS. PEDIPES MIRABILIS, ANACHIS, LITTORINA NEBULOSA, AND NERITA FULGURANS WERE FOUND ON THE ROCKS.

THE SOUTH PADRE SHELL CLUB IS TO BE COMPLIMENTED FOR SPONSORING THIS KIND OF MEETING FOR SHELLERS FROM ACROSS THE STATE AND FROM OTHER STATES. THE HOSPITALITY IS ALWAYS GREAT. MORE SHELL TALK IS AVAILABLE HERE THAN AT ANY TIME OF THE YEAR ANYWHERE AROUND HERE.

IN NOVEMBER OF LAST YEAR I VISITED THE BEACH AT SAN LUIS PASS AT TWO OCCASIONS SEPARATED BY A THREE WEEK INTERVAL. ON BOTH OCCASIONS WEATHER AND WIND CONDITIONS WERE PRACTICALLY THE SAME AND ALSO BEACH CONDITIONS APPEARED QUITE SIMILAR. EQUAL AMOUNTS OF BEACHDRIFT WERE PRESENT AND THEIR GREATEST ACCUMULATIONS WERE LOCATED ROUGHLY AT THE SAME SPOTS. THE FIRST SAMPLE WAS COLLECTED FOR THE PURPOSE OF OBTAINING A LARGE QUANTITY OF SMALL HYDROBIID SNAILS WHICH WERE PRESENT IN GREAT PROFUSION IN THE DRIFT. AT THE SAME TIME IT PROVIDED A FOLLOW UP OF AN EARLIER INVESTIGATION ABOUT RELATIVE ABUNDANCES OF SPECIES IN BEACHDRIFT WHICH I HAVE REPORTED BEFORE (TEX. CONCH. VOL. 2, NO. 6). AT THE SECOND VISIT A SAMPLE OF EQUAL SIZE WAS TAKEN, WHICH PROVED ESSENTIALLY SIMILAR IN COMPOSITION, THE DIFFERENCE BEING THAT THE LARGE NUMBER OF UPPER BAY SPECIMENS OF SEVERAL LITTLE GASTROPOD SPECIES WAS NEARLY MISSING IN THE 2ND SAMPLE. ALL MATERIAL RECORDED HERE WAS SMALLER THAN ONE QUARTER OF AN INCH, SO THAT MANY SPECIES ARE REPRESENTED ONLY BY JUVENILE SHELLS. THE SAMPLE SIZE WAS ABOUT ONE HALF OF ONE QUART OF FINE DRIFT, OF WHICH, AFTER WASHING, ABOUT 50% TURNED OUT TO BE SMALL WOOD FRAGMENTS, VEGETABLE MATTER AND THE ORGANIC REMAINS OF CRABS, ETC.

BEFORE I GET TO THE LIST OF SPECIES FOUND IN THE TWO SAMPLES IT MAY BE INTERESTING TO MENTION A LISTING OF SPECIES FOUND ALIVE ON THE MUDFLATS AND IN THE TIDELINE DURING THESE TWO VISITS. NOT ALL OF THEM ARE PRESENT IN THE SAMPLES NOR ARE ALL SPECIES FOUND DURING THE LAST TEN YEARS AT THIS LOCATION REPRESENTED IN OUR LIST. LIVE COLLECTED WERE:

EPITONIUM ANGULATUM	POLINICES DUPLICATUS
TECTONATICA PUSILLA	SINUM PERSPECTIVUM
THAIS HAEMOSTOMA	ANACHIS OBESA
ANACHIS OSTREICOLA	MITRELLA LUNATA
CANTHARUS CANCELLARIUS	BUSYCON CONTRARIUM
BUSYCON SPIRATUM	TEREBRA DISLOCATA
RETUSA CANDEI	LONCHAEUS CRENULATUS
ANADARA TRANSVERSA	ANADARA OVALIS
ATRINA SERRATA	CRASSOSTREA VIRGINICA
DOSINIA DISCUS	DINOCARDIUM ROBUSTUM
MERCENARIA CAMPECHIENSIS	TELLINA IRIS
ABRA AEQUALIS	DONAX ROEMERI
ENSIS MINOR	SPISULA SOLIDISSIMA SIMILIS
MULINIA LATERALIS	PANDORA TRILINEATA
PERIPLOMA ANGULIFERA	

ALSO A NUMBER OF SPECIES NOTED IN THE TIDE LINE CLOSE TO THE SAMPLE ARE NOT INCLUDED: RANGIA CUNEATA, RANGIA FLEXUOSA, CHIONE CANCELLATA, MACOMA CON-STRICTA, MACOMA TAGELIFORMIS, CALLOCARDIA TEXASIANA, LABIOSA LINEATA, MUREX FULVESCENS, DIODORA CAYENENSIS, TELLINA ALTERNATA, PHOLAS CAMPECHIENSIS, TRACHYCARDIUM MURICATUM, TAGELUS PLEBEIUS, BRACHIDONTES EXUSTUS, PHALIUM GRANULATUM, LUCINA FLORIDANA AND PHACOIDES PECTINATUS. THESE SPECIES LIVE EITHER IN THE INLETS OR IN THE SHELTERED BAYS. OF SOME I HAVE NEVER SEEN ANY JUVENILE FRESH MATERIAL (M. TAGELIFORMIS, C. TEXASIANA) IN BEACHDRIFT. THIS LARGE MATERIAL SHOULD PREFERABLY NEVER BE INCLUDED IN A STUDY SUCH AS THIS. LARGE SHELLS SURVIVE FOR A LONG TIME ON THE BEACH (PRESUMABLY SEVERAL YEARS)

BUT ARE WASHED ASHORE ONLY AT INFREQUENT INTERVALS AFTER A "BLOW". FINE DRIFT IS WASHED UP PROBABLY EVERY DAY AND DISSIPATED QUICKLY BY THE WIND AND WORN APART BY RUBBING SAND GRAINS. ITS SURVIVAL TIME IS AT MOST OF THE ORDER OF A FEW WEEKS AS THIS ANALYSIS WILL SHOW. THUS THE LARGER SPECIMENS OF SHELLS ARE CUMULATIVE ON THE BEACH AND INFERENCES CONCERNING THE FAUNAL COMPOSITION BASED ON RELATIVE ABUNDANCES OF THE LARGER SPECIES OF BEACH AND BAY SHELLS ARE APT TO BE ERRONEOUS. I BELIEVE THAT A STUDY OF THE SMALL FRACTION WILL GIVE A BETTER INSIGHT INTO THE LOCAL FAUNA. THIS CAN BE SEEN BY LOOKING AT THE NEXT TWO LISTINGS GIVING THE MOST COMMON GASTROPODS OF SAMPLE 1 AND SAMPLE 2. IN SAMPLE 1 A LARGE NUMBER OF LAND SNAILS LARGELY BELONGING TO THE FAMILIES PUPIDAE AND SUCCINEIDAE WERE PRESENT; IN THE 2ND THEIR NUMBER WAS GREATLY REDUCED. WE HAVE LEFT THEM OUT OF CONSIDERATION.

BOTH SAMPLES ARE LISTED IN ORDER OF DECREASING FREQUENCY:

SAMPLE (1)	SAMPLE (2)
1) THAIS HAEMOSTOMA	1) THAIS HAEMOSTOMA
2) ALL SPECIES OF EPITONIUM	2) ANACHIS OBESA & OSTREICOLA
3) ANACHIS OBESA & OSTREICOLA	3) POLINICES DUPLICATUS
	TECTONATICA
4) LITTORIDINOPS MONROENSIS	4) NASSARIUS ACUTUS
5) NASSARIUS ACUTUS	5) ALL SPECIES OF EPITONIUM
6) POLINICES DUPLICATUS	6) LITIOPA MELANOSTOMA
TECTONATICA PUSILLA	
7) CYCLOSTREMELLA HUMILIS	7) CYCLOSTREMELLA HUMILIS
8) LITIOPA MELANOSTOMA	8) ODOSTOMIA CF. GIBBOSA
9) ODOSTOMIA GIBBOSA	9) BITTIUM VARIUM
10) ASSIMINEA SUCCINEA	10) ACTEON PUNCTOSTRIATUS
11) ACTEON PUNCTOSTRIATUS	11) CRESEIS ACICULA
12) BITTIUM VARIUM	12) ALL SPECIES OF TURBONILLA
13) MITRELLA LUNATA	13) ODOSTOMIA WEBERI
14) RETUSA CANDEI	14) RETUSA CANDEI

FOR COMPARISON I STATE THE FREQUENCY DIAGRAM OF A SAMPLE REPORTED SOME YEARS AGO.

PREVIOUS SAMPLE

- 1) CYCLOSTREMELLA
- 2) EPITONIUM
- 3) CRESEIS
- 4) ANACHIS
- 5) THAIS
- 6) LITIOPA
- 7) BITTIUM
- 8) POLINICES & TECTONATICA
- 9) ACTEON
- 10) OLIVELLA

ONE SEES IMMEDIATELY THAT BOTH SAMPLES 1 AND 2 ARE ABOUT EQUAL IN COMPOSITION EXCEPT FOR THE UNUSUAL ABUNDANCE OF LITTORIDINOPS AND ASSIMINEA IN THE FIRST SAMPLE. THERE IS ALSO NOT MUCH DIFFERENCE WITH THE EARLIER REPORTED SAMPLE. ONLY A FEW SPECIMENS WERE LEFT 3 WEEKS LATER, LOOKING WORN AND DISCOLORED. THE LIST OF BIVALVES SHOWS AN EVEN MORE SIMILAR DISTRIBUTION AND WOULD ONLY DIFFER IN THE LAST THREE PLACES; FOR THIS REASON WE HAVE COMBINED

IT IN A SINGLE LIST. (8 AND 9 REVERSED FOR SAMPLE 1, AND 10 REPLACED BY ANAGARA TRANSVERSA WHICH HOWEVER OCCURS SO SPARINGLY AS TO MAKE ITS RANKING WITHOUT SIGNIFICANCE.)

PRESENT LIST	PREVIOUS LIST
1) MULINIA LATERALIS	1) MULINIA
2) DONAX ROEMERI	2) ABRA
3) CRASSOSTREA VIRGINICA OSTREA EUQUESTRIS	3) PERIPLOMA
4) PERIPLOMA ANGULIFERA	4) PETRICOLA
5) PETRICOLA PHOLADIFORMIS	5) TELLINA
6) TELLINA IRIS	
7) ABRA AEQUALIS	
8) BARNEA TRUNCATA - CRYPTOPLEURA COSTATA	
9) ENSIS MINOR	
10) LABIOSA PLICATELLA	

THE FOLLOWING LIST IS MOST REMARKABLE FOR THE SPECIES NOT LISTED: ARCIDAE WERE SCARCE IN THE SAMPLE, ANOMIA IS VIRTUALLY MISSING AND DINOCARDIUM WHICH SHOWS UP IN COUNTLESS SMALL JUVENILES WAS PRACTICALLY ABSENT. INSTEAD A LARGE NUMBER OF JUVENILES OF BARNEA AND CYRTOPLEURA WAS FOUND. THIS SUGGESTS THAT SOMETHING MAY BE LEARNED BY REGULAR SAMPLING THROUGHOUT THE YEAR AT A SINGLE LOCATION. COMPARISON WITH THE PREVIOUS LISTING (VOL. 2 (6)) SHOWS THAT DONAX CAN VARY CONSIDERABLY IN ABUNDANCE.

AS NOTED PREVIOUSLY MULINIA TURNED OUT TO BE BY FAR THE MOST COMMON MOLLUSK IN THE SAMPLE. IN BOTH SAMPLES THE NUMBER OF INDIVIDUALS OF THIS SPECIES WAS IN EXCESS OF 80% OF THE TOTAL SAMPLE. ALMOST ALL THAIS SHELLS WERE THE VERY YOUNG SINUSIGERA STAGE OF THE SPECIES, OF WHICH ONLY A FEW HAD DEVELOPED ANY FURTHER. EXCEPT FOR THE PELAGICS, LITIOPA AND CRESEIS, THE SURFZONE AND INLET (?) LABIOSA AND THE UPPER BAY LITTORIDINOPS, ASSIMINEA AND ODOSTOMIA WEBERI, ALL SPECIES ARE LOCALLY DERIVED FROM SHALLOW WATER. ODOSTOMIA WEBERI HOWEVER SEEMS TO BE PRESENT ALWAYS AND COULD LIVE CLOSE BY, AS IT WAS PRESENT IN ALMOST EQUAL PROPORTION IN BOTH SAMPLES.

.....TO BE CONTINUED.

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CONTINUED FROM PAGE 74

THE FOLLOWING SOURCES MAY BE OF INTEREST TO OUR READERS:

- 1841 AMPHIDESMA NUCULOIDES CONRAD, AM. JOURN. SCI., VOL. 41, P. 347.
- 1889 SEMELE NUCULOIDES CONRAD, DALL, BULL. 37, U.S.N.M., P. 62, No. 371.
- 1900 SEMELE NUCULOIDES CONRAD, DALL, TRANS. WAGNER FREE INST. SCI., VOL. 3, PT. 5, P. 994.
- 1951 SEMELE NUCULOIDES CONRAD, MCLEAN, BIVALVE MOLLUSCA OF PORTO RICO, P. 107, PL. 22, FIG. 3.
- 1953 SEMELINA NUCULOIDES CONRAD, OLSSON AND HARBISON, MONOGRAPH 8, ACAD. NAT. SCI., PHILA. PA., P. 134.

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# CONCHOLOGIST

VOL. VI, No. 8

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APRIL, 1970

## NOTES & NEWS

MAY 31 1989  
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### NEXT MEETING

DR. HAROLD W. HARRY, ASSOCIATE PROFESSOR OF BIOLOGY AT TEXAS A&M UNIVERSITY, WILL TALK ON "MOLLUSCA DISTRIBUTED BY MAN" AT THE APRIL 22 MEETING OF THE SOCIETY, TO BE HELD AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE. DR. HARRY'S DISCUSSION WILL CONCERN MAN'S ROLE IN BRINGING IN DIFFERENT KINDS OF TERRESTRIAL, MARINE, AND FRESH WATER SHELLS AND ESTABLISHING THEM IN AREAS FOREIGN TO THEIR NATURAL ENVIRONMENTS. THE RESULTS OF SUCH ACTIONS BY MAN, SOMETIMES CAUSING A KIND OF "POLLUTION BY MOLLUSCS," MAKE A STORY REQUIRING ATTENTION FROM BIOLOGISTS AND COLLECTORS.

PLANS ARE ALSO BEING MADE TO HAVE SPECIMEN SHELLS DONATED FOR THE SHARPSTOWN SHOW ON DISPLAY FOR PURCHASE BY OUR MEMBERS.

### REPORT MARCH MEETING

AFTER READING OF THE MINUTES, LLOYD MEISTER GAVE SOME DETAILS ABOUT THE FIELD TRIP FOR APRIL. MARY SUTOW REPORTED ABOUT THE PREPARATIONS FOR THE SHELL FAIR IN THE SHARPSTOWN MALL.

THE BALLOTS FOR THE ELECTION OF OFFICERS AND BOARD MEMBERS WERE COUNTED, IN ALL 49 BALLOTS. THE SLATE NOMINATED BY THE NOMINATING COMMITTEE WAS ELECTED. BECAUSE MR. C. CARDEZA INDICATED THE WISH TO WITHDRAW, MRS. ANN SPEERS WAS ELECTED IN HIS PLACE.

THE PROGRAM WAS OPENED BY PLAYING PART OF THE RECORDING OF SCIENTIFIC NAMES SPOKEN BY DR. R. T. ABBOTT. AFTER THAT FOLLOWED A MOST ENJOYABLE TIME OF IDENTIFICATION OF SHELLS, LOCAL AND WORLDWIDE. MOST OF THE TIME THE EXPERTS WERE BAFFLED.

### OPEN HOUSE

BY LLOYD MEISTER

THE FOURTH ANNUAL OPEN HOUSE OF THE BRAZOSPORT MUSEUM OF NATURAL SCIENCE WILL BE HELD ON MAY 3, 1970. IT IS THE HOPE OF THE MUSEUM'S CURATOR, MILDRED TATE, THAT AS MANY OF YOU AS POSSIBLE WILL ATTEND THE FESTIVITIES.

AT SOME LATER DATE, PROBABLY IN THE MAY ISSUE, I WILL ANNOUNCE A DIFFERENT KIND OF FIELD TRIP. IT WILL HELP MEMBERS IN IDENTIFYING SHELLS. THESE SHELLS ARE AT THE AFOREMENTIONED MUSEUM. IT WILL GIVE YOU A CHANCE TO LEARN MORE ABOUT SHELLS FROM ALL OVER THE WORLD, AND FROM OUR OWN SHORES.

IF THERE IS ENOUGH INTEREST EXPRESSED TO ME ABOUT SUCH A FIELD TRIP I WILL MAKE THE ARRANGEMENTS. LET ME HEAR FROM YOU.....

CONTINUED ON PAGE 92.....

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY MYACIDAE.

TO THIS FAMILY BELONG THE SO CALLED SOFTSHELL OR STEAMER CLAMS, WHICH ARE A POPULAR FOOD IN NEW ENGLAND. THESE LARGE CLAMS ARE NORTH ATLANTIC FORMS. IN TEXAS ONLY A SINGLE SMALL SPECIES OF THE GENUS SPHENIA.

SPHENIA ANTILLENIS DALL AND SIMPSON 1901. THIS SPECIES WAS DISCOVERED SEVERAL YEARS AGO BY MRS. SPEERS AT SOUTH PADRE ISLAND. SEVERAL LIVE SPECIMENS WERE COLLECTED FROM STONES NEAR THE COAST GUARD STATION. RECENTLY FIVE FRESH VALVES WERE COLLECTED AT THE SAME LOCATION (ODÉ).

FIGURED IN: 3

PREVIOUS REFERENCES: NONE

LOCALITIES: SOUTH PADRE ISLAND

WE WILL DISCUSS A FEW SPECIES WHICH WERE OMITTED IN PAST ISSUES.

### FAMILY DONACIDAE.

IPHIGENIA BRASILIENSIS LAMARCK, 1818. A FEW FRAGMENTAL SHELLS OF THIS SPECIES HAVE BEEN COLLECTED IN DRIFT ON PADRE ISLAND. NO MATERIAL HAS BEEN AS YET OBTAINED BY DREDGING OFFSHORE GALVESTON OR FREEPORT. IT THEREFORE APPEARS PROBABLE THAT THE SPECIES REACHES ITS NORTHERN LIMIT NEAR PADRE ISLAND. IT HAS BEEN REPORTED FROM TAMPICO (REF. 11).

FIGURED IN: 1, 2, 3, 5, 6

PREVIOUS REFERENCES: (SEE REF. 11).

LOCALITIES: RARE ON THE BEACHES OF PADRE ISLAND.

### FAMILY MURICIDAE.

RISOMUREX ROSEUS REEVE, 1856. IN DREDGED OFFSHORE MATERIAL THIS SPECIES OF RISOMUREX IS NOT UNCOMMON. THE TEXAS MATERIAL AGREES WELL WITH DESCRIPTIONS AND FIGURES OF R. ROSEUS, BUT DIFFERS SOMEWHAT IN COLORATION. OFFSHORE MATERIAL, EVEN WHEN DREDGED ALIVE, IS EITHER DRAB WHITISH OR REDDISH BROWN IN COLOR AND NEVER SHOWS TRACES OF PINK OR BANDED PATTERNS. A SINGLE SHELL WAS OBTAINED TWO YEARS AGO FROM DRIFT ON MATAGORDA BEACH. (COLL. ODÉ). PROBABLY THIS SPECIES HAS BEEN CONFUSED WITH JUVENILE MATERIAL OF CANTHARUS CANCELLARIUS. IT SHOULD BE TO JUDGE FROM ITS DISTRIBUTION OFFSHORE, MORE COMMON THAN ITS RECORDS INDICATE. A FIGURE OF A SPECIMEN OB-



TAINED OFF THE EAST TEXAS COAST , BUT MISLABELLED AS DRUPA NODULOSA IS SHOWN ON PLATE 8 , FIGURE 4 IN REFERENCE 12 .

FIGURED IN: 3

PREVIOUS REFERENCES: NONE

LOCALITIES: MATAGORDA BEACH .

FAMILY VENERIDAE .

PARASTARTE TRIQUETRA CONRAD , 1846 . IN A RECENT ISSUE OF THE TEXAS CONCHOLOGIST THIS SPECIES WAS LISTED FROM A SAMPLE OF BEACHDRIFT COLLECTED AT SAN LUIS , GALVESTON ISLAND . A SINGLE , SLIGHTLY CHIPPED , VALVE WAS OBTAINED . IT SEEMS PROBABLE THAT THIS VALVE IS ADVENTITIOUS AT THIS LOCATION (INTRODUCED BY WATERFOWL?) . IN HIS BOOK AMERICAN SEASHELLS , ABBOTT LISTS THIS SPECIES WITH A QUESTION MARK FOR TEXAS , BUT WE DO NOT KNOW ON WHAT AUTHORITY .

FIGURED IN: 1 , 3 , 4 , 6

PREVIOUS REFERENCES: NONE

LOCALITIES: SAN LUIS PASS (GALVESTON ISL.)

CORRECTION:

IN THE PREVIOUS ISSUE WE STATED THAT NO LIVE SPECIMENS OF PARAMYA SUBOVATA WERE KNOWN FROM TEXAS . THIS IS INCORRECT . A SINGLE LIVE SPECIMEN WAS COLLECTED ON GALVESTON WEST BEACH AFTER HURRICANE CARLA . (COLL. ODÉ)

CYCLOSTREMISCUS PENTAGONUS GABB .

BY H. ODÉ

THIS QUITE COMMON LITTLE VITRINELLID HAS ONLY A FEW TIMES BEEN COLLECTED ALIVE ALONG THE TEXAS COAST . MOST BEACH MATERIAL IS WORN , ESPECIALLY AT GALVESTON , BUT CAN STILL BE EASILY RECOGNIZED , BECAUSE OF THE TABLE-LIKE UPPER SURFACES OF THE WHORLS , AS SHOWN FOR INSTANCE IN PLATE 49 , FIGS. A , B , C OF PERRY AND SCHWEN- GEL'S WEST COAST OF FLORIDA SHELLS . C. PENTAGONUS IS PROBABLY MOST ABUNDANT ON SAND IN SHALLOW WATERS . IT MAY LIVE ON TUBICOLOUS WORMS , BUT THIS IS A GUESS ON MY PART . MRS. C. BOONE HAS OBTAINED LIVE MATERIAL FROM THE SHELF AREA OFF FREEPORT . AT SOUTH PADRE ISLAND USUALLY FRESHER MATERIAL CAN BE OBTAINED FROM BEACHDRIFT THAN AT GALVESTON . THESE FRESH SHELLS HAVE A SLIGHTLY GREENISH COLOR .

THE SYNONYMY OF THE SPECIES IS QUITE INVOLVED . ORIGINALLY IT WAS REPORTED UNDER THE NAME ADEORBIS SUPRANITIDUS WOOD , WHICH HOWEVER IS A WESTERN EUROPEAN FOS- SIL (GT. BRIT.) . THE SPECIES WAS PLACED IN THE GENUS SKENEA AND ITS SPECIFIC NAME CHANGED TO TRILIX BY BUSH . ACCORDING TO WOODRING (1928) AND MOORE (1967) C. TRILIX BUSH IS SYNONYMOUS WITH C. PENTAGONUS GABB , DESCRIBED FROM SANTO DOMINGO .

PREVIOUS REFERENCES FOR TEXAS ARE:

1955 ADEORBIS SUPRANITIDUS WOOD , HULINGS , MASTERS THESIS , T.C.U. , 87 P .

1956 ADEORBIS SUPRANITIDUS WOOD , PARKER , BULL. AM. ASS. PETR. GEOL. , VOL. 40 , P. 295-376 .

1959 CYCLOSTREMISCUS TRILIX BUSH , PARKER , BULL. AM. ASS. PETR. GEOL. , VOL. 43 , P. 2100-2166 .

1959 ADEORBIS SUPRANITIDUS WOOD , KENNEDY , MASTERS THESIS , T.C.U .

1964 CYCLOSTREMISCUS PENTAGONUS GABB , MOORE , PH.D. THESIS , UNIV. MIAMI , 235 P .

1967 CYCLOSTREMISCUS PENTAGONUS GABB , HARRY , MARINE MOLLUSCA OF GALVESTON . TEXAS A&M , GALVESTON , TEXAS .

WE MENTION HERE THE FOLLOWING SOURCES:

- 1873 *CYCLOSTREMA PENTAGONA* GABB, AM. PHIL. SOC. TRANS., NEW SERIES 15, P. 49-259.
- 1881 *VITRINELLA PENTAGONA* GABB, J. AC. NAT. SC., PHILA. 2D SERIES, 8, P. 349-380, PL. 45-47
- 1885 *SKENEIA TRILIX* BUSH, TRANS. CONN. AC. ARTS AND SC., P. 464, PL. 14, FIGS. 7, 7A.
- 1889 *ADEORBIS SUPRANITIDUS* WOOD, DALL, BULL. 18, M.C.Z., P. 278; BULL. 37 U.S.N.M., P. 150, PL. 41, FIGS. 7, 7A.
- 1897 *CIRCULUS TRILIX* BUSH, TRANS. CONN. AC. SC., VOL. 10, P. 127, PL. 22, FIGS. 6, 10, 10A, 12A-G; PL. 23, FIGS. 10, 15.
- 1947 *CIRCULUS TRILIX* BUSH, GARDNER, U.S.G.S. PAPER 142H, PT. 8, P. 600.
- 1953 *CYCLOSTREMISCUS ? TRILIX* (BUSH), PILSBRY, MONOGR. 8, AC. NAT. SC., PHILA., P. 429, PL. 55, FIGS. 2-4D.
- 1955 *CYCLOSTREMISCUS TRILIX* BUSH, PERRY AND SCHWENGEL, MAR. MOLL. WEST COAST FLORIDA, P. 110, PL. 22, FIGS. 142 A, B; PL. 49, FIGS. 336 A, B, C.



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TURTLES AND RARE SHELLS TO HOG SPOTLIGHT IN HOUSTON SHELL FAIR BY MARY SUTOW

LIVE, GREEN SEA-TURTLES WILL VIE WITH AWARD-WINNING EXHIBITS FROM OTHER SHELL SHOWS AND WITH WORLD-FAMOUS RARITIES FROM THE DELAWARE MUSEUM OF NATURAL HISTORY FOR FEATURE SPOTS AT THE HOUSTON SHELL FAIR. MRS. MARY SUTOW AND MRS. ANNE SPEERS, CO-CHAIRMAN FOR THE COMING EVENT, DIVULGED SOME OF THE AMBITIOUS PLANS FOR THE FAIR WHICH WILL BE HELD AGAIN THIS YEAR AT THE SHARPSTOWN MALL, MAY 7-10, 1970.

MRS. ILA LOETSCHER HAS PROMISED TO SHOW HER PET TURTLES. MRS. LOETSCHER IS PARTICIPATING IN A JOINT MEXICAN AND UNITED STATES GOVERNMENT PROJECT TO HATCH AND RELEASE THESE TURTLES FROM PADRE ISLAND. RECENTLY, SOME 1700 BABY TURTLES WERE SENT INTO THE GULF WATERS. DR. R. TUCKER ABBOTT, DEPARTMENT OF MOLLUSKS CHAIRMAN AT THE DELAWARE MUSEUM HAS INDICATED THAT HE WILL SEND SOME RARE SEASHELLS INCLUDING VOLUTES AND POSSIBLY THE CONUS GLORIA-MARIS FOR DISPLAY. NEGOTIATIONS ARE UNDER WAY FOR THE SHELL OIL COMPANY EXHIBIT TO BE SHIPPED HERE FOR THE SHELL SHOW. THE HOUSTON MUSEUM OF NATURAL SCIENCE IS ALSO PREPARING A MOLLUSK-RELATED DISPLAY. PRIZE EXHIBITS PREPARED BY MEMBERS OF THE SOUTH PADRE ISLAND SHELL CLUB AND BRAZOSPORT MUSEUM WILL BE SHOWN. SEVERAL OTHER GROUPS HAVE INDICATED THEIR INTENTIONS TO PARTICIPATE.

COMMITMENTS HAVE BEEN RECEIVED FROM A GREAT MANY MEMBERS OF THE HOUSTON CONCHOLGY SOCIETY. IN ORDER TO PLAN FOR SPACE, TABLE REQUIREMENTS AND PLACEMENT, EXHIBITORS ARE REQUESTED TO NOTIFY, AS SOON AS POSSIBLE, THE RESPECTIVE CHAIRMEN OF THE CATEGORIES IN WHICH THEIR EXHIBITS WILL BE CLASSIFIED. EXHIBITS ARE TO BE PUT UP WEDNESDAY NIGHT, MAY 6, AND ARE TO BE TAKEN DOWN SUNDAY EVENING, MAY 10.

THE NAMES (AND PHONE NUMBERS IN BRACKETS) OF THE VARIOUS CHAIRMEN ARE LISTED BELOW:

GENERAL CHAIRMEN:	MRS. MARY SUTOW (528-3319)
	MRS. ANNE SPEERS (526-4273)
PUBLICITY:	MRS. CLARICE VAN ERP (465-2686)
SALES:	MRS. JEANE DASHIELL (781-2728)
SPECIMEN SHELL SALES:	LLOYD MEISTER (926-3812)
TEXAS-GULF COAST EXHIBITS:	HELMER ODE (664-9942)
EAST AND WEST COAST (USA)	
EXHIBITS:	MR. & MRS. SAM MIRON (723-3628)
WORLD-WIDE SHELL EXHIBITS:	MR. & MRS. CHARLES DOH (465-8530)
JUNIOR DIVISION EXHIBITS:	DOUGLAS REYNOLDS
GIRL SCOUTS EXHIBITS:	MRS. FAY DRYDEN (433-1644)
MUSEUM EXHIBITS:	MRS. ANNE SPEERS (526-4273)
NON-MARINE MOLLUSCAN	
EXHIBITS:	MRS. CONNIE BOONE (668-8252)
ARTS & CRAFTS EXHIBITS:	MRS. DOROTHY KISTER (723-3294)
FOSSIL EXHIBITS:	SIDNEY STUBBS (785-3078)
PHOTOGRAPHIC EXHIBITS:	DON SCHAEFER (528-6673)
MOLLUSKS AND FOOD EXHIBITS:	WAT SUTOW (528-3319)
SIGNS:	HARRY SHORT (664-9324)

TWO SALES TABLES WILL BE OPERATED THIS YEAR, ONE FOR REGULAR SHELL PACKETS AND THE OTHER FOR SPECIMEN SHELLS. DONATIONS ARE URGENTLY NEEDED FOR THESE TABLES. PLANS ARE BEING READIED FOR THE USUAL DINNER TO FOLLOW THE SHELL FAIR. TIME (PROBABLY SATURDAY NIGHT, MAY 9) AND PLACE WILL BE ANNOUNCED LATER.

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NOTES ON THE MICRO MOLLUSKS IN TWO SAMPLES OF BEACHDRIFT FROM SAN LUIS PASS, GALVESTON, TEXAS. PART II. (CONTINUED)

THE FOLLOWING LIST REPRESENTS ALL SPECIES IN THE SAMPLES:

<u>SPECIES</u>	<u>COMMENTS</u>
LITTORINA IRRORATA	FRAGMENTS IN BOTH SAMPLES

<i>Rissoina catesbyana</i>	SINGLE SPECIMEN IN SAMPLE 1
<i>Assimineia succinea</i>	ABUNDANT IN 1, RARE IN 2
<i>Littoridinops monroensis</i>	ABUNDANT IN 1, RARE IN 2
<i>Vioscalba louisianae</i>	A FEW IN BOTH 1 AND 2
<i>Texadina sphinctostoma</i>	FAIRLY COMMON IN BOTH SAMPLES
" <i>Odostomia</i> " <i>barretti</i>	A FEW IN BOTH SAMPLES
<i>Caecum pulchellum</i>	A FEW WORN IN BOTH SAMPLES
<i>Caecum "glabrum"</i>	A NUMBER OF FRESH IN BOTH SAMPLES
<i>Cyclostremella humilis</i>	ABUNDANT IN BOTH
<i>Cyclostremiscus pentagonus</i>	WORN SPECIMENS COMMON IN BOTH
<i>Cyclostremiscus suppressus</i>	A FEW WORN IN BOTH
<i>Solariorbis infracarinata</i>	A FEW FRESH IN 1
<i>Solariorbis blakei</i>	A FEW WORN IN BOTH
<i>Teinostoma biscaynense</i>	A SINGLE SPECIMEN IN BOTH
<i>Anticlimax pilsbryi</i>	2 SP. IN 1, 1 IN 2
<i>Cochliolepis striata</i>	1 SP. IN 1
<i>Vitrinella floridana</i>	FAIRLY COMMON IN BOTH
<i>Cerithium</i> sp.	1 SP. IN 1
<i>Bittium varium</i>	ABUNDANT, OLD IN BOTH
<i>Cerithidea pliculosa</i>	A FEW FRAGMENTS IN BOTH
<i>Cerithiopsis greeni</i>	MANY FRESH IN 1, A FEW WORN IN 2
<i>Seila adamsi</i>	A FEW FRAGMENTS IN BOTH
<i>Triphora perversa</i>	FRAGS. IN BOTH
<i>Modulus modulus</i>	FRAGS. IN BOTH
<i>Litiopa melanostoma</i>	ABUNDANT IN BOTH
<i>Vermicularia fargoii</i>	SINGLE FRAGMENT IN 1
<i>Epitonium angulatum</i>	ABUNDANT IN BOTH
<i>Epitonium apiculatum</i>	ABUNDANT IN BOTH
<i>Epitonium albidum</i>	ABUNDANT IN BOTH
<i>Epitonium rupicola</i>	A FEW IN BOTH
<i>Epitonium multistriatum</i>	FAIRLY COMMON IN BOTH
<i>Epitonium novangliae</i>	A FEW OLD IN BOTH
<i>Epitonium tollini</i>	A FEW IN BOTH
<i>Epitonium candeanum</i>	TWO FRESH IN 1
<i>Janthina prolongata</i>	1 SP. IN 1
<i>Crepidula convexa</i>	A FEW OLD IN BOTH
<i>Crepidula fornicata</i>	A FEW FRESH IN BOTH
<i>Crepidula plana</i>	A SINGLE JUVENILE IN
<i>Phalium</i> sp.	A FEW OLD IN 1
<i>Strombus pugilis alatus</i>	1 IN 2
<i>Tonna galea</i>	1 JUV. IN 2
<i>Tectonatica pusilla</i>	ABUNDANT IN BOTH
<i>Polinices duplicatus</i>	ABUNDANT IN BOTH
<i>Sinum prespectivum</i>	A FEW JUV. IN BOTH
<i>Thais haemostoma</i>	ABUNDANT IN BOTH
<i>Mitrella lunata</i>	ABUNDANT IN BOTH
<i>Anachis avara similis</i>	SEVERAL FRESH IN BOTH
<i>Anachis obesa</i>	COMMON IN BOTH
<i>Anachis ostreicola</i>	COMMON IN BOTH
<i>Anachis floridana</i>	2 FRESH IN 2
<i>Nassarius acutus</i>	ABUNDANT IN BOTH
<i>Busycon contrarium</i>	A FEW OLD IN BOTH

BUSYCON SPIRATUM	A FEW OLD IN BOTH
OLIVELLA DEALBATA	FAIRLY COMMON, OLD, IN BOTH
OLIVELLA MINUTA	1 SPEC. OLD IN 1
TEREBRA PROTEXTA	A FEW OLD FRAGMENTS IN BOTH
TEREBRA DISLOCATA	A FEW OLD FRAGMENTS IN BOTH
TEREBRA SALLEANA	A FEW FRAGMENTS IN 2
PYRGOCYTHARA PLICOSA	A FEW FRAGMENTS IN BOTH
KURTZIELLA CERINELLA	COMMON, WORN FRAGMENTS IN BOTH
ACTEON PUNCTOSTRIATUS	ABUNDANT IN BOTH
BULLA STRIATA	A SINGLE FRAGMENT IN 1
RETUSA CANDEI	ABUNDANT IN BOTH
VOLVULELLA SP.	1 SP. IN 1
CYLICHNA BIDENTATA	COMMON IN BOTH
HAMINOEA SUCCINEA	1 SP. IN 1
ATYS RIISEANA	1 SP. IN 1
MELANELLA HEMPHILLI	1 SP. IN 1
HENRYA SP.	SEVERAL IN 2
MENESTHO IMPRESSA	A FEW OLD IN BOTH
MENESTHO BUSHIANA	A FEW OLD IN BOTH
MENESTHO SEMINUDA	A FEW OLD IN BOTH
ODOSTOMIA GIBBOSA	ABUNDANT IN BOTH
ODOSTOMIA CANALICULATA	A FEW OLD IN BOTH
ODOSTOMIA WEBERI	ABUNDANT IN BOTH
ODOSTOMIA DIANTHOPHILA	TWO OLD IN 2
ODOSTOMIA SP.	SEVERAL FRESH IN 1
ODOSTOMIA SP.	SEVERAL FRESH IN 1
SULCORINELLA TERES	COMMON IN BOTH
SULCORINELLA SP.	SEVERAL IN BOTH
LONGCHAEUS CRENULATUS	COMMON IN 1, FRAGMENTS IN 2
SAYELLA LIVIDA?	A FEW IN 1
SAYELLA CROSSEANA ?	A FEW IN 1
SAYELLA SP.	A FEW IN 1, 1 IN 2
TURBONILLA HEMPHILLI	FRAGMENTS IN BOTH
TURBONILLA ELEGANS	COMMON IN 1, A FEW IN 2
TURBONILLA SP.	FRAGMENTS IN BOTH
TURBONILLA SP.	FRAGMENTS IN BOTH
TURBONILLA SP.	FRAGMENTS IN BOTH
CRESEIS ACICULA	ABUNDANT IN BOTH
CAVOLINA LONGIROSTIS	A FEW OLD IN BOTH
MELAMPUS BIDENTATUS	FRAGMENTS IN 2
NUCULANA ACUTA	A FEW OLD IN BOTH
NUCULANA CONCENTRICA	A FEW IN BOTH
ANADARA TRANSVERSA	FEW FRESH IN BOTH
ANADARA BRASILIANA	FEW FRAGMENTS IN BOTH
NOETIA PONDEROSA	FEW IN BOTH
BRACHIDONTES RECURVUS	A SINGLE JUVENILE IN 2
ANOMIA SIMPLEX	FEW FRAGMENTS IN BOTH
CRASSOSTREA VIRGINICA	ABUNDANT FRAGMENTS IN BOTH
OSTREA EQUESTRIS	ABUNDANT IN BOTH
ADULA SP.	1 COMPLETE IN 1
ALIGENA TEXASIANA	FAIRLY COMMON IN BOTH
MYSELLA PLANULATA	FRESH VALVES, FEW IN BOTH
MYSELLA SP.	OLD FRAGMENTS IN 1

DIPLODONTA SOROR	OLD VALVE IN 1
DINOCARDIUM ROBUSTUM	A FEW IN BOTH
DOSINIA DISCUS	SEVERAL IN BOTH
MERCENARIA CAMPECHIENSIS	TWO JUV. IN BOTH
ANOMALOCARDIA CUNEIMERIS	A FEW IN BOTH
PARASTARTE TRIQUETRA	SINGLE VALVE IN 1
PETRICOLA PHOLADIFORMIS	ABUNDANT IN BOTH
TELLINA IRIS	ABUNDANT IN BOTH
STRIGILLA MIRABILIS	A FEW VALVES IN BOTH
MACOMA TENTA	A FEW VALVES IN BOTH
DONAX ROEMERI	ABUNDANT IN BOTH
SEMELE PROFICUA	A SINGLE JUV. IN 1
ABRA AEQUALIS	ABUNDANT IN BOTH
CUMINGIA TELLINOIDES	A FEW VALVES IN 1
TAGELIS DIVISUS	A SINGLE JUV. IN 2
ENSIS MINOR	ABUNDANT IN BOTH
MULINIA LATERALIS	ABUNDANT IN BOTH
LABIOSA PLICATELLA	FEW IN 1, ABUNDANT JUV. IN 2
ROCELLARIA HIANS	SEVERAL VALVES IN 1
CORBULA SP.	SEVERAL FRESH IN BOTH
CORBULA SWIFTIANA	1 OLD IN 1
PARAMYA SUBOVATA	TWO VALVES IN 2
UNKNOWN CORBULID	1 VALVE IN 2
BARNEA TRUNCATA	MANY JUV. IN BOTH
CYRTOPLEURA COSTATA	MANY JUV. IN BOTH
PHOLAS CAMPECHIENSIS	A FEW JUV. IN
DIPLOTHYRA SMYTHI	SEVERAL VALVES IN BOTH
BANKIA OR TEREDO SP.	SEVERAL IN BOTH
PERIPLOMA ANGULIFERA	ABUNDANT IN BOTH
DENTALIUM TEXASIANA	OLD FRAGMENTS COMMON IN BOTH
ACANTHOPLEURA APICULATA	SINGLE PIECE IN 1

APART FROM A FEW SPECIES WHICH WERE COLLECTED IN ONLY ONE OF THE TWO SAMPLES, WHICH IS TO BE EXPECTED ON STATISTICAL GROUNDS, BOTH SAMPLES WERE SURPRISINGLY EQUAL. THE DIFFERENCE BETWEEN BOTH SAMPLES CAN BEST BE SUMMARIZED BY THE STATEMENT THAT SAMPLE 1 CONTAINED A NUMBER OF SMALL GASTROPOD SPECIES, SWEEPED BY THE CURRENT OR WIND FROM THE UPPER PARTS OF THE BAY SYSTEM. THESE ARE: LITTORIDINOPS MONROENSIS, ASSIMNEA SUCCUNEA, ODOSTOMIA SP., ODOSTOMIA SP., SAYELLA LIVIDA, SAYELLA EROSSEANA, AND SAYELLA SP. THE IDENTIFICATION OF L. MONROENSIS IS OF COURSE TENTATIVE. THE SPECIES WAS FIRST LISTED BY HARRY (1968) FOR GALVESTON. IT AGREES IN ALL EXTERNAL CHARACTERS VERY WELL WITH THE FIGURES AND DESCRIPTION BY THOMPSON (1968), BUT STUDY OF THE SOFT ANATOMY IS DESIRABLE. IT IS POSSIBLE THAT ALSO THE DIFFERENT ABUNDANCE OF CERITHIOPSIS GREENI, TURBONELLA ELEGANS, CUMINGIA TELLINOIDES AND SEVERAL OTHER SPECIES WHICH WERE PRESENT IN SMALL NUMBERS IN SAMPLE 1 AND VIRTUALLY MISSING IN SAMPLE 2 CAN BE EXPLAINED BY THIS MECHANISM. A LOCAL RAINSTORM IN SOME PART OF THE BAY COULD CONCEIVABLY FLUSH A LIMITED AREA WITH A SOMEWHAT SPECIALIZED FAUNA. FOR THE ABUNDANCE OF HENRYA IN THE FIRST SAMPLE I HAVE NO EXPLANATION. IT IS POSSIBLE THAT THE WIND HAS BLOWN THE TIDELINE CLEAR OF THIS SPECIES. THESE SHELLS ARE SO SMALL AND LIGHT THAT WHEN AT LOW TIDE THE SUN HAS DRIED THE BEACHDRIFT IT IS POSSIBLE THAT THESE EXTREMELY LIGHT SHELLS ARE WIND BLOWN OUT OF THE DRIFT. THE MOST RE-

MARKABLE FACT ABOUT THIS LIST IS THE PRESENCE OF A NUMBER OF SPECIES HITHERTO UNRECORDED FOR THIS LOCATION AND EVEN THE TEXAS COAST. INCLUDED ARE SOME SPECIES WHICH WERE FOUND EARLIER BUT MERIT SOME REMARKS:

- 1) RISSOINA CATESBYANA. THIS IS THE FIRST SPECIMEN, TO MY KNOWLEDGE, COLLECTED AT SAN LUIS PASS. IT HAS BEEN FOUND ONCE ON THE OUTER BEACH OF GALVESTON (ODE) BUT IS NOT UNCOMMON IN THE CORPUS CHRISTI AREA.
- 2) CERITHIUM SP. A SMALL, POSSIBLY JUVENILE SHELL UNKNOWN TO ME
- 3) EPITONIUM CANDEANUM. SOMETIME AGO MRS. C. BOONE HAD COLLECTED THIS SPECIES AT THIS LOCATION FOR THE FIRST TIME. OUR TWO SPECIMENS APPEAR TO BE THE SAME. HOWEVER, JUVENILE SHELLS OF E. APICULATUM AND CANDEANUM ARE VERY DIFFICULT TO SEPARATE AND IT IS, IN MY OPINION, EVEN POSSIBLE THAT THIS COMPLEX IN FACT CONSTITUTES ONLY A SINGLE SPECIES.
- 4) ANACHIS FLORIDANA. THE SECOND TIME THAT THIS SPECIES WAS COLLECTED HERE. IT UNDOUBTEDLY BELONGS ALSO IN THE AVARA COMPLEX, BUT IS QUITE DIFFERENTLY COLORED.
- 5) VOLVULELLA SP. A SMALL SHELL, THE FIRST OF THIS GENUS REPORTED FROM GALVESTON BEACHES.
- 6) HAMINOEA SUCCINEA. ONLY RARELY HAS THIS SPECIES BEEN TAKEN AT SAN LUIS PASS.
- 7) ATYS RIISEANA. THE SECOND RECORD OF THIS SPECIES FOR THIS LOCATION.
- 8) ODOSTOMIA SP. A NUMBER OF VERY FRESH AND MINUTE SHELLS OF A SPECIES UNKNOWN TO ME AND COLLECTED FOR THE FIRST TIME.
- 9) ODOSTOMIA SP. A NUMBER OF VERY FRESH AND MINUTE SHELLS, DIFFERENT FROM THOSE ABOVE, UNKNOWN TO ME AND COLLECTED FOR THE FIRST TIME.
- 10) SULCORINELLA TERES. USUALLY LISTED AS ODOSTOMIA ENGONIA TERES BUSH. IT IS UNLIKELY THAT THIS IS AN "ODOSTOMIA" AND I PREFER THE GENERIC DESIGNATION PROPOSED BY BARTSCH FOR SOME VERY SIMILAR SHELLS FROM FLORIDA. THIS SPECIES IS NOT RARE ON TEXAS BEACHES.
- 11) SULCORINELLA SP. A SMALLER AND RARER SPECIES THAN THE PREVIOUS ONE. IT HAS BEEN COLLECTED BEFORE AT THIS LOCATION.
- 12) SAYELLA LIVIDA. THIS IS THE FATTEST OF THE THREE SPECIES LISTED HERE AND IS RARE ON GALVESTON ISLAND.
- 13) SAYELLA CROSSEANA. A SOMEWHAT MORE SLENDER FORM COLLECTED FOR THE FIRST TIME ON GALVESTON ISLAND.
- 14) SAYELLA SP. A VERY SMALL SLENDER SAYELLA, WHICH I HAVE NEVER SEEN BEFORE.
- 15) ADULA SP. THIS MYTILID, PROBABLY UNDESCRIBED AS YET, HAS BEEN FOUND SO FAR ONLY FURTHER SOUTH ON THE TEXAS COAST. A SINGLE COMPLETE SPECIMEN FROM THE DRIFT. SEVERAL OTHERS WERE PICKED IN VERY FRESH STATE OUT OF A PIECE OF DRIFTWOOD COLLECTED NEAR THE SAMPLING LOCALITY. IT MAY BE MENTIONED THAT A SMALL NUMBER OF A VERY GLOBOSE, SMALL LEPTONID SPECIES WAS ASSOCIATED WITH ADULA SP. IN THE WOOD. SO FAR, I HAD NOT COLLECTED THOSE ON THE BEACH, ALTHOUGH THIS SPECIES IS NOT UNUSUAL IN OFFSHORE DREDGE MATERIAL.
- 16) PARASTARTE TRIQUETRA. THIS SPECIES HAS BEEN MENTIONED WITH A QUESTION MARK FOR TEXAS BY ABBOTT (AMER. SEA SHELLS, P. 419), BUT SO FAR IT WAS NEVER COLLECTED. THE SINGLE VALVE IS A LITTLE CHIPPED AT THE LOWER EDGE, BUT OTHERWISE IN FAIRLY GOOD GENERAL CONDITION. IT IS POSSIBLE THAT THIS SPECIES DOES NOT BELONG TO THE LIVING TEXAS FAUNA, BUT WAS INTRODUCED BY A MIGRATING BIRD.
- 17) UNKNOWN CORBULID. THE FIRST VALVE OF THIS SPECIES COLLECTED BY ME. IT HAS A VERY PECULIAR IRREGULAR, WAVY, RADIATING PATTERN OF STRIAE.
- 18) ACANTHOPLEURA APICULATA. THE FIRST CHITON PIECE EVER COLLECTED BY ME AT GALVESTON. THE SPECIES APPARENTLY DOES LIVE IN THE SALTIER BAYS.

IN THE FEBRUARY, 1967 ISSUE OF THE TEXAS CONCHOLOGIST I BRIEFLY OUTLINED THE CONTENTS OF A 2-VOLUME PUBLICATION EDITED BY K. M. WILBUR AND C. M. YONGE AND CALLED PHYSIOLOGY OF THE MOLLUSCA. IT WAS POINTED OUT THEN THAT THE CHAPTERS IN THE BOOKS WERE WRITTEN BY AUTHORITIES IN THE FIELD AND THAT WHILE THE TEXT MAY BE TOO HIGHLY SPECIALIZED FOR MANY OF THE SHELL COLLECTORS, REFERENCE DOCUMENTATION OF AT LEAST THE CHAPTER HEADINGS SEEMED WORTHWHILE.

WE HAVE ANOTHER RECENTLY PUBLISHED BOOK OF SIMILAR NATURE AND SCOPE. THIS IS THE BIOLOGY OF THE MOLLUSCA BY R. D. PURCHON (PERGAMON PRESS, 1968, 560 PAGES, \$27). DR. PURCHON IS PROFESSOR OF ZOOLOGY IN THE UNIVERSITY OF LONDON AT CHelsea COLLEGE OF SCIENCE AND TECHNOLOGY. IN WRITING THE BOOK IT WAS DR. PURCHON'S PURPOSE "TO MAKE READILY AVAILABLE THE INTERESTING ARGUMENTS BROUGHT FORWARD, THE ILLUSTRATIONS, AND THE CONCLUSIONS REACHED IN A LARGE NUMBER OF AUTHORITATIVE PAPERS ON MOLLUSCS WHICH HAVE BEEN PUBLISHED DURING THE LAST 40 OR 50 YEARS".

THE BOOK CONTAINS THE FOLLOWING CHAPTERS:

1. FORM AND FUNCTION OF THE MANTLE CAVITY AND ASSOCIATED ORGANS.
2. FEEDING METHODS AND ADAPTIVE RADIATION IN THE GASTROPODA.
3. FEEDING METHOD AND EVOLUTION IN THE BIVALVIA.
4. ADAPTIVE RADIATION IN THE POLYSYRINGIAN BIVALVES.
5. DIGESTION
6. REPRODUCTION
7. DISTRIBUTION OF MOLLUSCS.
8. THE FUNCTIONS OF THE NERVOUS SYSTEM IN THE DIBRANCHIATE.

EACH CHAPTER IS WRITTEN FOR THE ZOOLOGICAL STUDENT AND THE PROFESSIONAL AND THE LANGUAGE IS TECHNICAL. HOWEVER, EACH OF THE CHAPTERS PROVIDES AN INTERESTING AND FAIRLY UNDERSTANDABLE PERSPECTIVE EVEN FOR US AMATEURS. AS USUAL, SIGNIFICANT REFERENCES ARE LISTED IN THE BIBLIOGRAPHY.

FOR ME PERSONALLY, THE MOST FASCINATING PORTIONS OF THE BOOK WERE THE TWO APPENDICES TITLED "APPENDIX A, THE FOUR MINOR CLASSES" AND "APPENDIX B, THE THREE MAJOR CLASSES". THESE APPENDICES WERE INTENDED TO INCLUDE A "NUMBER OF EXERCISES IN WHICH THE STUDENT INVESTIGATES THE ANATOMY OF THE ANIMAL". THE ANATOMY OF A MOLLUSK FROM EACH CLASS IS DESCRIBED. MUCH LIKE A COLLEGE LABORATORY MANUAL, CONCISE INSTRUCTIONS ARE GIVEN FOR DISSECTION OF THE ANIMAL. THE KEY FINDINGS AT EACH STEP ARE INDICATED IN THE TEXT. A NUMBER OF HELPFUL DIAGRAMS ARE INCLUDED FOR ORIENTATION. THE FOLLOWING SPECIES ARE DESCRIBED: MONOPLACOPHORA - NEOPILINA GALATHEA; POLYPLACOPHORA - LEPIDOCHITONA CINEREUS; APLACOPHORA - CHAETODERMA; AND, SCAPHOPODA - DENTALIUM CONSPICUUM AND DENTALIUM ENTALIS. FOR THE THREE MAJOR CLASSES, EXAMPLES DISCUSSED ARE: BIVALVIA - ASPATHARIA BRUMPTI; GASTROPODA - BUCCINUM UNDATUM, APLYSIA WINNEBA AND ARCHACHATINA SPECIES; AND, CEPHALOPODA - SEPIA OFFICINALIS.

THE AUTHOR POINTS OUT THAT ABOUT A THOUSAND SCIENTIFIC ARTICLES ARE PUBLISHED EACH YEAR ON MOLLUSKS. IN THE PERIOD OF TIME COVERED BY THE BOOK ABOUT 50,000 PAPERS ON MOLLUSKS WERE PUBLISHED.



A.M.U. - THIRTY-SIXTH ANNUAL MEETING, JULY 16-20, 1970

THE 36TH ANNUAL MEETING OF THE AMERICAN MALACOLOGICAL UNION IS SET FOR JULY 16-20, 1970 AT KEY WEST, FLORIDA. THE A.M.U. RECENTLY DISTRIBUTED INFORMATION REGARDING THIS MEETING. HOUSING WILL BE AT THE KEY WESTER MOTOR INN AND VILLAS (ROOSEVELT BOULEVARD ON A1A, KEY WEST, PHONE 305/296-5671). LECTURE SESSIONS WILL BE HELD IN THE KEY WESTER CONVENTION HALL.

THE HIGHLIGHTS OF THE ANNOUNCED PROGRAM INCLUDE -

WEDNESDAY, JULY 15: INFORMAL GET-TOGETHER 8:00 P.M.

THURSDAY, JULY 16: "HISTORY OF FLORIDA MALACOLOGY" BY DR. WM. J. CLENCH AND "EVOLUTION OF A SHELLER" BY M. K. JACOBSON IN ADDITION TO OTHER PAPERS, 2-5 P.M.

FRIDAY, JULY 17: "COMMERCIAL MARINE MOLLUSKS OF THE UNITED STATES" AN ALL-DAY SYMPOSIUM. SHELL CLUB NIGHT AT 8:00 P.M.

SATURDAY, JULY 18: PAPERS IN A.M. - FIELD TRIP IN THE AFTERNOON, LOW (-0.6) TIDE AT 4:00 P.M.

SUNDAY, JULY 19: PAPERS ALL DAY. SESSION FOR SHELL COLLECTORS FEATURING HARPA (HAROLD REHDER), CASSIDAE (TUCKER ABBOTT), AND A "CONE IDENTIFICATION CLINIC" (WILLIAM OLD), AT 8:00 P.M.

MONDAY, JULY 20: SYMPOSIUM IN A.M. ON "BIOLOGICAL SYSTEMATICS OF MARINE GASTROPODS". CLOSING PAPERS IN P.M. INCLUDING THE PAST-PRESIDENTIAL ADDRESS BY JOSEPH ROSEWATER ON "THE MOLLUSCAN FAMILY LITTORINIDAE". ANNUAL BANQUET IN EVENING WITH AN ILLUSTRATED TALK ON LIVING CEPHALOPODS BY A REPRESENTATIVE FROM THE UNIVERSITY OF MIAMI MARINE LABORATORY.

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THE SHELL FAIR AT CORPUS CHRISTI

BY W. W. SUTOW, M.D.

DR. GEORGE METZ WITH HIS "COAT OF MAIL SHELLS" DISPLAY, AN IMPRESSIVE SHOWING OF WEST COAST (U.S.A.) CHITONS, WON THE MAJOR DUPONT TROPHY AT THE EIGHTH ANNUAL SHELL FAIR OF THE COASTAL BEND SHELL CLUB THAT WAS HELD IN CORPUS CHRISTI MARCH 7 AND 8, 1970.

THE TEXAS SHELL OF THE SHOW AWARD WAS GIVEN TO MILDRED TATE FOR HER FINE SPECIMEN OF OOCORIS BARTSCHI REHDER. OTHER MAJOR AWARDS INCLUDED THE GARY TROPHY FOR TEXAS LAND SNAILS (WON BY REV. AND MRS. F. G. BUTLER OF ALICE), THE TRICOLOR RIBBON FOR AN ESPECIALLY OUTSTANDING EXHIBIT (AWARDED TO THE DUPONT TROPHY WINNER FROM THE PORT ISABEL SHOW - THE GULF OF CALIFORNIA DREDGED SHELL DISPLAY BY MRS. FRISBIE AND MRS. POE), AND, THE SWEEPSTAKE RIBBON FOR THE MOST BLUE RIBBONS (WON BY DR. AND MRS. THACHER GARY OF SAN MARCOS).

IN ADDITION TO THE SHELL OF THE SHOW AWARD, MILDRED TATE WON BLUE RIBBONS IN THE ONE-AREA LOCAL TEXAS WATERS CATEGORY (WITH A DISPLAY OF RARE DREDGED DEEP

WATER SPECIES) AND IN THE SPECIAL GROUP CATEGORY (WITH HER COLLECTION OF ALBINO SHELLS). SHE ALSO RECEIVED MERIT AWARDS FOR THE LOCAL SHELLS CATEGORY AND FOR THE ONE FAMILY CATEGORY (WITH A DISPLAY OF PECTENS.)

THE COASTAL BEND CLUB PRESENTED A WELL ORGANIZED SHELL SHOW THAT WAS HELD THIS YEAR AT THE GARDEN CENTER. THE ATTENDANCE BY PARTICIPANTS AND BY THE PUBLIC WAS GOOD AND THE COMPETITION FOR THE MAJOR AWARDS WAS QUITE BRISK. THE JUDGES WERE MRS. MYRA TAYLOR (SAN ANTONIO), PAUL MCGEE (HOUSTON) AND W. W. SUTOW (HOUSTON).

#### SAN ANTONIO SHELL CLUB ANNOUNCES PLANS FOR A "SHELL EXPOSITION"

THE FIRST SAN ANTONIO SHELL EXPOSITION HAS BEEN SCHEDULED BY THE SAN ANTONIO SHELL CLUB FOR OCTOBER 8 TO 11, 1970. THIS WILL BE HELD AT THE WONDERLAND SHOPPING CITY IN SAN ANTONIO.

THE SHOW SCHEDULE HAS ALREADY BEEN DISTRIBUTED. THERE IS A MAJOR DIVISION (WITH 5 CLASSES) FOR THE TEXAS GULF COAST MOLLUSCA. THERE IS ANOTHER MAJOR DIVISION FOR TEXAS LAND AND FRESH WATER MOLLUSCA. A HALL OF FAME DIVISION FOR PREVIOUS WINNERS HAS ALSO BEEN ANNOUNCED. THE OTHER TWO DIVISIONS INCLUDE THE SPECIAL GROUPS (9 CLASSES AND SUBCLASSES) AND THE GENERAL CATEGORY OF MOLLUSKS (4 CLASSES).

RIBBONS WILL BE AWARDED IN EACH CLASS AND SUBCLASS. THE BEST EXHIBIT IN EACH OF THE 5 DIVISIONS WILL BE AWARDED A TROPHY. A "BEST SHELL" RIBBON WILL BE GIVEN IN EACH OF THE 5 DIVISIONS AND THE "SHELL OF THE SHOW" WILL BE SELECTED FROM THE DIVISION WINNERS.

THE PHILADELPHIA ACADEMY OF NATURAL SCIENCES AWARD WILL BE PRESENTED TO THE MOST OUTSTANDING COLLECTION OF THE SHOW". THE GARY AWARD WILL GO TO THE OUTSTANDING TEXAS LAND GASTROPOD EXHIBIT AND THE MURRAY AWARD WILL GO TO THE OUTSTANDING TEXAS FRESH WATER EXHIBIT.

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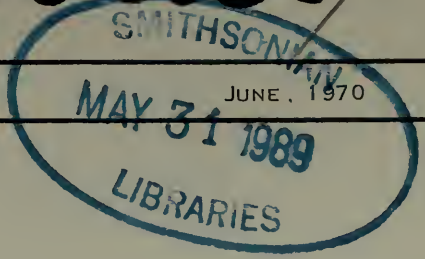
.....CONTINUED FROM PAGE 81

OUR APRIL MEETING HAS BEEN DESIGNATED AS OUR ANNUAL MEETING. A SHORT REVIEW OF THE PAST YEAR WILL BE PRESENTED AND PLANS FOR THE COMING YEAR WILL BE DISCUSSED.

ON PAGE 71 OF OUR PREVIOUS ISSUE WE DISCUSSED AN ARTICLE IN GEOTIMES. THE QUOTATION MARK AFTER ATTEMPTED WAS OMITTED. FROM THE SAME PAPER I QUOTE: "TWO MAJOR SECTIONS OF THE TREATISE ON INVERTEBRATE PALEONTOLOGY WERE RELEASED IN 1969. THE LONG AWAITED PELECYPOD VOLUMES PROVIDE A MUCH NEEDED SYNTHESIS OF THE IMPORTANT GROUP, EXCEPT FOR THE OYSTERS WHICH ARE TO BE COVERED IN A 3RD VOLUME. OF PARTICULAR INTEREST ARE THE INTRODUCTORY SECTIONS: GENERAL FEATURES OF THE BIVALVIA BY L. R. COX; FORM, FUNCTION AND EVOLUTION BY E. G. KAUFFMAN, AND CLASSIFICATION OF BIVALVIA BY NORMAN D. NEWELL. MANY OF THE IDEAS WILL SERVE AS A BASES FOR DISCUSSION AND DEBATE AMONG MOLLUSC WORKERS FOR YEARS TO COME." NOTE EDITOR: WE RECOMMEND BOTH VOLUMES AND THE MEMOIR TO THE ATTENTION OF THE LIBRARY COMMITTEE.

no. 9  
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# CONCHOLOGIST



Vol. VI, No. 9

## NOTES & NEWS

NEXT MEETING (AUGUST, 1970)

THE PROGRAM FOR THE AUGUST MEETING WILL BE ANNOUNCED LATER.

### REPORT APRIL MEETING

AFTER READING OF THE MINUTES MRS. SUTOW REPORTED ON THE PREPARATIONS FOR THE ANNUAL SHELL FAIR. MRS. VAN ERP, AS PUBLICITY CHAIRMAN FOR THE FAIR, REPORTED GOOD PROGRESS IN HER EFFORTS TO PUBLICIZE THE SHELL FAIR THROUGH LOCAL NEWS CHANNELS.

MRS. BOONE INFORMED THE MEETING THAT THE BEAUMONT SHELL CLUB WILL STAGE ITS SHOW THIS YEAR DURING THE SECOND WEEK OF JUNE AT THE ROYAL COACH INN IN BEAUMONT. NEXT, SHE INTRODUCED THE MAIN SPEAKER FOR THE EVENING, DR. HAROLD W. HARRY, ASSOCIATE PROFESSOR OF BIOLOGY AT TEXAS A&M UNIVERSITY. DR. HARRY GAVE A MOST INTERESTING TALK ON THE SUBJECT: "MOLLUSCA INTRODUCED BY MAN IN FOREIGN ENVIRONMENTS". AN ANIMATED QUESTION AND ANSWER PERIOD FOLLOWED HIS PRESENTATION.

### REPORT SHELL SHOW IN SHARPSTOWN MALL.

THE SHELL SHOW IN THE SHARPSTOWN MALL WAS VIEWED BY MORE THAN 15,000 VIEWERS. MANY OF OUR MEMBERS EXHIBITED AND BEAUTIFUL DISPLAYS FROM MEMBERS OF OUR SISTER CLUBS CONTRIBUTED TO THE GREAT INTEREST SHOWN BY THE PUBLIC. THE CLUB IS INDEBTED TO MARY SUTOW WHO ORGANIZED THE AFFAIR AND PERSUADED, COORDINATED AND CAJOLED US INTO PLENTY; TO LLOYD MEISTER AND DOUG REYNOLDS WHO DID ALL OF THE BACKBREAKING UNGLAMOROUS WORK WITHOUT WHICH NO FAIR CAN SUCCEED; TO JEANE DASHIELL WHO WITH HER STAFF SPENT LONG HOURS TO CLEAN, SORT AND PACKAGE SHELLS TO MAKE US AN AFFLUENT SOCIETY; TO HARRY SHORT WHO PREPARED THE BEAUTIFUL SIGNS FOR THE DIFFERENT DEPARTMENTS; TO CLAIRIE VAN ERP WHO ABLY TOOK CARE OF THE PUBLICITY, SO THAT MANY OF US BECAME TV STARS OVERNIGHT.

OUTSTANDING EXHIBITS WERE SHOWN BY THE MUSEUM OF NATURAL SCIENCE OF HOUSTON, THE DELAWARE MUSEUM OF NATURAL HISTORY, THE BRAZOSPORT MUSEUM OF NATURAL SCIENCE AND SHELL OIL COMPANY. WE ENJOYED THE COOPERATION OF THE OCEANOGRAPHY CENTER OF THE HOUSTON INDEPENDENT SCHOOL DISTRICT, AND ELEMENTARY SCHOOLS. ROBERT HAYNES, FIRST PRIZE WINNER OF THE SENIOR SPACE-SCIENCE DIVISION OF THE GREATER HOUSTON SCIENCE FAIR EXHIBITED HIS PRIZE WINNING EXHIBIT OF THE OYSTER. GIRL SCOUTS EXHIBITED AND THERE WAS SOME BREATHTAKING UNDERWATER AND ABOVE WATER PHOTOGRAPHY. A SHELLCRAFT SHOP VIED WITH A SHELL SHOP FOR ATTENTION.

CONTINUED ON PAGE 100.....

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

FAMILY MELANELLIDAE. THIS DIFFICULT FAMILY OF SLENDER CONICAL GASTROPODS HAS A NUMBER OF REPRESENTATIVES ON THE TEXAS COAST. VERY LITTLE IS KNOWN ABOUT THEIR HABITS, BUT IT APPEARS PROBABLE THAT MOST ARE PARASITES OF OTHER ORGANISMS. THE TAXONOMY OF THESE SHELLS IS INVOLVED AND MORE WORK BY EXPERTS IS NECESSARY TO STRAIGHTEN OUT THE CONFUSION WITHIN THIS GROUP. FROM TEXAS BEACHES THE GENERA NISO, BALCIS, STROMBIFORMIS AND MELANELLA ARE KNOWN. NISO IS RELATIVELY LARGE WITH AN OPEN UMBILICUS; BALCIS IS CONICAL WITHOUT UMBILICUS AND HAS A RELATIVELY SMALL BODY WHORL; STROMBIFORMIS IS LONG AND SLENDER, GLASSY AND THIN SHELLED WITH A RELATIVELY LARGE BODY WHORL. FOR THE FORMS WITH A STRONGLY CURVED SPIRAL, WE, MERELY AS A MATTER OF CONVENIENCE, USE THE GENERIC NAME MELANELLA.

NISO INTERRUPTA SOWERBY 1834. THIS ATTRACTIVE SHELL HAS ONLY UNCOMMONLY BEEN COLLECTED DEAD ON THE TEXAS BEACHES. MOST MATERIAL COMES FROM PORT ARANSAS AND FURTHER SOUTH. IN REFERENCE 11 THE NAME N. INTERRUPTA IS ERRONEOUSLY APPLIED TO THE PYRAMIDELLID SPECIES LONGCHAEUS CRENULATUS HOLMES. IN OFFSHORE DREDGINGS N. INTERRUPTA IS WIDESPREAD AND COMMON. FIGURED IN: 4,6,13

PREVIOUS REFERENCES: 13,19

LOCALITIES: SABINE MCFADDIN BEACH (ODE), PORT ARANSAS

BALCIS JAMAICENSIS C.B. ADAMS, 1845. PROBABLY THE MOST COMMON MELANELLID OF THE TEXAS BEACHES. OCCASIONALLY THE SPECIES IS RATHER COMMON IN BEACH DRIFT, AND USUALLY A FEW SPECIMENS CAN BE COLLECTED FROM BEACH-DRIFT. IT IS COMMON OVER THE SHELF AREA NEAR GALVESTON AND FREEPORT. LIVE MATERIAL IS KNOWN FROM PORT ISABEL BAY AND INGLESIDE (SPEERS). FIGURED IN: CLENCH & TURNER, OCC. PAP. ON MOLL., VOL. 1 (15), PL. 36, FIG. 5.

PREVIOUS REFERENCES: 19

LOCALITIES: HAS BEEN COLLECTED ALL ALONG THE TEXAS COAST.

BALCIS CONOIDEA KURTZ & SIMPSON, 1854. THIS SPECIES WHICH IS DIFFERENT FROM THE PREVIOUS ONE IN HAVING A KEELED BODY WHORL AND A DIFFERENTLY SHAPED MOUTH IS LESS COMMON THAN B. JAMAICENSIS. IT IS COMMON OVER THE SHELF

AREA NEAR GALVESTON AND FREEPORT. THE SPECIES HAS BEEN DREDGED ALIVE NEAR THE COAST GUARD STATION AT SOUTH PADRE ISLAND.

FIGURED IN: 7

PREVIOUS REFERENCES: 11,13,19

LOCALITIES: GALVESTON, MATAGORDA, PORT ARANSAS, SOUTH PADRE ISLAND.

BALCIS HEMPHILLI DALL, 1884. THIS SMALLER SHELL IS UNCOMMONLY FOUND DEAD IN BEACHDRIFT ALONG THE TEXAS COAST. WE GIVE THIS NAME WITH SOME RESERVATION AS IDENTIFICATION OF SPECIES WITHIN THIS FAMILY IS DIFFICULT BECAUSE OF THE CONFUSION IN ITS TAXANOMY. THIS SPECIES IS OF A UNIFORM BROWN COLOR AND IS CONSIDERABLY SMALLER THAN BOTH PREVIOUS ONES. LIVE MATERIAL IS KNOWN FROM PORT ISABEL (SPEERS).

FIGURED IN: 4,6,

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, PORT ISABEL.

STROMBIFORMIS BIFASCIATA ORBIGNY, 1842. THIS SMALL SPECIES WHICH IS OCCASIONALLY NOT UNCOMMON IN BEACHDRIFT, HAS BEEN TAKEN FROM BEACHDRIFT ALONG THE ENTIRE TEXAS COAST. THIS IS THE SPECIES WHICH IN THE PAST WE HAVE CALLED STROMBIFORMIS BILINEATA ALBER, 1834. IT IS A SMALL SLENDER THIN SHELLED GLASSY SHELL WITH TWO BROWN BANDS. IT IS NOT UNCOMMON OFFSHORE SO THAT IT IS PROBABLY RESTRICTED TO RATHER SHALLOW WATER. DEAD SPECIMENS ARE KNOWN ONLY, BUT OFTEN THEY ARE FRESH.

FIGURED IN: 3

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, MATAGORDA, ST. JOSEPH ISL., SOUTH PADRE ISL.

MELANELLA ARCUATA C.B. ADAMS, 1850. ON SEVERAL OCCASIONS A NUMBER OF VERY SMALL MELANELLIDS HAVE BEEN COLLECTED ON TEXAS BEACHES, WHICH SHOW THE TYPICAL CURVATURE OF THE SPIRAL STRUCTURE, GIVING THE SHELL A PARTICULAR DROOPY APPEARANCE. PERHAPS SOMEWHAT ARBITRARILY WE HAVE NAMED THESE SHELLS M. ARCUATA C. B. ADAMS. THESE FORMS ARE SOMEWHAT UNUSUAL ON TEXAS BEACHES. WHEN FRESH THEY ARE GLASSY CLEAR. SEVERAL LIVE SPECIMENS WERE COLLECTED AT PORT ISABEL, STRAINED FROM MATERIAL DISGORGED BY SEACUCUMBERS (SPEERS).

FIGURED IN: DALL, 1889, GASTROPODS BLAKE REPORT, PL. 19, FIG. 11

PREVIOUS REFERENCES: 18 (OFFSHORE ON BAKER BANK.)

LOCALITIES: GALVESTON, SOUTH PADRE ISLAND.

#### REMARKS:

A GREAT MANY OF THE SPECIES HAVE BEEN OBTAINED IN DREDGINGS FROM THE SHELF. IT IS PROBABLE THAT SOME AS YET UNIDENTIFIED BEACH MATERIAL IN OUR COLLECTIONS BELONGS TO ONE OR TWO OTHER SPECIES. MORE MATERIAL IS NEEDED TO DECIDE THIS.

TO BE CONTINUED.....

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#### NEW MAGAZINE FOR SHELL COLLECTORS

THE FIRST ISSUE OF A NEW MAGAZINE FOR SHELL COLLECTORS HAS APPEARED. "OFF SEA AND SHORE" WILL BE PUBLISHED FOUR TIMES A YEAR. SUBSCRIPTION IS \$3.50 PER YEAR; INDIVIDUAL COPIES ARE \$1.00. IT CAN BE ORDERED FROM THE EDITOR, THOMAS C. RICE, P. O. Box 33, PORT GAMBLE, WA. 98364, U.S.A.

WITH SUMMER JUST AROUND THE CORNER, MANY CLUB MEMBERS, NO DOUBT, ARE MAKING PLANS FOR ALL SORTS OF SHELL COLLECTING FORAYS TO DISTANT VACATION SPOTS. ARE YOU HEADED FOR THE CALIFORNIA COAST? IF YOU ARE, HERE ARE SOME TIDBITS OF INFORMATION OF POSSIBLE INTEREST TO YOU.

1. IN CALIFORNIA, A SPORT FISHING LICENSE IS REQUIRED OF ANY PERSON, 16 YEARS OF AGE AND OLDER, FOR THE TAKING OF MOLLUSKS. THIS MEANS THE COLLECTING OF ANY LIVE SPECIMEN. A SPECIAL NON-RESIDENT 10-DAY SPORT FISHING LICENSE COSTS \$3.00. A SPECIAL 3-DAY LICENSE FOR WATERS OF THE PACIFIC OCEAN ONLY MAY BE HAD FOR \$1.00.
2. CERTAIN MOLLUSKS, SUCH AS ABALONES, CLAMS, CHIONES, COCKLES, MUSSELS AND SCALLOPS HAVE SEASON, COLLECTING HOURS, SIZE, AND BAG REGULATIONS. THE REGULATIONS ARE STRICTLY ENFORCED. BE SURE YOU KNOW THE DETAILS.
3. NO FISH, MOLLUSKS OR CRUSTACEANS MAY BE TAKEN IN THOSE WATERS ADJACENT TO CERTAIN PORTIONS OF THE SANTA CATALINA ISLAND.
4. NO INVERTEBRATES EXCEPT CLAMS, ABALONES, CRABS, CHIONES, COCKLES, MUSSELS SCALLOPS AND LOBSTER MAY BE TAKEN IN ANY TIDE POOL OR OTHER AREA BETWEEN THE HIGH TIDE MARK AND A POINT 1,000 FEET BEYOND THE LOW TIDE MARK OFF-SHORE FROM ANY STATE PARK, STATE BEACH, STATE RECREATION AREA OR STATE RESERVE. COLLECTING IN THESE PROHIBITED AREAS IS SUBJECT TO STIFF FINES. UNFORTUNATELY, ACCESS TO THE SHORE MAY BE HAD IN ONLY THESE PUBLIC PLACES SO DO BE SURE OF YOUR SHELLING GROUNDS.
5. DO NOT EAT MUSSELS DURING THE SUMMER. SPECIFIC DETAILS SHOULD BE CHECKED OUT LOCALLY.
6. ALL MOLLUSKS MAY BE TAKEN BY SKIN DIVING (WITH A LICENSE). SIMILARLY, MOLLUSKS MAY BE TAKEN BY SCUBA DIVING IN ALL OCEAN WATERS SOUTH OF YANKEE POINT IN MONTEREY COUNTY. IN ALL OCEAN WATERS NORTH OF YANKEE POINT, ONLY ROCK SCALLOPS MAY BE TAKEN BY SCUBA DIVING.

FOR SHELLING ALONG THE ENTIRE CALIFORNIA COAST, RICKETTS, CALVIN AND HEDGPETH'S BETWEEN PACIFIC TIDES (AVAILABLE IN OUR LIBRARY) IS A DELIGHTFUL AND INFORMATIVE DISCUSSION OF THE ECOLOGY, ZONATIONS, AND MOLLUSCAN HABITATS THAT ONE ENCOUNTERS IN CALIFORNIA. THE BOOK DESCRIBES THE INVERTEBRATE LIFE, INCLUDING MOLLUSKS, THAT ABOUNDS ALONG THE SHORES OF THE GOLDEN STATE. R. T. ABBOTT'S SEASHELLS OF NORTH AMERICA IS A HANDY CHECKLIST FOR THE SEASHELLS OF THE PACIFIC COAST. J. H. MCLEAN'S MARINE SHELLS OF SOUTHERN CALIFORNIA AUTHORITATIVELY LISTS THE SPECIES MOST COMMONLY FOUND IN SOUTHERN CALIFORNIA. CALIFORNIA ABALONES, FAMILY HALIOTIDAE (BY K. W. COX), COMMON MARINE BIVALVES OF CALIFORNIA (BY J. E. FITCH), AND A COLLECTOR'S GUIDE TO WEST COAST CHITONS (BY THE BURGHARDTS) ALL SHOULD BE MOST USEFUL.

THIS WIDESPREAD AND RATHER COMMON GASTROPOD CAN OFTEN BE COLLECTED IN FAIR NUMBERS FROM BEACHDRIFT ALONG THE TEXAS COAST. IT IS USUALLY FOUND IN DRIFT FROM THE BAYS AND BEACHES CLOSE TO THE INLETS. LIVE MATERIAL HAS, AS FAR AS I KNOW, NOT YET BEEN OBSERVED IN TEXAS. THE SPECIES IS PROBABLY A COMMENSAL OR A PARASITE OF TUBICOLOUS WORMS. CHARACTERISTIC OF THE SPECIES IS THE FORMATION OF A THIN LAYER OF SHINY CALCAREOUS MATERIAL OVER THE UPPER PART OF THE WHORLS SO THAT THE EARLY WHORLS ARE COVERED. IN VERY YOUNG SPECIMENS THIS LAYER IS ABSENT. THE UMBILICUS IS AS IN MOST TEINOSTOMAS COMPLETELY FILLED BY A CALLUS, EVEN IN JUVENILE MATERIAL. BY THIS CHARACTERISTIC IMMATURE SHELLS CAN BE DIFFERENTIATED FROM IMMATURE VITRINELLA FLORIDANA. TEINOSTOMA AND VITRINELLA PROBABLY ARE CLOSELY RELATED.

LIKE SO MANY OF THE TEXAS MICROMOLLUSKS THIS COMMON SPECIES HAS SELDOM BEEN REPORTED BEFORE. WE HAVE MENTIONED IT SEVERAL TIMES IN THIS PUBLICATION.

OTHER REFERENCES ARE:

- 1964 MOORE, D. R., PHD DISSERTATION. UNIVERSITY OF MIAMI, FLORIDA, 235 P.  
 1967 HARRY, H. W., MARINE MOLLUSCA OF GALVESTON. TENTATIVE AND PRELIMINARY LIST. MAR. LAB. TEX. A&M, GALVESTON, TEXAS (2ND ED. 1968).  
 1969 ODÉ, H. AND SPEERS, A., TEX. CONCHOL., VOL. 6, P. 3.



ACCORDING TO D. R. MOORE, TEINOSTOMA OBTECTUM PILSBRY AND MCGINTY 1945 AND TEINSTOMA NESAEUM PILSBRY AND MCGINTY 1945 ARE IDENTICAL WITH IT. THE FOLLOWING SOURCE MAY BE OF USE FOR THOSE WHO WANT TO STUDY THIS INTERESTING GROUP OF MICROMOLLUSKS:

1945 TEINOSTOMA BISCAYNENSE PILSBRY AND MCGINTY, NAUTILUS, VOL. 59, P. 1-13, PL. 1, FIG. 4.

THE LARGEST SPECIMEN IN THE PHOTOGRAPH, TAKEN BY MR. C. DEXTER, IS SLIGHTLY UNDER 2 MILLIMETER. THE SPECIMENS WERE COLLECTED FROM BEACHDRIFT ON MATA-GORDA BEACH.

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SHELLS IN THE CULTURE OF THE AMERICAN INDIAN

BY ANNE SPEERS

#### INTRODUCTION

IN SEARCHING FOR INFORMATION ON THE AMERICAN INDIANS' USE OF SHELLS FOR THE DISPLAY EXHIBITED BY THE HOUSTON MUSEUM OF NATURAL SCIENCE IN OUR RECENT SHELL SHOW, I WAS MOST FORTUNATE IN HAVING ACCESS TO THE MUSEUM'S ANTHROPOLOGY LIBRARY. I WAS RATHER AMAZED AT THE AMOUNT OF MATERIAL AVAILABLE ON THIS RATHER OBSCURE SUBJECT, AND BECAME QUITE FASCINATED WITH THE SUBJECT BEFORE I HAD COMPLETED THE PROJECT. BECAUSE WE COULD NOT DISPLAY SOME OF THE MORE INTERESTING INDIAN ARTICLES USING SHELL, SUCH AS WAMPUM BELTS OR CARVED SHELL GORGETS, I THOUGHT PERHAPS THE READERS OF THIS PAPER MIGHT, NEVERTHELESS BE INTERESTED IN HEARING ABOUT THESE UNIQUE USES OF SHELL, AS WELL AS A MORE DETAILED REPORT ON SOME OF THEIR USES SHOWN IN THE MUSEUM EXHIBIT.

THE FOLLOWING REPORT, WHICH WILL APPEAR IN SEVERAL PARTS, IS, FOR THE MOST PART TAKEN DIRECTLY FROM THE LITERATURE, WITH CONSIDERABLE CONDENSING AND CUTTING. FOR THOSE WHO MIGHT LIKE TO PURSUE THE SUBJECT FURTHER, I WILL INCLUDE A LIST OF THE BOOKS I FOUND MOST INFORMATIVE.

#### THE AGE OF SHELL

IN A BROAD REGION AT ONE TIME OCCUPIED BY THE MOUND-BUILDING INDIAN TRIBES OF NORTH AMERICA, WE OBSERVE A PECULIAR AND AN ORIGINAL EFFORT -- AN ART DISTINCTIVE IN THE MATERIAL EMPLOYED, IN THE FORMS DEVELOPED, AND TO SOME EXTENT THE IDEAS REPRESENTED. IT IS AN AGE OF SHELL, A SORT OF SUPPLEMENT TO THE AGE OF STONE.

ART HAD ITS BEGINNING WHEN MAN FIRST GATHERED CLUBS FROM THE WOODS, STONES FROM THE RIVER BED, AND SHELLS FROM THE SEA-SHORE FOR WEAPONS AND UTENSILS. IN HIS HANDS THESE SIMPLE OBJECTS BECAME MODIFIED BY USE INTO NEW FORMS, OR WERE INTENTIONALLY ALTERED TO INCREASE THEIR CONVENIENCE. THIS WAS THE INFANCY, THE INCEPTION OF CULTURE, A PERIOD FROM WHICH A TEDIOUS BUT STEADY ADVANCE HAS BEEN MADE UNTIL THE REMARKABLE ACHIEVEMENTS OF THE PRESENT WERE REACHED.

THE STEPS WHICH LED UP TO THESE RESULTS ARE BY NO MEANS CLEAR TO US. WE FIND IT IMPOSSIBLE TO TRACE BACK THROUGH THE HISTORIC AGES INTO AND BEYOND THE PRE-HISTORIC SHADOWS, THE PATHWAY TO CULTURE FOLLOWED BY ANY ONE PEOPLE. BY COLLECTING THE VARIOUS RELICS OF ART IN SHELL, WE ARE ABLE TO ADD A FRAGMENT TO THE KNOWLEDGE OF ANCIENT RACES.



IT IS DIFFICULT TO DEMONSTRATE THE GREAT ANTIQUITY OF MANY OF THESE RELICS . MANY OF THOSE OBTAINED FROM THE SHELL HEAPS OF THE ATLANTIC COAST ARE DOUBT-LESS VERY ANCIENT , AND CARBON DATING HAS PLACED SOME SHELL RELICS RECENTLY REMOVED FROM INDIAN MOUNDS NEAR HOUSTON AT ABOUT 3400 BEFORE PRESENT . THOSE TAKEN FROM SPIRO MOUND , OKLAHOMA , WHICH INCLUDED THE ARTIFACTS WHICH MADE UP THE GREATER PART OF THE DISPLAY BY THE MUSEUM OF NATURAL SCIENCE , ARE BELIEVED TO HAVE ORIGINATED IN THE CULTURAL AGE , JUST PRIOR TO THE BEGINNING OF EUROPEAN INFLUENCE .

IT IS KNOWN THAT MAN IN HIS MOST PRIMITIVE CONDITION MUST HAVE RESORTED TO THE SEA-SHORE FOR THE FOOD WHICH IT AFFORDS . WEAPONS OR OTHER APPLIANCES WERE NOT NECESSARY IN THE CAPTURE OF MOLLUSKS ; A STONE TO BREAK THE SHELL , OR ONE OF THE MASSIVE VALVES OF THE SHELLS THEMSELVES , SUFFICED FOR ALL PURPOSES .

THE SHELLS OF MOLLUSKS PROBABLY CAME INTO USE AS UTENSILS AT A VERY EARLY DATE , AND WITH PRODUCTS OF THE VEGETABLE WORLD , AFFORDED NATURAL VESSELS FOR FOOD AND WATER . IN TIME , BY ACCIDENTAL SUGGESTION PERHAPS , IT WOULD BE FOUND THAT MODIFICATIONS WOULD ENHANCE THEIR USEFULNESS , AND THE BREAKING AWAY OF USELESS PARTS AND THE SHARPENING OF EDGES AND POINTS WOULD BE RESORT-ED TO . PERFORATIONS WHICH OCCUR NATURALLY IN SOME SPECIES OF SHELL , WOULD BE PRODUCED ARTIFICIALLY , AND THE SHELLS WOULD BE STRUNG ON VINES OR CORDS AND SUSPENDED ABOUT THE NECK FOR CONVENIENCE OF TRANSPORTATION . IN THIS WAY , PERHAPS , THE CUSTOM OF WEARING PENDANTS FOR PERSONAL ORNAMENT ORIGINATED .

FOLLOWING THIS WOULD BE THE TRANSPORTATION OF SUCH ARTICLES TO DISTANT PLACES BY WANDERING TRIBES , EXCHANGES WOULD TAKE PLACE WITH OTHER TRIBES , AND FINALLY A TRADE WOULD BE DEVELOPED , AND A FUTURE COMMERCE OF NATIONS BE INAUGURATED .

THE FARTHER THESE USEFUL ARTICLES WERE CARRIED FROM THE SOURCE OF SUPPLY THE GREATER THE VALUE THAT WOULD BE ATTACHED TO THEM , AND FAR INLAND THE SHELL OF THE SEA MIGHT EASILY BECOME AN OBJECT OF UNUSUAL CONSIDERATION . HAVING AN ORIGIN MORE OR LESS SHROUDED IN MYSTERY , IT WOULD IN TIME BECOME DOUBLY DEAR TO THE HEART OF THE SUPERSTITIOUS INDIAN , PERHAPS AN OBJECT OF ACTUAL VENERATION , OR AT LEAST ONE OF SUCH HIGH ESTEEM THAT IT WOULD BE TREASURED BY THE LIVING AND BURIED WITH THE DEAD .

THUS , THE MATERIAL , SO PLENTIFUL ON THE SEA-SHORE THAT IT WAS THOUGHT OF ONLY AS USEFUL FOR VESSELS AND IMPLEMENTS , BECAME A VALUED TREASURE IN THE INTERIOR ; ITS FUNCTIONS WERE GRADUALLY ENLARGED AND DIFFERENTIATED ; IT WAS WORKED INTO VARIED SHAPES , SUCH AS PENDANTS FOR THE EARS , BEADS FOR THE NECK , PINS FOR THE HAIR AND ELABORATE GORGETS FOR THE BREAST . IT SERVED AS FETISH AND CHARM , AND WAS FREQUENTLY USED IN THE CEREMONIAL JUGGLERY OF THE MYSTIC DANCE .

THE SLIGHTEST MODIFICATION OF THESE RELICS BY THE HAND OF MAN ATTRACTS OUR ATTENTION , AND FROM THAT INFANT STAGE OF THE ART UNTIL THE HIGHEST AND MOST ELABORATE FORMS ARE REACHED , THEY HAVE THE DEEPEST INTEREST TO THE STUDENT OF HUMAN PROGRESS .

SHELL SPECIES ESPECIALLY FAVORED BY THE AMERICAN INDIAN

### PECTENS

THE PECTENS ARE WIDELY DISTRIBUTED , AND BECAUSE OF THEIR BEAUTY OF FORM AND COLOR HAVE BEEN IN GREAT FAVOR WITH ALL PEOPLES . THEY WERE EMPLOYED EXTEN-

SIVELY BY THE ANCIENT INHABITANTS OF AMERICA AS ORNAMENTS AND RATTLES, AND MANY EXAMPLES EXHUMED FROM GRAVES, MOUNDS, AND REFUSE HEAPS APPEAR TO HAVE BEEN USED AS UTENSILS, CUPS FOR PAINT, AND VESSELS FOR FOOD AND DRINK. THEY WERE ESPECIALLY PLENTIFUL IN THE CEMETERIES OF THE ANCIENT CALIFORNIANS, AND SPECIMENS MAY BE FOUND IN GREAT MUSEUMS WHICH WERE USED AS PAINT CUPS, SOME STILL PARTIALLY FILLED WITH THE REMAINS OF INDURATED PAINT. SOME WERE RECEPTACLES OF ASPHALTUM, AND OTHERS, QUITE EMPTY WERE EMPLOYED PROBABLY FOR DOMESTIC PROPUSES. PECTEN CAURINUS AND P. HASTATUS WERE EMPLOYED BY THE MAKAH AND OTHER INDIANS FOR RATTLES. THE SPECIES MOST USED ON THE ATLANTIC COAST WERE P. IRRADIANS AND P. CONCENTRICUS.

### CLAMS

CLAMS FORMED A VERY IMPORTANT PART OF THE FOOD OF THE ANCIENT SEABOARD TRIBES, AND THE EMPTIED SHELLS HAVE BEEN UTILIZED IN A GREAT VARIETY OF WAYS. THE VALVES OF MANY SPECIES ARE LARGE AND DEEP, AND ARE AVAILABLE FOR CUPS AND DISHES AND AS SUCH ARE NOT SCORNEED EVEN BY THE MODERN HOUSE-WIFE, WHO PERIODICALLY MAY UTILIZE THESE SHELLS FOR SERVING SPECIAL SEA-FOODS. FOR THE INDIAN THEY SERVED AS KNIVES, SCRAPERS, AND HOES, AND WERE EXTENSIVELY USED IN THE MANUFACTURE OF WAMPUM. THE HARD-SHELL CLAM, VENUS MERCENARIA, WITH ITS PURPLE HUES ON A PORTION OF THE SHELL, WAS ESPECIALLY FAVORED FOR THIS USE. AS THESE SHELL BEADS BECAME A COMMON MEDIUM OF EXCHANGE DURING EARLY COLONIAL TRADING WITH THE INDIANS, THE DUTCH SETTLERS IN WHAT IS NOW THE NEW YORK AREA, BECAME PROFICIENT IN MANUFACTURING THESE BEADS BY LATHE AND MECHANICAL DRILLS, AND MANY FAMILIES REALIZED A TIDY PROFIT FROM SUCH INDUSTRY. THE EXTENSIVE BEDS OF V. MERCENARIA FOUND OFF LONG ISLAND SERVED AS THEIR SOURCE OF RAW MATERIAL.

THE SOUTHERN VARIETY OF V. MERCENARIA; V. CAMPECHIENSIS, ATTAINED SIZES WHICH MADE IT USEFUL AS DISHES. ON THE PACIFIC COAST, TIVELA STULTORUM, THE PISMO CLAM, WAS SIMILARLY USED. MACTRA AND SPISULA SPECIES WERE ALSO USED TO SOME EXTENT, AS WERE THE LARGE COCKLES OR CARDIUM SPECIES OF BOTH EAST AND THE WEST COASTS.

TO BE CONTINUED. . . . .

. . . . .CONTINUED FROM PAGE 93      0000000

EXHIBITS RANGED FROM SHELLS ON STAMPS, AQUARIA, FOSSILS, SHELLS AS FOODSTUFFS, SHELL BOOKS, TO LIVE TURTLES, WHO WERE UNDOUBTEDLY THE MOST PETTED AND ADORED ANIMALS IN TEXAS, ABLY CARED FOR BY ILA LOETSCHER AND HER HELPER, JESSE CHATTEEN. THE SHOW WOULD NOT HAVE SUCCEEDED WITHOUT THE GOOD OFFICES OF JOHN EDSTROM OF THE SHARPSTOWN CENTER, WHO AFTER OUR FIRST SHOW WAS CONVERTED INTO AN ARDENT SHELL COLLECTOR. THE COOPERATION OF MANY MERCHANTS IN THE CENTER, WHO EXHIBITED SOME OF THE VALUABLE EXHIBITS SUCH AS PAINTINGS, SHELL CRAFT, AND THE CONUS GLORIAMARIS IS ESPECIALLY VALUED BY THE SOCIETY. TO ALL THOSE WHO CONTRIBUTED IN ANY WAY TO THE SUCCESS THE HOUSTON CONCHOLGY SOCIETY EXTENDS ITS WARMEST THANKS.

### DUES

THE TREASURER REMINDS OUR MEMBERS AND SUBSCRIBERS THAT DUES ARE DUE. CHECKS CAN BE MAILED TO MRS. CLAIRIE VAN ERP, 11306 SURREY OAKS LANE, HOUSTON, TEXAS 77024. A FAMILY MEMBERSHIP IS \$5.00, INDIVIDUAL MEMBERSHIP \$4.00, JUNIOR MEMBERSHIP \$2.00, AND THE SUBSCRIBERS FEE, \$2.00.

# TEXAS CONCHOLOGIST

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AUGUST, 1970

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## NOTES & NEWS

### NEXT MEETING

"SHELL EXPEDITION IN THE VIRGINS ON THE YACHT D'VARI" WILL BE THE SUBJECT OF THE TALK TO BE GIVEN BY OUR MEMBER, MRS. W. B. GLASS (LEOLA), AT THE MEETING AUGUST 26 AT 8 P.M., IN THE MUSEUM OF NATURAL SCIENCE. LEOLA WILL ALSO DISPLAY SHELLS SHE COLLECTED ON THIS TRIP IN MAY.

MEMBERS ARE URGED TO INVITE FRIENDS TO ATTEND MEETINGS THIS YEAR. MANY OF YOU HAVE ENCOUNTERED ACQUAINTANCES WHO HAVE EVIDENCED INTEREST IN SHELLS THIS SUMMER. OUR PROGRAMS THIS YEAR WILL EMPHASIZE COLLECTING IN OTHER AREAS OF THE WORLD, AS WELL AS COLLECTING ON OUR OWN COAST.

### REPORT MAY MEETING

THE MONTHLY MEETING, ATTENDED BY ABOUT 25 MEMBERS AND 4 GUESTS, WAS CALLED TO ORDER AT 8:00 P.M. ON MAY 27TH BY DR. HELMER ODÉ, PRESIDENT.

MINUTES OF THE LAST MEETING WERE READ BY THE SECRETARY AND WERE ACCEPTED. THE TREASURER, MRS. C. VAN ERP, GAVE HER REPORT AND STATED A BALANCE AT HAND OF \$1076.75. SHE REMINDED ALL PRESENT THAT THE YEARLY MEMBERSHIP FEES ARE NOW DUE. HER REPORT WAS ACCEPTED.

NEXT, MRS. MARY SUTOW, OUR CHAIRMAN OF LAST MONTH'S SHELL FAIR CAME FORWARD AND READ A NUMBER OF LETTERS SHE RECEIVED FROM PERSONS THAT VISITED, EXHIBITED OR OTHERWISE PARTICIPATED IN THE SHOW. SHE EXPRESSED HER THANKS TO ALL HER CO-WORKERS WHO HELPED HER IN MAKING THE SHOW SUCH A GREAT SUCCESS, AND PRESENTED A CHECK OF \$301.63 TO THE TREASURER, DONATED TO THE SOCIETY BY THE SHELL CRAFT EXHIBITORS AT THE SHOW.

THE SECRETARY THEN READ THE MINUTES OF THE LAST BOARD OF DIRECTORS MEETING, WHICH WAS HELD LAST MAY 19TH, 1970 THESE MINUTES WERE ACCEPTED AS READ.

MRS. CONNIE BOONE INTRODUCED THE MAIN SPEAKER OF THE EVENING, MRS. ANNE SPEERS, WHO GAVE A DELIGHTFUL AND VERY INFORMATIVE TALK ON SHELLING AT THE TEXAS BEACHES SOUTH OF GALVESTON. HER PRESENTATION WAS ILLUSTRATED BY A NUMBER OF COLOR SLIDES TAKEN DURING PREVIOUS SHELLING TRIPS SHE MADE ON THE BEACHES SOUTH OF THE RIO GRANDE IN OLD MEXICO.

### DUES

THE TREASURER REMINDS MEMBERS AND SUBSCRIBERS TO PAY THEIR DUES AS SOON AS POSSIBLE. NO COPIES OF THE TEXAS CONCHOLOGIST WILL BE MAILED OUT AFTER OCTOBER 1ST TO THOSE WHO ARE NOT PAID UP.

CONTINUED ON PAGE 8

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

FAMILY RISSOIDAE. OF THIS LARGE WORLD WIDE FAMILY ONLY A FEW SPECIES OF THE  
GENUS RISSOINA AND A SINGLE OF THE GENUS ALVANIA CAN BE COLLECTED ALONG  
THE TEXAS COAST.

RISSOINA BROWNIANA ORBIGNY 1842. DEAD SHELLS OF THIS SMOOTH SPECIES ARE NOT  
UNCOMMON AT PORT ARANSAS AND FURTHER SOUTH. VERY RARE AT GALVESTON.  
ALSO KNOWN AS R. LAEVIGATA C. B. ADAMS 1850. LIVE MATERIAL IS UNKNOWN  
FROM TEXAS.

FIGURED IN: 3,4,6,11

PREVIOUS REFERENCES: 11,18,19

LOCALITIES: GALVESTON, PALACIOS, INDIANOLA, PORT ARANSAS, SOUTH PADRE  
ISLAND.

RISSOINA DECUSSATA MONTAGU 1803. THIS RELATIVELY LARGE SPECIES HAS BEEN  
FOUND ONLY A FEW TIMES ON THE BEACH. DEAD SHELLS ARE UNCOMMON IN DRED-  
GED MATERIAL IN THE GALVESTON-FREEPORT AREA. SO FAR, NO LIVE MATERIAL  
HAS BEEN COLLECTED IN TEXAS.

FIGURED IN: 3,6,8

PREVIOUS REFERENCES: NONE

LOCALITIES: HIGH ISLAND, PORT ISABEL.

RISSOINA CATESBYANA ORBIGNY 1842. THIS ELEGANT SHELL IS PROBABLY THE MOST  
COMMON RISSOID ON OUR COAST. IT IS RARE AT GALVESTON (ODÉ) BUT BECOMES  
INCREASINGLY MORE COMMON TOWARDS THE WEST. DEAD SHELLS ARE COMMON AT  
PORT ARANSAS AND FURTHER SOUTH. SO FAR ONLY A FEW LIVE SPECIMENS HAVE  
BEEN DREDGED FROM THE INLET AREA AT PORT ISABEL (SPEERS).

FIGURED IN: TEXAS CONCHOLOGIST, VOL. 6, P. 4.

PREVIOUS REFERENCES: SEE TEX. CONCHOLOGIST, VOL. 6, P. 5.

LOCALITIES: GALVESTON, PALACIOS, PORT ARANSAS, SOUTH PADRE ISLAND

RISSOINA CANCELLATA PHILLIPPI 1847. OFFSHORE THIS SPECIES IS COMMON BUT  
ONLY A FEW BEACH SHELLS OF THE SPECIES ARE KNOWN. ALL HAVE BEEN COL-  
LECTED AT SOUTH PADRE ISLAND, WHERE ONLY DEAD SHELLS WERE TAKEN.

FIGURED IN: REF. 3

PREVIOUS REFERENCES: 18

LOCALITIES: SOUTH PADRE ISLAND

RISSOINA MULTICOSTATA C. B. ADAMS 1850. THIS SPECIES IS QUITE COMMON OFFSHORE IN THE GALVESTON-FREEPORT AREA, WHERE LIVE MATERIAL HAS BEEN OBTAINED. SURPRISINGLY ENOUGH IT ALMOST NEVER REACHES THE BEACH. ONLY A SINGLE DEAD SPECIMEN IS KNOWN FROM BEACHDRIFT FROM MCFADDIN BEACH, SABINE. (COLL. ODÉ).

FIGURED IN: REF. 3.

PREVIOUS REFERENCES: NONE.

LOCALITIES: MCFADDIN BEACH, SABINE.

ALVANIA AUBERIANA D'ORBIGNY 1842. RECENTLY A SINGLE DEAD SHELL OF THIS SMALL SPECIES WAS TAKEN FROM BEACHDRIFT AT THE COAST GUARD STATION AT PORT ISABEL (ODÉ). IT IS WIDESPREAD OFFSHORE BUT APPARENTLY LIVES TOO DEEP TO REACH THE BEACH. IT IS POSSIBLE THAT MANY OF THE RARER SPECIES COLLECTED AT THIS LOCATION HAVE BEEN INTRODUCED BY SHRIMPERS WHO CLEAN THEIR DECKS WHEN COMING INTO PORT.

FIGURED IN: 3, 8

PREVIOUS REFERENCES: NONE

LOCALITIES: SOUTH PADRE ISLAND.

REMARKS: SEVERAL OTHER SPECIES HAVE BEEN MENTIONED IN THE LITERATURE PERTAINING TO THE NORTHWEST GULF OF MEXICO. IT IS NOW KNOWN THAT SEVERAL OTHER SPECIES OF RISSOINA OCCUR OFFSHORE. WE MAY MENTION HERE ONLY RISSOINA ELEGANTISSIMA, WHICH OCCURS ALIVE ON THE OFFSHORE REEFS.

EPILOGUE TO MICROMOLLUSKS FROM SAN LUIS PASS.

BY H. ODÉ

IN FEBRUARY 1970, I COLLECTED AGAIN A SMALL SAMPLE OF BEACHDRIFT AT SAN LUIS PASS, BUT THIS TIME AT A LOCATION ON THE WEST SIDE OF THE PASS, CLOSER TO-CHRISTMAS BAY. ITS COMPOSITION WAS DIFFERENT FROM THE SAMPLES DISCUSSED PREVIOUSLY IN SEVERAL RESPECTS. FIRST OF ALL THE NUMBER OF GASTROPODS WAS DRASTICALLY REDUCED AND ONLY CYCLOSTREMELLA HUMILIS AND VITRINELLA FLORIDANA WERE COMMON. ANACHIS WAS LARGELY REPLACED BY MITRELLA, EPIDONIIDS WERE SCARCE AND ODOSTOMIA'S VIRTUALLY ABSENT, ALTHOUGH TWO LIVE ODOSTOMIA GIBBOSA WERE OBTAINED. LIVE COLLECTED SPECIMENS OF THIS SPECIES SECRETE A PECULIAR YELLOW DYE, WHICH DISCOLORS THE MOUTHS OF THESE SHELLS, A FACT FIRST BROUGHT TO MY ATTENTION BY MRS. C. BOONE, WHO DISCOVERED IT. ON THE OTHER HAND TURBONILLAS WERE FAR MORE COMMON THAN IN THE PREVIOUS SAMPLES. MOST STRIKING HOWEVER WAS THE PRESENCE OF A NUMBER OF BIVALVES, WHICH WERE UNCOMMON IN THE SAMPLES DESCRIBED PREVIOUSLY.

SHELLS OF ALIGENA TEXASIANA WERE QUITE COMMON BOTH AS JUVENILES AND FULLY GROWN SHELLS. THE FORMER ARE MORE ELONGATE IN SHAPE THAN ONE WOULD EXPECT FROM THE MATURE SHELL. MYSELLA PLANULATA ALSO OCCURRED IN LARGE NUMBERS, NOT ONLY IN SINGLE DETACHED VALVES BUT ALSO IN COMPLETE SPECIMENS. AT LEAST TWO OTHER SPECIES OF MYSELLA WERE PRESENT IN THE DRIFT AND A FEW VALVES OF THE SPECIES LISTED EARLIER AS "UNKNOWN CORBULID". FRAGMENTS OF BRACHIDONTES EXUSTUS PEPPERED THE SAMPLE AND WORN VALVES OF CORBULA BARATTIANA AND CORBULA SWIFTIANA APPEARED IN FAIR NUMBERS. MANY WORN VALVES OF LUCINA MULTILINEATA AND L. AMIANTUS WERE ALSO NOTED.

STILL ANOTHER VERY SMALL PYRAMIDELLID SPECIES OF A GENUS UNKNOWN TO ME WAS FOUND AND A BEAUTIFUL SMALL MACROMPHALINA, POSSIBLY A NEW SPECIES, ADDED ADDITIONAL INTEREST TO THE SAMPLE. LASTLY TWO FRAGMENTS OF CARDIOMYA SP. NEVER BEFORE FOUND AT SAN LUIS PASS SHOWED THAT MUCH COLLECTING MUST BE

CONTINUED ON PAGE 7

VITRINELLA FLORIDANA PILSBRY AND MCGINTY 1946

THIS WIDESPREAD SPECIES OCCURS IN ALL OF THE TEXAS COASTAL BAYS AND IS EASILY FOUND IN BEACHDRIFT COLLECTED CLOSE TO THE INLET AREAS. LIVE MATERIAL IS KNOWN FROM THE PORT ARANSAS AREA WHERE IT IS SOMEWHAT MORE COMMON THAN AT GALVESTON. VERY FEW SHELLS HAVE BEEN DREDGED OFFSHORE SO THAT IT MAY BE SAFELY CONCLUDED THAT THIS SPECIES IS A COASTAL BAY DWELLER. AS SOURCES I CITE:

1946 VITRINELLA FLORIDANA. PILSBRY AND MCGINTY. NAUTILUS, VOL. 60, PP. 12-18. PL. 2, FIGS. 4, 4A.

PREVIOUS REFERENCES FOR TEXAS ARE:

- 1964 MOORE, D. R. . THE FAMILY VITRINELLIDAE IN SOUTH FLORIDA AND THE GULF OF MEXICO; PH.D. THESIS, UNIVERSITY OF MIAMI, FLA. , 23510  
1965 MOORE, D. R. , NAUTILUS, VOL. 78 (3), PP. 73-79.  
1967 HARRY, H. W. . MARINE MOLLUCA OF GALVESTON. TENTATIVE AND PRELIMINARY LAST MAR. CLUB, TEXAS A AND M UNIVERSITY, GALVESTON, TEXAS, (2ND EDITION, 1968).

EARLIER REFERENCES TO VITRINELLA SP. , WHICH COULD BE THIS SPECIES , ARE THE FOLLOWING:

- 1951 LADD, H. S. . PUBL. INST. MAR. SCI. , UNIVERSITY OF TEXAS , VOL. 2, (1), PP. 125-163.  
1959 PARKER, R. H. , AM. ASS. PETR. GEOL. , VOL. 43, PP. 2100-2166.



VITRINELLA FLORIDANA FROM SAN LUIS PASS, GALVESTON ISLAND  
ABOUT 2 MM.

THERE ARE ANY NUMBER OF ECOLOGICAL SITUATIONS WITH WHICH DIRECT PERSONAL CONTACT WOULD BE HIGHLY UNLIKELY. ANY INFORMATION RELATING TO THE MOLLUSCAN FAUNA ASSOCIATED WITH SUCH ECOLOGIES MUST COME INDIRECTLY, FOR EXAMPLE, FROM PUBLISHED SCIENTIFIC REPORTS. ONE OF THESE FASCINATING ENVIRONMENTS IS THE ANTARCTIC CONTINENT. WHAT SORT OF MOLLUSKS LIVE IN THE OCEANS THERE?

NICOL, IN THE ARTICLE "ANTARCTIC PELECYPOD FAUNAL PECULIARITIES" PUBLISHED IN SCIENCE 168:1248-1249, JUNE 5, 1970, MAKES A FEW OBSERVATIONS. HE STATES THAT "...61 PERCENT OF THE ANTARCTIC PELECYPOD SPECIES ARE NO MORE THAN 10.0 MM IN HEIGHT OR LENGTH". THIS IS 1 CM OR JUST A BIT OVER THREE-EIGHTH OF AN INCH.

THE SPECIES FOUND IN ANTARCTIC WATERS APPARENTLY DIFFER SIGNIFICANTLY FROM THOSE FOUND IN THE ARCTIC. NICOL STATES THAT "THERE ARE NO SPECIES OF DEPOSIT-FEEDING TELLINACEANS IN THE ANTARCTIC" AND THAT THE "ANTARCTIC PELECYPOD FAUNA IS DOMINATED BY THREE FAMILIES - THE LIMOPSIDAE, PHILOBRYIDAE, AND CY-AMIIDAE. NONE OF THESE FAMILIES IS FOUND LIVING IN ARCTIC WATERS".

\* \* \* \* \*

ANOTHER LITTLE KNOWN ENVIRONMENT DIFFICULT OF DIRECT ACCESS IS THE DEPTH OF THE SEA.

IN THE MARCH 28, 1969 ISSUE OF SCIENCE (163:1419-1424), THERE APPEARS A REPORT BY HOWARD L. SANDERS AND ROBERT R. HUSSLER ENTITLED "ECOLOGY OF THE DEEP-SEA BENTHOS". THE FAUNAL COMPOSITION OF THE SAMPLINGS AT VARIOUS DEPTHS IS DESCRIBED. OF INTEREST IS THE TERMINOLOGY RELATING TO "FAUNAL VERTICAL ZONATION". THE ZONE FROM 200 TO 3000 METERS IN DEPTH WHICH INCLUDES THE CONTINENTAL SHELF IS TERMED THE "BATHYAL ZONE". THE "ABYSSAL ZONE" RANGE FROM 2000 OR 3000 METERS TO 6000 METERS. THE "HADAL ZONE" REFERS TO DEPTHS GREATER THAN 6000 METERS. ACCORDING TO THE DESK DICTIONARY, THE TERM "BENTHOS" IS APPLIED TO THE "AGGREGATE OF ORGANISMS LIVING ON OR AT THE BOTTOM OF A BODY OF WATER".

THE SAME AUTHORS HAD REPORTED PREVIOUSLY SOME OF THE DATA FROM THE QUANTITATIVE ANALYSIS OF THE DEEP SEA BENTHIC SAMPLES (HESSLER, R. R. AND SANDERS, H. L.: FAUNAL DIVERSITY IN THE DEE-SEA. DEEP SEA RESEARCH 4:65-78, 1967. THEY FOUND A SURPRISING RICH FAUNAL DIVERSITY BASED ON NUMBERS OF SPECIES COUNTED. THE DREDGINGS WERE CONDUCTED ON THE OCEAN FLOOR BETWEEN NEW ENGLAND AND BERMUDA AND ALSO THE BOTTOM OF THE TROPICAL ATLANTIC. ONE SAMPLE, FOR EXAMPLE, FROM 4680 METERS (SARGASSO SEA) CONTAINED 35 SPECIES OF MOLLUSKS. THESE WERE DIVIDED AS FOLLOWS: APLACOPHORA 4 SPECIES, PELECYPODA 21 SPECIES, GASTROPODA 9 SPECIES, SCAPHOPODA 1 SPECIES. FOR COMPARISON, MATERIAL DREDGED FROM 1330-1470 METERS (ON THE CONTINENTAL SHELF) CONTAINED 84 MOLLUSCAN SPECIES. INCLUDED AMONG THEM WERE APLACOPHORA 14 SPECIES, PELECYPODA 28 SPECIES, GASTROPODA 35 SPECIES, AND, SCAPHOPODA 7 SPECIES.

\* \* \* \* \*

UNIUS

SHELLS OF THE GREAT FAMILY OF THE FRESH-WATER UNIUS HAVE ALWAYS HELD AN IMPORTANT PLACE IN THE DOMESTIC AND MECHANICAL ARTS OF THE SAVAGES OF NORTH AMERICA. THEIR CHALKY REMAINS WERE AMONG THE MOST PLENTIFUL RELICS OF THE MOUNDS AND OTHER ANCIENT BURIAL PLACES. IN SOME CASES, THEY CAME FROM KITCHEN MIDDENS, AND THE MORE RECENT GRAVES WITH ALL THE PEARLY DELICACY OF THE FRESHLY EMPTIED SHELL. NOT LARGE ENOUGH FOR FOOD VESSELS, THEY MADE MOST SATISFACTORY SPOONS AND CUPS, AND WERE FREQUENTLY FOUND TO RETAIN PIGMENTS FROM THE LAST TOILET OF THE PRIMEVAL WARRIOR AND DESTINED FOR USE IN THE SPIRIT LAND. IT IS PROBABLE, HOWEVER, THAT THEY WERE MUCH MORE FREQUENTLY EMPLOYED AS KNIVES AND SCRAPERS, AND AS SUCH, PLAYED THEIR PART IN THE BARBARIC WORK OF SCALP TAKING AND TORTURE. THE LITERATURE CITES OTHER USES SUCH AS REMOVAL OF HAIR FROM HIDES, SCALING FISH, CHOPPING OR CUTTING MEAT AND VEGETABLES FOR COOKING AND LARGE VALVES WERE MADE INTO HOES FOR THE CULTIVATION OF THE INDIAN CORN.

AS THEY OCCURRED IN A PRETTY GENERAL DISTRIBUTION OVER THE COUNTRY, THEIR PRESENCE IN MOUNDS PROBABLY HAS LITTLE IMPORTANCE IN THE STUDY OF ARTIFICIAL DISTRIBUTION. VERY LITTLE TROUBLE HAS BEEN TAKEN TO IDENTIFY THE NUMEROUS SPECIES COLLECTED. HOWEVER, A BY-PRODUCT OF THESE SHELLS, THE FRESH WATER PEARLS, WERE MUCH TREASURED FOR BEADS. ONE REPORT BY EARLY SPANISH EXPLORERS TELLS OF ROBBING THE GRAVES OF MANY A DEAD INDIAN IN SEARCH OF STRANDS OF PEARLS. HOWEVER, THE METHODS USED TO DRILL THESE PEARLS, USING HEATED COPPER SPINDLES, WAS NECESSARILY CRUDE AND SPOILED MOST FOR THE EUROPEAN MARKET.

HALIOTIS

THE ABALONES AFFORD ONE OF THE BEST EXAMPLES OF THE VARIED USES TO WHICH THE NATURAL SHELL HAS BEEN APPLIED BY THE INDIANS. SEVERAL SPECIES OF THIS BEAUTIFUL SHELL WERE USED, AND WERE TAKEN FROM GRAVES IN GREAT NUMBERS. UTILIZED AS DISHES, CUPS AND SPOONS, THE SHELLS WERE FOUND WITH PAINT PIGMENTS, FOODS, AND THE MUCH ESTEEMED CHIA SEED IN MANY GRAVES. THEY WERE ALSO USED TO CONTAIN THE ASPHALTUM, OCCURRING NATURALLY IN PITS IN THE CALIFORNIA REGIONS, AND IN TURN, THE ASPHALTUM WAS USED TO STOP THE NATURAL HOLES IN THE SHELLS, AND TO BUILD UP THE RIM TO CREATE DEEPER VESSELS. THE PEARLY NACRE MADE THEM ESPECIALLY DESIRABLE AS RAW MATERIAL FOR ORNAMENTS. IN MANY FORMS THESE SHELLS WERE BURIED WITH THE DEAD, TO SERVE THE PURPOSES FOR WHICH THEY WERE USED IN LIFE.

DENTALIUM

DENTALIUM PRETIOSUM OF THE WEST COAST, SERVED THAT AREA IN MUCH THE SAME WAY AS THE WAMPUM OF THE MOUND BUILDING INDIANS OF THE EAST. VALUED BECAUSE OF THE NATURAL PERFORATION WHICH MADE STRINGING A SIMPLE MATTER, IT WAS USED BOTH FOR MONEY AND FOR ORNAMENTATION. IN BOTH THE EASTERN AND WESTERN TRIBES THE INDIVIDUAL OWNING NUMEROUS STRANDS OF SHELL BEADS WAS RESPECTED. PAST INDISCRETIONS COULD BE 'FORGIVEN' WITH THE EXCHANGE OF BEADS, AND SET "PRICES" OF A GIVEN NUMBER OF STRINGS COULD PAY FOR A WIFE, A HORSE, OR, IF NECESSARY, A LIFE.

BUSYCONS

A GREAT VARIETY OF THE LARGER UNIVALVE SEA-SHELLS WERE USED IN THE UNALTERED STATE, THE BUSYCONS PROBABLY TAKING THE MOST IMPORTANT PLACE. SPECIES OF



STROMBUS, CASSIS, AND FASCIOLARIA IN ABOUT THAT ORDER, WERE ALSO UTILIZED.

BUSYCON PERVERSUM HAS BEEN MORE EXTENSIVELY USED THAN ANY OTHER SHELL, AND ITS DISTRIBUTION AMONG THE TRIBES IN ONE FORM OR ANOTHER, WAS VERY WIDE. IT COULD BE OBTAINED ALONG MOST OF THE ATLANTIC AND GULF SEA BOARD, AND WAS ARTIFICIALLY DISTRIBUTED OVER THE GREATER PART OF THE ATLANTIC SLOPE. ITS USES WERE TOO NUMEROUS TO LIST HERE, BUT IT FURNISHED RAW MATERIAL FOR BEADS, GORGETS, BRACELETS, AND NUMEROUS OTHER MODES OF ORNAMENTATION. THE LARGER SHELLS WERE VALUED AS BOWLS, WEAPONS AND IMPLEMENTS FOR THE SOWING OF CORN, AND SERVED IN SEVERAL FORMS FOR CEREMONIAL PURPOSES.

FROM THE EMPLOYMENT OF SHELLS IN THEIR COMPLETE STATE TO THEIR MODIFICATION FOR CONVENIENCE IS BUT A SLIGHT STEP, AND WHEN ONCE SUGGESTED IS EASILY ACCOMPLISHED. HOLES ARE BORED, HANDLES ARE CARVED OR ADDED, MARGINS GROUND DOWN, USELESS PARTS ARE BROKEN AWAY, AND SURFACES POLISHED. THE COLUMELLAE OF THE LARGE UNIVALVES WERE REMOVED AND WERE USED FOR A VARIETY OF PURPOSES. THIS WAS ESPECIALLY TRUE OF BUSYCON. THE MECHANICAL DEVICES USED TO WORK SHELLS WERE VERY SIMPLE, SUCH AS FLINT IMPLEMENTS FOR CUTTING, AND STONES FOR BREAKING AND GRINDING. HAND DRILLS WERE AT FIRST USED FOR PERFORATING, BUT LATER, MECHANICALLY REVOLVING DRILLS WERE DEvised. AS LATE AS THE EARLY 1900'S, WAMPUM WAS STILL VALUED IN TRADING WITH THE WESTERN INDIANS. A WRITER IN THE YEAR 1880 TELLS OF ATTEMPTING TO OBTAIN A LONG NECKLACE FROM A NAVAHO, ONLY TO FIND THAT HIS FINEST MULE COULD NOT EQUAL THE STRAND IN VALUE.

BECAUSE OF THE RAPIDITY WITH WHICH THEY DECAY, WE CAN KNOW LITTLE OF SURFACE DEPOSITS OF SHELLS BY PREHISTORIC OR EVEN BY COMPARATIVELY RECENT PEOPLES. IT IS PRIMARILY THROUGH THEIR CUSTOMS OF BURYING VALUED ARTICLES WITH THEIR DEAD THAT THESE RELICS ARE PRESERVED TO US. WHEN WE THINK OF THE QUANTITY OF SUCH OBJECTS DESTROYED BY TIME, EXPOSURE, AND USE, WE MARVEL AT THE VAST NUMBER THAT MUST HAVE BEEN, WITHIN A LIMITED NUMBER OF YEARS, CARRIED INLAND. IN THE MORE RECENT MOUNDS, THERE MAY BE FOUND SPECIMENS OBTAINED BY THE INDIANS THROUGH THE AGENCY OF WHITE TRADERS, BUT THE VAST MAJORITY WERE DERIVED DOUBTLESS FROM PURELY ABORIGINAL SOURCES. ONE WRITER STATES THAT WHEN THE TRADERS 'EXHIBITED A LARGE AND FINE SHELL AND HELD IT TO THE EARS OF THE INDIANS ON THE INTERIOR, "THE NATIVES WERE ASTONISHED AT HEARING THE ROAR OF THE GREAT WATERS AND WOULD PAY FOR SUCH A SHELL WITH FURS VALUED TO \$30 OR \$40 OR MORE". TENNESSEE MOUNDS WERE ESPECIALLY RICH IN SHELL ARTIFACTS, BUT ALL THE MIDWESTERN STATES YIELDED EXAMPLES OF SHELLS AS TRADING MATERIALS PRIZED BY THE EARLY INHABITANTS, WHETHER OBTAINED THROUGH THE EFFORTS OF THE WHITE MAN, OR AT AN EARLIER TIME FROM WANDERING NATIVES OF ANOTHER TRIBE. THEY WERE POSSESSIONS OF USE AND BEAUTY, AND FORTUNATELY FOR OUR KNOWLEDGE TODAY, WERE OFTEN BURIED WITH THEIR OWNER, THAT HE MIGHT HAVE FURTHER USE AND PLEASURE FROM THEM IN THE HAPPY HUNTING GROUNDS WITH HIS ANCESTORS.

oooOooo

CONTINUED FROM PAGE 3

DONE BEFORE THE FAUNA OF GALVESTON BAY WILL BE UNDERSTOOD. IT IS POSSIBLE THAT THE PRESENCE OF THE MANY ADDITIONAL SPECIES, WHICH APPEARED IN THIS SAMPLE IS CAUSED BY THE CLOSER PROXIMITY OF THE COLLECTION LOCALITY TO CHRISTMAS BAY WHICH IS PROBABLY THE MOST SALINE AND AS YET LEAST POLLUTED PART OF THE GALVESTON BAY SYSTEM.

oooOooo

TWO NEW SHELL SHOWS WILL BE COMPETITIVE EVENTS THIS FALL IN THIS AREA AND OPEN TO HOUSTON CONCHOLGY SOCIETY MEMBERS. THE SAN ANTONIO SHELL CLUB WILL HAVE THE FIRST SAN ANTONIO SHELL EXPOSITION AT THE WONDERLAND SHOPPING CITY IN SAN ANTONIO ON OCTOBER 1 THROUGH 4, 1970. DR. AND MRS. R. THACHER GARY, BOX 324, RT. 1, SAN MARCOS, TEXAS 78666, ARE CHAIRMEN AND MAY BE CONTACTED FOR RULES AND ENTRANCE BLANKS.

THE SAN ANTONIO SHOW WILL BE JUDGED BY DR. T. E. PULLEY, MRS. MILDRED TATE, AND MRS. BETTY ALLEN. IT WILL BE DIVIDED INTO SIX MAIN DIVISIONS AS FOLLOWS: TEXAS GULF COAST MOLLUSCA, TEXAS LAND AND FRESH WATER MOLLUSCA, SPECIAL GROUPS FOR NOVICE AND STUDENTS, ADVANCED EXHIBITORS, HALL OF FAME, GENERAL CATEGORY OF MOLLUSCA, AND DISPLAYS BY INVITATION. NEW AWARDS INCLUDE THE BEST TEXAS MARINE SHELL EXHIBIT AWARD TO BE PRESENTED BY MRS. MYRA TAYLOR AND THE MURRAY AWARD FOR THE OUTSTANDING TEXAS FRESH WATER EXHIBIT.

THE SEA AND SHORE SHELL SHOW, TO BE PART OF THE BRAZORIA COUNTY FAIR BUT TO BE A FULL-FLEDGED SHELL SHOW OPEN TO OUT-OF-THE-COUNTY SHELLERS THIS YEAR, WILL BE HELD OCTOBER 3 THROUGH 11, 1970, AT THE BRAZORIA COUNTY FAIRGROUNDS IN ANGLETON. MRS. MILDRED TATE IS SUPERINTENDENT, WITH MRS. R. L. MCCAIN AND MRS. BRYAN PERRY ON THE COMMITTEE. CONTACT MRS. TATE, 211 HUISACHE, LAKE JACKSON, TEXAS, FOR ENTRY BLANKS AND INFORMATION.

THERE WILL BE SIX MAIN DIVISIONS, INCLUDING ENTRIES FOR MARINE SHELLS, MARINE LIFE, LAND AND FRESH WATER SHELLS, SHELL ASSOCIATION WHICH INCLUDES SHELL CRAFT, EDUCATIONAL AND BEACHCOMBERS. JUDGING WILL BE COMPLETED ON MONDAY, OCTOBER 5, AND EXHIBITS MUST REMAIN IN PLACE FOR THE FULL WEEK OF THE COUNTY FAIR. DR. W. W. SUTOW AND PAUL MCGEE ARE JUDGES.

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CONTINUED FROM PAGE 1

#### TEXAS LAND MOLLUSKS

IN THE NEXT ISSUE WE WILL START PUBLISHING A STUDY OF PAUL MCGEE ENTITLED: DISTRIBUTION AND ECOLOGY OF THE TERRESTRIAL MOLLUSKS OF THE TEXAS COASTAL COUNTIES. THIS STUDY WAS SUBMITTED AS A MASTERS THESIS AT THE UNIVERSITY OF HOUSTON IN 1965.

#### LIBRARY NOTES

BY W. W. SUTOW, M.D.

THE FINAL SECTION (No. 48) OF JOHNSONIA, VOLUME IV, HAS BEEN RECEIVED. THIS SHORT MONOGRAPH PROVIDES SOME PERTINENT NEW DATA IN THE VOLUTIDAE AND CONIDAE: VOLUME IV CONSISTED OF NUMBERS 40-48 AND WAS PUBLISHED OVER A 10-YEAR PERIOD, 1960-1970.

ANOTHER NEW ADDITION TO THE LIBRARY IS THE LONG-AWAITED BOOK ENTITLED THE LIVING COWRIES BY C. M. BURGESS. THIS WAS PUBLISHED BY A. S. BARNES AND COMPANY AND CARLTON BEAL, NEW YORK AND LONDON. PUBLICATION DATE IS 1970 AND THE BOOK CONTAINS 389 PAGES.

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no. 2  
Texas

# CONCHOLOGIST

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LIBRARIES

## NOTES & NEWS

### NEXT MEETING

"SHELLING IN THE EXUMAS" WILL BE THE GENERAL TOPIC OF OUR PROGRAM ON SEPTEMBER 23 AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE. SEVERAL OF OUR MEMBERS AND THEIR FRIENDS WILL SHARE THEIR EXPERIENCES OF CRUISING AND SHELLING IN THE CHAIN OF ISLANDS IN THE BAHAMAS. THEY WILL DISPLAY THEIR SHELLS AND SHOW SLIDES. HUGH AND RUTH JUNKIN ARE ORGANIZING THE PROGRAM. PROMISES TO BE THE KIND OF EVENING THAT WILL MAKE THE HOMEBOUND SHELLERS MOST ENVIOUS!

### REPORT AUGUST MEETING

THE FIRST MONTHLY MEETING AFTER THE LONG SUMMER VACATION WAS HELD AT THE HOUSTON MUSEUM OF NATURAL SCIENCES ON AUGUST 26TH 1970. THE MEETING WAS ATTENDED BY ABOUT 40 MEMBERS AND 15 GUESTS. IT WAS CALLED TO ORDER AT 8:00 P.M. BY HELMER ODÉ, PRESIDENT.

MINUTES OF THE LAST MEETING WERE READ BY THE SECRETARY AND ACCEPTED AS READ. THE TREASURER, MRS. CLARICE VAN ERP, GAVE HER REPORT AND STATED A BALANCE AT HAND OF \$1416.12. SHE REMINDED ALL CONCERNED THAT THE YEARLY MEMBERSHIP FEES ARE NOW OVERDUE. HER REPORT WAS ACCEPTED.

MRS. CONNIE BOONE REPORTED ON TWO SHELL SHOWS TO BE HELD IN THE AREA. THE BRAZORIA COUNTY FAIR WILL HAVE A SHOW AT ANGLETON, TEXAS OCTOBER 5TH THROUGH 11TH, WITH MRS. MILDRED TATE AS ITS SUPERINTENDENT. THE SAN ANTONIO SHELL CLUB WILL STAGE ITS SHOW, ITS FIRST ONE, AT THE WONDERLAND SHOPPING CITY OCTOBER 1ST THROUGH 4TH. BOTH THESE SHOWS ARE TO BE COMPETITIVE ONES.

DR. SUTOW INFORMED THE MEMBERS ABOUT RECENT ACQUISITIONS FOR THE LIBRARY. HE SHOWED THE BOOK ON LIVING COWRIES AND STATED THAT THE SOCIETY NOW HAS A SUBSCRIPTION TO THE "HAWAIIAN SHELL NEWS".

COONIE BOONE INTRODUCED THE SPEAKER FOR THE EVENING, MRS. LEOLA GLASS, WHO GAVE A DELIGHTFUL AND INFORMATIVE TALK ON HER AND HER HUSBAND'S SHELLING TRIP TO THE VIRGIN ISLANDS THIS LAST SUMMER. SHE SHOWED A LARGE NUMBER OF BEAUTIFUL SHELLS COLLECTED DURING THAT TRIP, AND SHE PRESENTED US ALL WITH VERY NICE SURPLUS SHELLS.

### UNDERWATER FILM FESTIVAL EXPECTS REPEAT SELL OUT

THE FESTIVAL, SPONSORED BY THE HOUSTON UNDERWATER CLUB, WILL BE HELD AT THE JONES HALL FOR THE PERFORMING ARTS, 615 LOUISIANA, AT 2:00 AND 8:00 P.M., ON SATURDAY, SEPTEMBER 26, 1970.

CONTINUED ON PAGE 19

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

FAMILY SPORTELLIDAE. A FAMILY OF MOSTLY SMALL INCONSPICUOUS BIVALVES WHICH PROBABLY FOR THE MOST PART ARE HABITANTS OF SPONGES OR OTHER PROTECTIVE ORGANISMS. FROM THE TEXAS BEACHES WE HAVE IDENTIFIED IN THIS FAMILY ONLY A SINGLE SPECIES BELONGING TO THE GENUS ENSITELLOPS (MONOGRAPH 8, ACAD. NAT. SC., PHILA. 1953, P. 94). BUT OFFSHORE MORE SPECIES OCCUR.

ENSITELLOPS C.F. CONSTRICTA CONRAD, 1841. THIS SMALL ELONGATE BIVALVE IS UNCOMMON IN BEACHDRIFT AT PORT ARANSAS AND SOUTH PADRE ISLAND (COLL. SPEERS, ODÉ) AND IS QUITE RARE IN DRIFT AROUND SAN LUIS PASS, GALVESTON ISLAND, WHERE BUT A FEW LOOSE VALVES HAVE BEEN COLLECTED FROM DRIFT (COLL. ODÉ). FIGURED IN: TRANS. WAGNER FREE INST. SC. 1898, PL. 25, FIG. 4, 4A.  
PREVIOUS REFERENCES: NONE  
LOCALITIES: SAN LUIS PASS, PORT ARANSAS, SOUTH PADRE ISLAND.

FAMILY TURRIDAE. THIS IS PROBABLY THE LARGEST FAMILY OF MARINE GASTROPODS LIVING TODAY. WE HAVE NOT SPLIT IT INTO TWO DIFFERENT FAMILIES, TURRIDAE AND MANGELIIDAE, WHICH APPEAR TO BE SEPARABLE ON ANATOMICAL GROUNDS, BECAUSE FOR SEVERAL SPECIES LISTED BELOW INSUFFICIENT DATA ARE AVAILABLE TO US. THE MAJORITY OF TEXAS BEACH SPECIES PROBABLY BELONG TO THE MAN-GELIIDAE. ONLY A FEW OF THE LISTED SPECIES BELONG TO THE IMMEDIATE COASTAL FAUNA. PYRGOCYTHARA PLICOSA APPEARS TO BE THE ONLY TEXAS BAY SPECIES; KURTZIELLA CERINELLA, THE MOST OFTEN COLLECTED ONE, IS RESTRICTED TO THE TIDAL MUDFLATS AND THE SURFZONE AND RUBELLATOMA RUBELLA IS RESTRICTED TO THE SURFZONE AND SHALLOW OFFSHORE WATERS. THE 10 OR SO OTHER SPECIES KNOWN TO US FROM THE BEACH ARE, WITH ONE EXCEPTION, COMMON IN DREDGED MATERIAL, BUT ONLY RARELY REACH THE BEACHES, WHERE THEY OFTEN HAVE BECOME TOO OLD AND WORN FOR CERTAIN IDENTIFICATION. APART FROM THE LISTED SPECIES AT LEAST 70 OTHER SPECIES, WHICH WE WILL NOT LIST HERE, ARE KNOWN FROM OFFSHORE WATERS IN THE N-W GULF OF MEXICO.

POLYSTIRA ALBIDA PERRY, 1811. ONLY A FEW SPECIMENS OF THIS LARGE BUT WIDE-SPREAD TURRID ARE KNOWN FROM THE BEACH. IT IS QUITE COMMON OFFSHORE, OFTEN DREDGED ALIVE. SOME OF THE BEACH SPECIMENS ARE PROBABLY SHELLS LOST BY SHRIMPERS NEAR THE FISHING PORTS (FREEPORT, PORT ARANSAS) AND THE REMAINDER ARE SHELLS OBTAINED FROM SPOIL MATERIAL RESULTING FROM CHANNEL DREDGING OPERATIONS. THE SPECIES LIVES IN TOO DEEP WATER TO REACH OUR BEACHES.

FIGURED IN: 1,3,5,6,7

PREVIOUS REFERENCES: 19,26,29

LOCALITIES: FREEPORT, PORT ARANSAS, PORT ISABEL.

PYRGOCYTHARA PLICOSA C. B. ADAMS, 1840. THIS SPECIES IS FAIRLY COMMON IN BEACHDRIFT IN ALL TEXAS BAYS AND ON THE BEACHES NEAR THE INLETS. IT LIVES ON SUBMERGED ACCUMULATIONS OF OLD OYSTER SHELLS ON WHICH IT CAN BE COLLECTED ALIVE IN GALVESTON WEST BAY AND AROUND PORT ARANSAS, ROCKPORT AND PORT ISABEL. IT IS VERY PLENTIFUL AT THE PORT ARANSAS CAUSEWAY AND SOUTH PADRE ISLAND. SEVERAL LIVE SPECIMENS HAVE BEEN COLLECTED ON MUDFLATS (COLL. SPEERS). IN REF. 11 AND IN A PAPER BY PUFFER AND EMERSON (SEE BELOW) IT HAS BEEN FIGURED AS MANGELIA SP.

FIGURED IN: 11, J. PAL., VOL. 27 (4), P. 537-544.

PREVIOUS REFERENCES: SEE REF. 11, 19.

LOCALITIES: IN BAYS ALONG ENTIRE TEXAS COAST AND NEAR INLETS.

VITRICYTHARA METRIA DALL, 1892. A SINGLE SPECIMEN OF THIS VERY PRETTY SMALL SHELL WAS OBTAINED FROM BEACHDRIFT AT THE WESTERN END OF THE SEAWALL AT GALVESTON (ODE) AND ANOTHER SMALL FRESH SPECIMEN ON THE GULF BEACH AT SOUTH PADRE ISLAND (SPEERS). IT IS A DEEPER WATER FORM WIDELY DISTRIBUTED OVER THE OFFSHORE SHELF. ONLY AT RARE OCCASIONS THESE FORMS REACH THE BEACH AND THEY CANNOT BE CONSIDERED PART OF THE COASTAL FAUNA.

FIGURED IN: 3

PREVIOUS REFERENCES: TEX. CONCH. VOL. 3 (9), P. 7.

LOCALITIES: GALVESTON, SOUTH PADRE ISLAND.

KURTZIELLA CERINELLA DALL, 1889. THIS IS UNDOUBTEDLY THE MOST COMMON TEXAS BEACH MANGELIID. SPECIMENS OBTAINED FROM BEACHDRIFT HAVE USUALLY LOST ALMOST ALL OF THE PECULIAR GRANULOSE PUNCTATIONS OF THE OUTER SHELL LAYER AND LOOK IN CONSEQUENCE OLD AND WORN. GOOD FRESH SPECIMENS ARE RARELY COLLECTED ON THE BEACH. A SINGLE LIVE SPECIMEN WAS COLLECTED BY MRS. BOONE ON THE MUDFLATS OF SAN LUIS PASS AND SEVERAL OTHER LIVE ONES WERE OBTAINED ON THE MUDFLATS NEAR THE COAST GUARD STATION AT PORT ISABEL (SPEERS). THE SPECIES IS ONLY SELDOM DREDGED OFFSHORE AND THIS MATERIAL LOOKS OLD AND WORN.

FIGURED IN: 4,6

PREVIOUS REFERENCES: 11,19

LOCALITIES: IN BEACHDRIFT ALONG THE ENTIRE TEXAS COAST.

KURTZIELLA ATROSTYLA DALL, 1889. THIS SPECIES IS ONE OF THE MOST COMMON MANGELIIDS OF THE TEXAS OFFSHORE. A SINGLE FRESH SPECIMEN WAS OBTAINED FROM A CLUMP OF WHIPCORAL WASHED ASHORE AT PORT ISABEL (ODE). TWO LIVE SPECIMENS WERE OBTAINED FROM WHIPCORAL AT BOCA CHICA (SPEERS) AND BEACH SPECIMENS WERE COLLECTED ON MUSTANG ISLAND (SPEERS).

FIGURED IN: 4,6

PREVIOUS REFERENCES: 12

LOCALITIES: PORT ISABEL.

.....TO BE CONTINUED

FROM TIME TO TIME, I HAVE PLUGGED IN THIS SECTION THE CONCEPT OF "THEMATIC EXHIBIT" FOR SEASHELLS. IT WAS HEARTENING TO NOTE THAT JUST SUCH AN EXHIBIT WON THE DUPONT AWARD (BEST OF THE SHOW) AT THE FIRST SANTA BARBARA SHELL SHOW IN CALIFORNIA. THIS WAS A DISPLAY ON SYMBIOSIS PREPARED BY FAYE B. HOWARD. A PHOTOGRAPH OF THE EXHIBIT IS REPRODUCED ON THE INSIDE OF THE BACK COVER OF TABULATA FOR JANUARY, 1970. THE INTERESTED READER MIGHT LOOK UP THE ARTICLES BY FAYE HOWARD ENTITLED "MOLLUSCAN RELATIONSHIPS" WHICH APPEARED IN TABULATA (OCTOBER, 1968 AND JANUARY, 1969 ISSUES). IT IS PRESUMED THAT THESE ARTICLES BY THE EXHIBITOR EMPHASIZED THE KEY FEATURES OF THE AWARD-WINNING EXHIBIT.

IN RELATION TO THE GENERAL SUBJECT OF SYMBIOSIS, THE ENTIRETY OF VOLUME 5 OF ADVANCES IN MARINE BIOLOGY (ACADEMIC PRESS, 1967, 424 PAGES) IS A MONOGRAPH ON "MARINE MOLLUSCS AS HOSTS FOR SYMBIOSES WITH A REVIEW OF KNOWN PARASITES OF COMMERCIALY IMPORTANT SPECIES" BY THOMAS C. CHENG. THE ARTICLES ORIGINATE FROM THE DEPARTMENT OF ZOOLOGY, UNIVERSITY OF HAWAII. HERE ARE SOME TIDBITS GLEANED FROM THE MONOGRAPH.

SYMBIOSIS IS CONSIDERED AS A BROAD ECOLOGICAL HETEROSPECIFIC RELATIONSHIP BETWEEN TWO ANIMALS. THE RELATIONSHIP RANGES FROM "PHORESIS" IN WHICH THE HOST ORGANISM MERELY PROVIDES SHELTER, SUPPORT OR TRANSFER FOR THE OTHER TO "PARASITISM" IN WHICH THE SMALLER ORGANISM, THE PARASITE, IS DEPENDENT METABOLICALLY ON THE LARGER, THE HOST. TWO OTHER RELATIONSHIPS ARE MENTIONED- "MUTUALISM" AND "COMMENSALISM". IN MUTUALISM, THE "MUTUALIST" AND THE HOST ARE "METABOLICALLY DEPENDENT ON EACH OTHER." COMMENSALISM IS DESCRIBED AS BEING COMPARABLE TO "EATING AT THE SAME TABLE" BUT NOT BEING DEPENDENT ONE ON THE OTHER.

THE SUBJECT OF SYMBIOSIS IS CONSIDERED TO BE IMPORTANT BECAUSE OF ITS OBVIOUS IMPACT ON THE HOST (DAMAGE TO COMMERCIALY IMPORTANT SHELLFISH), BECAUSE OF PUBLIC HEALTH CONSIDERATIONS (CAUSE OF HUMAN DISEASE), AND, BECAUSE OF THE FUNDAMENTAL BIOLOGICAL ASPECTS OF THE PHENOMENON.

ONE CHAPTER THAT MAY BE OF SOME INTEREST TO MANY OF US IS ENTITLED "PARASITES OF COMMERCIALY IMPORTANT MARINE MOLLUSCS - THE PHYLUM MOLLUSCA". THE SECTION DEALS WITH MOLLUSCAN PARASITES OF MOLLUSKS. ACTUALLY ONLY THE FAMILY PYRAMIDELLIDAE IS MENTIONED. IT IS STATED THAT ALL PYRAMIDELLIDS ARE PARASITES. ALTHOUGH ABBOTT IN HIS BOOK ON AMERICAN SEASHELLS INDICATES THAT SEVERAL HUNDRED SO-CALLED SPECIES OF THE "PYRAMS" HAVE BEEN DESCRIBED, CHENG MENTIONS ONLY A MERE HANDFUL, WHICH INCLUDES ODOSTOMIA IMPRESSA, ODOSTOMIA BISUTURALIS, ODOSTOMIA SEMINUDA, ODOSTOMIA SCALARIS, ODOSTOMIA EULIMOIDES, AND ODOSTOMIA TRIFIDA. THESE SPECIES ARE KNOWN TO PARASITIZE COMMERCIALY IMPORTANT SHELLFISH. THE ANIMALS USUALLY ATTACH TO THE OUTSIDE OF BIVALVES. AFTER PIERCING THE SOFT PARTS OF THE VICTIM WITH A LONG STYLET-LIKE PROBOSCIS, THE GASTROPODS FEED BY PUMPING OUT BLOOD OR TISSUE FLUID. HOST PREFERENCE IS APPARENTLY MANIFESTED BY EACH OF THESE PARASITIC MOLLUSCAN SPECIES BUT IT SEEMS DEBATABLE WHETHER ACTUAL HOST SPECIFICITY CAN BE PROVED. FOR EXAMPLE, ODOSTOMIA IMPRESSA PREFERENTIALLY FEEDS ON CRASSOSTREA VIRGINICA BUT IT WILL ALSO PARASITIZE BITTIUM VARIUM, CREPIDULA CONVEXA, TRIPHORA NIGROCINCTA AND UROSALPINX CINEREA. ODOSTOMIA BISUTURALIS PREFERS YOUNG OYSTERS BUT WILL ALSO FEED ON MERCENARIA MERCENARIA AND AEGUIPECTEN IRRADIANS.

DISTRIBUTION AND ECOLOGY OF THE TERRESTRIAL MOLLUSKS BY PAUL LOUIS MCGEE  
OF THE TEXAS COASTAL COUNTIES.

HISTORY OF THE TERRESTRIAL MALACOLOGY IN TEXAS

THE YEARS 1820-1880 MARKED THE ERA OF THE MOST INTENSIVE SCIENTIFIC EXPLORATION OF THE NATION. THIS ERA BEGAN WITH THE MASS EMIGRATION OF PIONEERS FROM OTHER PARTS OF THE WORLD TO THE UNITED STATES AND TO TEXAS. GEISER (1937) STATED THAT HIS FILES CONTAINED THE NAMES OF 1200 EXPLORERS WHO WERE IN TEXAS DURING THIS PERIOD.

JEAN LOUIS BERLANDIER (1805-1850) WAS AMONG THE FIRST OF THE NATURALISTS TO COME TO TEXAS AND THE FIRST RECORDS OF LAND MOLLUSKS FROM THIS AREA WERE OBTAINED FROM HIS COLLECTION. HE WAS EDUCATED IN SWITZERLAND UNDER THE FAMOUS BOTANIST DECANDOLLE AND CAME TO MEXICO IN 1826. IN 1828 HE JOINED A BOUNDARY COMMISSION SENT BY THE MEXICAN GOVERNMENT TO INVESTIGATE THE TERRITORY ALONG THE LOUISIANA BORDER IN WHAT IS NOW TEXAS, AND DURING THE YEARS 1828 TO 1834 HE TRAVELED EXTENSIVELY IN THE REGION BOUNDED BY MATAMOROS, LAREDO, UVALDE, KERRVILLE, HEMPSTEAD, SAN FELIPE, GOLIAD AND ARANSAS BAY. HIS MOST INTENSIVE COLLECTIONS WERE MADE IN THE VICINITY OF MATAMOROS, LAREDO, SAN ANTONIO, GOLIAD, AND SAN FELIPE.

ALTHOUGH BERLANDIER WAS PRIMARILY INTERESTED IN COLLECTING PLANTS FOR DECANDOLLE, HE ALSO GATHERED MANY LAND AND FRESH WATER MOLLUSKS WHICH HE SENT TO THE SWISS MALACOLOGIST, J. MORICAND. A DETAILED BIOGRAPHY OF BERLANDIER IS GIVEN IN S. W. GEISER'S BOOK "NATURALITST OF THE FRONTIER" (1937). ACCORDING TO GEISER (P. 69), THE U. S. NATIONAL MUSEUM IN WASHINGTON IS IN POSSESSION OF A LIST, IN BERLANDIER'S HANDWRITING, OF THE COLLECTIONS MADE FROM APRIL 25, 1827 TO NOVEMBER 15, 1830. IN ADDITION TO SOME 55,000 SPECIMENS OF PLANTS, THIS LIST MENTIONS "MORE THAN 700 SPECIMENS OF LAND AND FRESH WATER MOLLUSKS, MOSTLY FROM TEXAS". SOME OF THIS MATERIAL MUST HAVE REACHED MORICAND, SINCE THE LATTER DESCRIBED IN 1833 TWO SPECIES OF LAND SNAILS COLLECTED BY BERLANDIER WITH THE LOCALITY "MEXICO, IN THE PROVINCE OF TEXAS". THESE TWO SPECIES, NOW KNOWN AS POLYGYRA TEXASIANA AND PRATICO-LELLA BERLANDIERIANA, WERE THE FIRST LAND MOLLUSKS TO BE RECORDED FROM THE STATE WHERE THEY ARE BOTH WIDELY DISTRIBUTED, BUT IT IS NOT KNOWN EXACTLY WHERE BERLANDIER OBTAINED HIS SPECIMENS. LITTLE IS KNOWN CONCERNING THE DISPOSITION OF THE REMAINDER OF BERLANDIER'S SHELLS. IN 1853, LT. D. N. COUCH, OF THE U. S. ARMY, VISITED MATAMOROS WHERE BERLANDIER HAD MADE HIS HOME FROM 1829 UNTIL HIS DEATH IN 1851. COUCH PURCHASED THE REMAINDER OF HIS NATURAL HISTORY COLLECTION AND LATER PRESENTED IT TO THE U. S. NATIONAL MUSEUM. SOME MOLLUSKS MUST HAVE BEEN INCLUDED IN THIS MATERIAL FOR I. LEA (1857) DESCRIBED FROM IT TWO SPECIES WITH THE LOCALITY "TEXAS" WHICH HE LATER CORRECTED TO "TAMAULIPAS". THE FIRST OF THESE, HELIX (POLYGYRA) COUCHIANA, NOW KNOWN AS POLYGYRA ARIADNAE, IS STRICTLY A MEXICAN SPECIES AND NOT PART OF THE LIVING TEXAS FAUNA, ALTHOUGH IT IS SOMETIMES FOUND DEAD IN TEXAS BEACH DRIFT. THE SECOND SPECIES, HELIX (POLYGYRA) TAMAULIPASENSIS, (WHICH DR. J. BEQUAERT NOW REGARDS AS THE EARLIEST VALID NAME FOR ONE OF THE SUBSPECIES OF POLYGYRA TEXASIANA), IS FOUND IN WEST TEXAS BUT NOT DEFINITELY KNOWN FROM NORTHEASTERN MEXICO.

FERDINAND VON ROEMER (1818-1891), A WELL KNOWN GERMAN GEOLOGIST AND PAL-

ENTOMOLOGIST, CAME TO TEXAS IN NOVEMBER, 1845, AND REMAINED UNTIL MAY, 1847. IN ADDITION TO HIS INTENSIVE STUDY OF THE GEOLOGY OF TEXAS, WHICH INCLUDED A COLLECTION OF NUMEROUS FOSSILS AND OTHER GEOLOGICAL SPECIMENS, ROEMER MADE THE FIRST EXTENSIVE AND CORRECTLY LOCALIZED COLLECTION OF THE MARINE, TERRESTRIAL, AND FRESH WATER MOLLUSKS OF TEXAS. AT GALVESTON ISLAND, ROEMER'S PORT OF ENTRY FROM EUROPE, HE COLLECTED HELIX SEPTENVOLVA, THE TEXAS FORM NOW KNOWN AS POLYGYRA SEPTENVOLVA FEBIGERI, AND SUCCINEA TEXASIANA (NOW REGARDED AS IDENTICAL WITH SUCCINEA LUTEOLA), WHICH HAD BEEN DESCRIBED TWO MONTHS EARLIER THE SAME YEAR. BEFORE COMPLETING THE TRIP FROM GALVESTON TO HOUSTON, ROEMER WAS INVITED TO SPEND A FEW DAYS AT "NEW WASHINGTON", NOW MORGAN'S POINT, ON THE HOUSTON SHIP CHANNEL. HERE HE COLLECTED HELIX ALTERNATA (THE TEXAS FORM AT PRESENT CALLED ANGUISPIRA ALTERNATA STRONGYLODES; PFEIFFER'S HELIX STRONGYLODES, WAS BASED ON ROEMER'S SPECIMENS FROM TEXAS), AND HELIX CADUCA, (WHICH WAS WRONGLY IDENTIFIED AND WAS ACTUALLY A SPECIMEN OF MESOMPHIX FRIABILIS). THESE FOUR SPECIES OF COMMON SNAILS WERE TAKEN WITHIN THE GULF COAST AREA OF THIS REPORT, WHILE THE REMAINING TWENTY-FOUR SPECIES OF LAND SNAILS COLLECTED BY ROEMER CAME FROM NEW BRAUNFELS IN COMAL COUNTY. THIS MALACOLOGICAL MATERIAL WAS SUBMITTED TO L. PFEIFFER (1849) WHO DESCRIBED THE NEW SPECIES. ROEMER (1849), IN THE GERMAN EDITION OF HIS BOOK "TEXAS", NOW VERY RARE, LISTED HIS ENTIRE COLLECTION OF MOLLUSKS, BUT THE ENGLISH TRANSLATION, PUBLISHED A FEW YEARS AGO, OMITTED THIS LIST.

JACOB BOLL (1828-1880), A SWISS NATURALIST AND ENTOMOLOGIST, CAME TO TEXAS IN 1869 AND COLLECTED MANY NATURAL HISTORY SPECIMENS. UNDER THE DIRECTION OF L. AGASSIZ, BOLL WAS CONCERNED PRIMARILY WITH COLLECTING INSECTS FOR THE MUSEUM OF COMPARATIVE ZOOLOGY OF HARVARD, BUT AFTER AGASSIZ' HE COLLECTED VERTEBRATE FOSSILS FOR E. D. COPE. LIKE MOST OTHER NATURALISTS OF HIS DAY, BOLL ALSO COLLECTED LAND SNAILS, AND HE IS KNOWN TO HAVE OBTAINED THE TYPE OF HELIX (TRIODOPSIS) HENRIETTAE, NOW KNOWN AS TRIODOPSIS VULTUOSA HENRIETTAE IN "EASTERN TEXAS", AS WELL AS THAT OF CONULUS TROCHULUS, NOW KNOWN AS EUCONULUS CHERSINUS TROCHULUS, SOMEWHERE IN "TEXAS". THE SPECIMENS OF PRACTICOLELLA BERLANDIERIANA, MICROCERAMUS TEXANUS AND HOLOSPIRA GOLDFUSSI, REPORTED BY H. STREBEL AND G. PFEIFFER (1880) FROM DALLAS WERE RECEIVED FROM BOLL; PROBABLY THEY WERE NOT COLLECTED IN THE DALLAS AREA, BUT IN SOME OTHER SECTION OF TEXAS. APPARENTLY MOST OF BOLL'S MOLLUSKS WERE SENT TO EUROPEAN NATURALISTS.

J. A. SINGLEY WAS ONE OF TEXAS' MOST ACTIVE LOCAL CONTRIBUTORS TO TERRESTRIAL MALACOLOGY. HE COLLECTED WIDELY IN THE STATE FROM 1888 TO 1893, PARTICULARLY IN THE CORPUS CHRISTI AREA. SINGLEY'S MOST IMPORTANT PUBLICATION WAS A LIST OF THE MARINE AND TERRESTRIAL MOLLUSKS OF TEXAS THAT WAS INCLUDED WITH THE FISHES OF TEXAS PUBLISHED IN THE BULLETIN OF U. S. FISH COMMISSION IN 1892. THE SAME LIST WAS REPEATED IN THE FOURTH ANNUAL REPORT OF GEOLOGICAL SURVEY OF TEXAS (FOR 1892) PUBLISHED IN 1893.

J. D. MITCHELL (1848-1922) WAS ONE OF THE BEST OF THE LOCAL NATURALISTS. HIS PRIMARY INTEREST WAS IN THE FIELD OF HERPETOLOGY, BUT HE ALSO MADE LARGE COLLECTIONS OF INSECTS, CRUSTACEA AND MOLLUSKS. HIS ABILITY AS A COLLECTOR IS ATTESTED TO BY THE LARGE NUMBER OF SPECIES NAMED FOR HIM. MOST OF HIS COLLECTIONS WERE MADE IN THE VICINITY OF VICTORIA, TEXAS, HIS HOME TOWN. THERE ARE TWO UPDATED LISTS OF TEXAS' MOLLUSKS PUBLISHED FOR HIM BY THE PRINTING SHOP OF A VICTORIA NEWSPAPER. COPIES OF THESE LISTS IN THE U. S.



NATIONAL MUSEUM INDICATE THAT THE PROBABLE YEAR OF THEIR PUBLICATION WAS 1894.

TWO OF THE MORE RECENT IMPORTANT MALACOLOGISTS IN THE STATE HAVE BEEN J. K. STRECKER AND E. P. CHEATUM. STRECKER WAS CURATOR OF THE BAYLOR UNIVERSITY MUSEUM IN WACO, AND IN THE YEAR FOLLOWING HIS DEATH (1933) THE BAYLOR UNIVERSITY MUSEUM PUBLISHED HIS CHECK LIST OF TEXAS MOLLUSKS. E. P. CHEATUM BEGAN HIS MALACOLOGICAL COLLECTIONS IN 1935 AND CONTINUES TO THE PRESENT TIME TO PUBLISH ON TERRESTRIAL MOLLUSKS, PRIMARILY FROM THE GENERAL VICINITY OF DALLAS, TEXAS.

UNQUESTIONABLY THE OUTSTANDING PUBLICATION ON TERRESTRIAL MOLLUSKS FOR THE AREA IS H. A. PILSBRY'S MONOGRAPH, LAND MOLLUSKS OF NORTH AMERICA, PUBLISHED IN FOUR PARTS BY THE ACADEMY OF NATURAL SCIENCE IN PHILADELPHIA FROM 1939 TO 1948. PILSBRY FIRST VISITED TEXAS IN 1885-1886 AND LATER RETURNED WITH JAMES H. FERRIS TO COLLECT IN THE SOUTHERN AND SOUTHWESTERN PORTIONS OF THE STATE. MORE INFORMATION CONCERNING THESE EARLY TRAVELS OF PILSBRY AND FERRIS IN TEXAS CAN BE OBTAINED FROM THEIR DESCRIPTION OF THE AREA IN THE PROCEEDINGS OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA FOR 1906.

OTHER NATURALISTS KNOWN TO HAVE MADE MALACOLOGICAL COLLECTIONS IN TEXAS INCLUDE:

GUSTAF WILHELM BELFRAGE (1834-1882)  
IN TEXAS IN 1867.

D. N. COUCH (1822-1897)  
IN TEXAS IN 1853-1854.

JOHN MILTON BIGELOW (1804-1878)  
IN TEXAS IN 1853.

CALEB G. FORSHEY (1812-1881)  
IN TEXAS IN 1855-1860.

RICHARD BYRD BURLESON (1822-1879)  
IN TEXAS IN 1855-1879.

G. H. RAGSDALE  
IN TEXAS IN 1846-1860.

B. F. CARTER  
IN TEXAS IN 1859.

F. A. SAMPSON (1842-1860)

JOHN HENRY CLARK  
IN TEXAS IN 1850-1855

A. G. WETHERBY  
IN TEXAS IN 1878-1880.

#### HISTORY OF THE DEVELOPMENT OF PROVINCES AND THE PROVINCE CONCEPT

FABRICIUS (1778) WAS ONE OF THE FIRST TO CATEGORIZE THE LAND AREAS OF THE WORLD INTO REGIONS OF SIMILARITIES WHICH HE CALLED "CLIMATE". LATREILLE (1817) MODIFIED AND IMPROVED THE SYSTEM OF FABRICIUS, BUT HE TOO BASED HIS DIVISIONS PRIMARILY ON THE TEMPERATURE OF THE REGIONS. SWAINSON (1835) WAS THE FIRST TO USE THE TERM "PROVINCE", AND HE WAS ALSO THE FIRST TO RECOGNIZE UNIFORMITY OF THE FAUNA AS A BASIC CRITERION FOR DETERMINING THE EXTENT OF AREAS.

WOODWARD (1856) OUTLINED AND NAMED THE MARINE PROVINCES OF THE WORLD, AND HIS SYSTEM IS STILL IN USE TODAY, WITH ONLY MINOR MODIFICATIONS. IN ADDITION

TO THE REQUIREMENT OF FAUNAL UNIFORMITY, WOODWARD PROPOSED THAT AT LEAST 50% OF THE FAUNA OF A PROVINCE SHOULD CONSIST OF ENDEMIC SPECIES.

THE FIRST ACCEPTABLE DIVISION OF THE CONTINENTAL AREAS OF THE WORLD INTO MAJOR PROVINCES WAS PROPOSED BY SCLATER (1858), WHO BASED THEM ON THE HIGHER TAXONOMIC CATEGORIES OF BIRDS. THIS TYPE OF DIVISION IS A REFLECTION OF EVOLUTIONARY RELATIONSHIPS AND IS AN INDICATION OF THE EFFECTIVENESS OF THE ISOLATION OF THESE AREAS, EITHER IN TIME OR IN DISTANCE. SCLATER NAMED HIS MAJOR REALMS THE PALAEARCTIC, NEARCTIC, NEOTROPICAL, ETHIOPIAN, INDIAN AND AUSTRALIAN AND THESE DIVISIONS WHICH HAVE SINCE BEEN ABUNDANTLY CONFIRMED BY DISTRIBUTION STUDIES OF OTHER ANIMALS.

E. D. COPE (1880), IN A DISCUSSION OF THE ZOOLOGICAL POSITION OF TEXAS, ASSERTED THAT THE STATE SHOWED FAR MORE AFFINITY FOR SPECIES OF THE NEARCTIC THAN FOR SPECIES OF THE NEOTROPICAL REGIONS. ON THE BASIS OF THE DISTRIBUTION OF VERTEBRATES, MAINLY REPTILES AND BATRACHIANS, COPE RECOGNIZED AND DEFINED IN TEXAS A SOUTHWESTERN DIVISION, A PLATEAU DIVISION, AND A SOUTHEASTERN DIVISION. IN AN EARLIER ZOOGEOGRAPHIC STUDY, COPE (1873) HAD DEFINED THE AUSTRORIPARIAN PROVINCE TO INCLUDE ALL OF THE COASTAL PLAINS OF THE SOUTHWESTERN ATLANTIC AND GULF STATES, AND THE SONORAN PROVINCE TO ENCOMPASS THE WESTERN DESERT. COPE RECOGNIZED THE TRANSITIONAL NATURE OF THE TEXAS FAUNA, PARTICULARLY THE STRONG AFFINITIES BETWEEN THE AUSTRORIPARIAN PROVINCE AND THE SOUTHEASTERN DIVISION.

DICE (1943) PROPOSED A DEFINITION OF A PROVINCE IN MODERN TERMS AS "A CONSIDERABLE AND CONTINUOUS GEOGRAPHIC AREA CHARACTERIZED BY THE OCCURRENCE OF ONE OR MORE ECOLOGICAL ASSOCIATIONS THAT DIFFER, AT LEAST IN PROPORTIONAL AREA COVERED, FROM THE ASSOCIATIONS OF ADJACENT PROVINCES. IN GENERAL, BIOTIC PROVINCES ARE CHARACTERIZED ALSO BY PECULIARITIES OF VEGETATION TYPE, ECOLOGICAL CLIMAX, FLORA, FAUNA, CLIMATE, PHYSIOGRAPHY, AND SOIL". ON THE BASIS OF THIS DEFINITION, DICE PROPOSED A SYSTEM OF PROVINCES FOR THE WHOLE OF NORTH AMERICA, WITH THE NAVAHOAN, CHIHUAHUAN, KANSAN, COMANCHIAN, TAMAULIPAN, TEXAN, AND AUSTRORIPARIAN PROVINCES OCCURRING LARGELY, OR IN PART, WITHIN THE BOUNDARIES OF TEXAS.

ON THE BASIS OF STUDIES OF VERTEBRATE DISTRIBUTION, BLAIR (1950) MADE CERTAIN MODIFICATIONS OF THE BOUNDARIES OF DICE'S PROVINCES AS THEY OCCUR IN TEXAS. THE COMANCHIAN PROVINCE WAS SPLIT, WITH THE NORTHERN PORTION BEING COMBINED WITH THE TEXAN PROVINCE, AND THE SOUTHERN PORTION, INCLUDING THE EDWARDS PLATEAU, ESTABLISHED AS A NEW PROVINCE CALLED THE BALCONIAN, THE BALCONES ESCARPMENT FORMING ITS SOUTHEASTERN BOUNDARY. BLAIR ALSO PROPOSED EXTENDING THE NORTHERN BOUNDARY OF THE TAMAULIPAN PROVINCE NORTHWARD FROM BAFFIN BAY TO MATAGORDA BAY. THE FOLLOWING IS A BRIEF DESCRIPTION OF THE ZOOGEOGRAPHIC PROVINCES OCCURRING IN TEXAS AS PROPOSED BY DICE AND MODIFIED BY BLAIR; AND SHOWN IN FIG. 1:

1. THE AUSTRORIPARIAN BIOTIC PROVINCE INCLUDES MOST OF THE GULF COAST PLAIN OF NORTH AMERICA, EXTENDING FROM THE ATLANTIC OCEAN ON THE EAST TO TEXAS ON THE WEST. ITS WESTERN BOUNDARY IN TEXAS LIES APPROXIMATELY ALONG A NORTH-SOUTH LINE DRAWN FROM THE EASTERN EDGE OF RED RIVER COUNTY THROUGH THE WESTERN EDGE OF HARRIS COUNTY, TO GALVESTON ISLAND. THIS PROVINCE HAS THE HIGHEST RAINFALL IN THE STATE (45 IN. OR MORE YEARLY AVERAGE) AND IS THEREFORE, MORE DENSELY WOODED. MORE THAN ONE-FOURTH OF THE AREA COVERED IN THIS REPORT LIES WITHIN THIS PROVINCE, IN CHAMBERS, JASPER, JEFFERSON, HARDIN, HARRIS, LIBERTY, MONTGOMERY, NEWTON, ORANGE AND TYLER COUNTIES.

.....TO BE CONTINUED

THE OCCURRENCE OF THIS SMALL GASTROPOD IN TEXAS WAS RECENTLY REVIEWED IN THE TEX. CONCH. (VOL. 6, P. 95). THE SHELLS SHOWN IN THE FIGURE WERE OBTAINED FROM BEACHDRIFT AT MATAGORDA BEACH. THEY ARE FRESH LOOKING AND WERE IN ALL PROBABILITY DERIVED FROM HOSTS LIVING NEARBY. THE ONLY PREVIOUS REFERENCE TO THIS SPECIES IN THE TEXAS FAUNA IS FOR THE OFFSHORE CORAL REEFS, WHERE MORE SIMILAR LOOKING SPECIES OCCUR:

- 1958 MELANELLA ARCUATA C. B. ADAMS, 1850, PARKER, R. H. AND J. R. CURRAY, FAUNA AND BATHYMETRY OF BANKS OF CONTINENTAL SHELF, NORTHWEST GULF OF MEXICO. BULL. AM. ASS. PETR. GEOL., VOL. 40, PP. 2428-2439.

THE MELANELLIDAE ARE AS ABBOTT HAS REMARKED BADLY IN NEED OF REVISION. SOURCES ARE OFTEN UNCLEAR OR CONTRADICTORY. WE CITE HERE:

- 1850 EULIMA ARCUATA C. B. ADAMS, CONTR. CONCH., No. 7, P. 110 (REPRINT 1950 OCC. PAP. MOLL., P. 257.)  
1889 EULIMA ARCUATA C. D. ADAMS, DALL, TRANS. WAGN. INST. SC. VOL. 3, PT. 1, P. 160.  
1890 EULIMA ARCUATA C. B. ADAMS, DALL, GASTR. BLAKE REP., P. 328, PL. 19, FIG. 11.



MELANELLA ARCUATA FROM BEACHDRIFT ON MATAGORDA BEACH. SIZE ABOUT 2 1/2 M.M.

## SHELL MOUNDS AND KITCHEN MIDDENS

SHELL HEAPS, A TERM APPLIED TO DEPOSITS OF REFUSE RESULTING FROM THE CONSUMPTION OF SHELLFISH AS FOOD, COMMONLY OCCUR IN THE COASTAL STATES, AND ALONG RIVER VALLEYS WHERE FRESH WATER CLAMS AND SNAILS WERE PLENTIFUL. THESE KITCHEN MIDDENS, ACCUMULATED ON ALL INHABITED SITES, AND ARE AMONG THE MOST WIDELY DISTRIBUTED AND PERMANENT REMAINS LEFT BY PRIMITIVE PEOPLES. FOR THESE REASONS, AND BECAUSE THEY NECESSARILY CONTAIN EXAMPLES OF HANDIWORK OF THE PROPLES CONCERNED IN THEIR ACCUMULATION, THEY ARE OF THE HIGHEST VALUE TO THE STUDENT OF PREHISTORIC TIMES.

THE PERCENTAGE OF WASTE RESULTING FROM THE CONSUMPTION OF SHELLFISH IS VERY GREAT, AND THE ACCUMULATIONS ON MANY SITES ARE SO EXTENSIVE AS TO EXCITE THE WONDER OF THOSE WHO ENCOUNTER THEM FOR THE FIRST TIME. DEPOSITS COVERING 10 OR EVEN 20 ACRES ARE NOT UNCOMMON, BUT THE DEPTH IS USUALLY NOT GREAT SAVE ON LIMITED AREAS, WHERE THEY RISE FREQUENTLY TO 20 FEET, AND IN CASES TO 30 FEET OR MORE. THOUGH SOMETIMES APPROXIMATELY HOMOGENEOUS THROUGHOUT THERE ARE GENERALLY EVIDENCES OF STRATIFICATION IN THE GREATER DEPOSITS, AND LAYERS OF EARTH AND OTHER REFUSE ARE INTERCALATED WITH THE SHELLS.

THE DEPOSITS ARE NOT ALWAYS MERE RANDOM ACCUMULATIONS, FOR DURING THE PERIOD OF DEPOSITION AND SUBSEQUENTLY, THE MATERIALS HAVE BEEN UTILIZED IN THE ERECTION OF MOUNDS FOR RESIDENCE AND DEFENSE AND AS DEPOSITORY FOR THE DEAD. MANY OF THE MOST NOTABLE SHELL-MOUNDS ARE THE RESULT OF LONG PERIODS OF GRADUAL DEPOSITION AND BUILDING DURING WHICH THEY SERVED ALTERNATELY FOR RESIDENCE AND BURIAL, AND IN THE SOUTH, PERHAPS ALSO AS SITES FOR TEMPLES AND FORTIFICATIONS.

A MOUND SITUATED ON STALLINGS IS, IN THE SAVANNAH RIVER BELOW AUGUSTA, GEORGIA, AFFORDS AN EXCELLENT ILLUSTRATION OF THE USE OF MIDDEN DEPOSITS IN THE CONSTRUCTION OF BURIAL MOUNDS. IT IS DESCRIBED AT 15 FEET IN HEIGHT AND 120 BY 300 FEET IN HORIZONTAL EXTENT; CONSISTING OF MUSSEL, CLAM AND SNAIL (PALUDINA) SHELLS AND AS CONTAINING HUNDREDS OF SKELETONS DEPOSITED IN SUCCESSIVE LAYERS.

IN DISCUSSING THE SPECIES ENCOUNTERED, MOUNDS OF FLORIDA ARE DESCRIBED: THOSE ALONG THE ATLANTIC COAST OF THE PENINSULA ARE COMPOSED CHIEFLY OF OYSTER SHELLS; BUT ON THE WEST COAST, BESIDES THE OYSTERS THERE ARE SEVERAL GENERA OF THE CONCHS INCLUDING BUSYCON, STROMBUS, PLEUROPOCA, FASCIOLARIA, AND OTHER SHELLS. THE DEPOSITS OF THE NORTHERN MARGIN OF THE GULF OF MEXICO IN LOUISIANA, AND MISSISSIPPI DESCRIBED AS CONTAINING ESPECIALLY THE OYSTER AND THE CLAM GNATHODON (RANGIA) CUNEATA. THE INLAND FRESH-WATER SHELL-HEAPS OF FLORIDA ARE COMPOSED OF DISTINCT GENERA OF SHELLS - AMPULLARIA, PALUDINA, UNIO, ETC. ON THE ST. JOHN'S RIVER, A FRESH-WATER SNAIL, VIVIPARA GEORGIANA IS EVERYWHERE THE PRINCIPAL, AND IN MANY CASES THE ALMOST EXCLUSIVE SPECIES.

SINCE THE OCCUPANCY OF THE COUNTRY BY THE WHITES, THE DESTRUCTIONS OF THESE DEPOSITS OF SHELL HAS GONE FORWARD WITH GREAT RAPIDITY. THEY HAVE BEEN BURNED FOR LIME AND FOR FERTILIZER; HAVE BEEN USED IN VAST QUANTITIES FOR THE BUILDING OF ROADS, AS AT ST. AUGUSTINE, MOBILE AND NEW ORLEANS, AND HAVE BEEN LEVELED BY THE PLOW ON INNUMERABLE SITES.

THE CULTURAL CONTENTS OF THE NORMAL MIDDENS FURNISH A VERY STRIKING RECORD OF THE ARTS AND INDUSTRIES, HABITS AND CUSTOMS OF THE TRIBES CONCERNED. ORDINARY IMPLEMENTS OF STONE, BONE, SHELL, WOOD, AND METAL ARE EMBEDDED WITH THE SHELLS, AND IT IS NOT UNUSUAL TO ENCOUNTER AT VARIOUS LEVELS TRACES OF ANCIENT LODGE SITES. IT IS OBSERVED THAT IN SOME OF THE DEPOSITS REMAINS OF ART ARE RARE OR APPARENTLY ABSENT, WHILE IN OTHERS OF EQUAL SIZE AND POSSIBLY GREATER ANTIQUITY, ARTIFACTS ARE PLENTIFUL. FRAGMENTARY EARTHENWARE IS ABUNDANT IN MANY OF THE HEAPS OF EASTERN UNITED STATES, AND USUALLY CORRESPONDS SOMEWHAT CLOSELY WITH THAT OF THE VILLAGE SITES OF THE GENERAL REGIONS. BUT IN THE SALT-WATER ACCUMULATIONS THE POTTERY IS OFTEN EXCEPTIONALLY RUDE IN MAKE. THIS MAY BE MEASURABLY ACCOUNTED FOR ON THE THEORY THAT THE SHELL HEAP SITES WERE IN MANY CASES NOT PERMANENT ABODES AND THAT INFERIOR VESSELS WERE CONSTRUCTED FOR LOCAL AND TEMPORARY USE.

MANY OF THESE SHELL HEAPS, ESPECIALLY OF FLORIDA, PRESENT THE APPEARANCE OF GREAT AGE, AND THE GROWTH ON THEM OF LIVE OAKS OF THE LARGEST SIZE INDICATES THAT THE DEPOSITS HAD REACHED THEIR PRESENT DIMENSIONS BEFORE, PERHAPS LONG BEFORE, THE DISCOVERY OF AMERICA. GREAT AGE IS ALSO SUGGESTED BY CHANGES IN THE RIVER COURSES, THE EROSION OF BLUFFS, AND THE FORMATION OF SWAMPS SINCE THE PERIOD OF THE MIDDEN ACCUMULATION, AS WELL AS BY CHANGES IN THE CHARACTER OF THE SHELLS THEMSELVES. DR. H. A. PILSBRY, DISCUSSING THE BEARING OF THE OBSERVED FAUNAL CHANGES ON THE QUESTION OF ANTIQUITY STATED THAT THERE WAS A MARKED CHANGE IN THE CHARACTERISTICS OF THE SHELLS DURING THE PERIOD OF FORMATION OF CERTAIN OF THE SHELL FIELDS. AT THE LOWER LEVELS IN THE JUNIPER CREEK MOUNDS, FOR EXAMPLE, A DOMINANT SPECIES OF THE SHELLS USED IS THE NORMAL VIVIPARA GEORGIANA. NEAR THE SURFACE A DIVERGENT FORM (ALTIOR) APPEARS AND PREVAILS. AT ANOTHER POINT A VARIETY KNOWN AS LIMNOTHAUMA APPEARS, THE MOST STRONGLY CHARACTERIZED INDIVIDUALS BEING AT OR NEAR THE SURFACE. "WE HAVE NO DEFINITE STANDARD WHEREBY TO MEASURE THE TIME REQUIRED FOR THE EVOLUTION OF A NEW SPECIES OR VARIETIES, AND THEIR ESTABLISHMENT AS DOMINANT LOCAL FORMS; BUT JUDGING BY THE AMOUNT OF CHANGE IN THE MOLLUSCA SINCE THE DEPOSITION OF SUCH POST-GLACIAL DEPOSITS AS THE LOESS, WE CANNOT ESCAPE THE CONCLUSION THAT A LONG PERIOD IS INDICATED. (H. A. PILSBRY IN A LETTER ADDRESSED TO CLARENCE B. MOORE IN RESPONSE TO INQUIRIES. ABOUT 1910).

FROM BULLETIN 30, PART 2; BUREAU OF AMERICAN ETHNOLOGY, 1910.

.....TO BE CONTINUED

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....CONTINUED FROM PAGE 9

FEATURED AT THE FESTIVAL WILL BE GOLD MEDAL AWARD-WINNING UNDERWATER MOVIES FROM AROUND THE WORLD. COLOR AND BLACK AND WHITE SALON PRINTS AS WELL AS SCUBA AND UNDERWATER PHOTOGRAPHIC EQUIPMENT WILL BE ON DISPLAY. THREE SALT-WATER AQUARIUMS FILLED WITH EXOTIC MARINE LIFE WILL BE EXHIBITED. THERE WILL ALSO BE EXTRAORDINARILY BEAUTIFUL PRIZED COLLECTIONS OF CORAL AND SHELLS.

TICKETS ARE \$2.50 (MATINEE) AND \$3.50 (EVENING) AT THE JONES HALL BOX OFFICE, OR \$2.00 AND \$3.00 WHEN PURCHASED IN ADVANCE AT ALL FOLEY'S OR FROM MEMBERS OF THE HOUSTON UNDERWATER CLUB. THE FESTIVAL WILL CULMINATE AN INTERNATIONAL UNDERWATER PHOTOGRAPHIC COMPETITION, SPONSORED BY THE HOUSTON UNDERWATER CLUB IN CONJUNCTION WITH THE TEXAS CHAPTER OF THE UNDERWATER PHOTOGRAPHIC SOCIETY AND TEXAS GULF COAST COUNCIL OF DIVING CLUBS. FOR FURTHER INFORMATION CALL 464-1010.

BOOK REVIEW

BY W. W. SUTOW, M.D.

THE LIVING COWRIES BY C. M. BURGESS. A. S. BARNES COMPANY AND CARLTON BEAL. 1970. 389 PAGES. 9 1/2 x 12 1/2 INCHES. \$30.

IN SPITE OF ITS EXPENSIVE PRICE TAG (\$30) THIS BOOK WILL BE THE INDISPENSABLE REFERENCE FOR ANY SHELL COLLECTOR WHO HAS AN INTEREST IN THE COWRIES. THE BOOK IS HIGHLY RECOMMENDED.

ACCORDING TO THE AUTHOR, THE BOOK "WAS WRITTEN TO PROVIDE SHELL COLLECTORS, MALACOLOGISTS, AND OTHER INTERESTED INDIVIDUALS WITH AN ILLUSTRATED REFERENCE TO ALL OF THE KNOWN LIVING MEMBERS OF THE GENUS CYPRAEA LINNAEUS 1758". DR. BURGESS HAS SUCCEEDED IN DOING JUST THAT.

BURGESS RECOGNIZES 189 SPECIES OF COWRIES, EACH OF WHICH IS ILLUSTRATED. IN ADDITION, ABOUT A HUNDRED "GEOGRAPHICAL RACES" ARE SHOWN. EFFORT WAS MADE TO POSITION AND LIGHT THE SHELLS "SO THAT MINUTE DETAILS OF TOOTH FORMATION, APERTURE, AND OTHER SPECIFIC CONCHOLOGICAL CHARACTERS ARE CLEARLY SHOWN". THE RESULTS ARE THE 44 BEAUTIFUL AND CLEAR COLOR PLATES OF PHOTOGRAPHS THAT SHOW DORSAL AND VENTRAL VIEWS OF EACH SPECIES DESCRIBED.

IN THE TEXT, EACH SPECIES IS IDENTIFIED BY THE NAME, THE AUTHOR, THE YEAR DESCRIBED AND THE PERIODICAL OR PUBLICATION IN WHICH THE ORIGINAL DESCRIPTION APPEARED. SYNONYMS ARE GIVEN IN CHRONOLOGICAL ORDER. THE SHELL, ANIMAL, HABITAT AND DISTRIBUTION ARE DESCRIBED IN DETAIL. MAXIMUM AND MINIMUM SIZES ARE INDICATED. MAPS DRAWN FOR EACH SPECIES GIVE THE KNOWN RANGE.

ALSO, "PERTINENT HINTS ON FIELD COLLECTING, NOTEWORTHY HISTORICAL INCIDENTS AND INTERESTING STORIES REGARDING THE SHELLS ARE RECORDED. SUCH FACTS AS SEEM INCONTESTABLE CONCERNING HABITAT, ANIMAL COLOR, AND MANTLE CHARACTERISTICS ARE TABULATED".

AN INTERESTING FEATURE IS THE RARITY RATING, ASSIGNED BY THE AUTHOR TO EACH SPECIES. A NUMERICALLY GRADED SCALE IS USED - FROM 1 (COMMON) TO 10 (EXTREMELY RARE). THE "MOST COMMON RATING" (1) IS GIVEN TO FOUR SPECIES: CAPUT-SERPENTIS, TIGRIS, ANNULUS AND MONETA. THE RAREST COWRIES, EACH WITH A RATING OF 10, ARE: COHENAE, ENGLERTI, MARTINI, MUSUMEA, RABAULENSIS, KATSUAE, BRODERIPII, VALENTIA, BARCLAYI, LEUCODON, ARMENIACA AND PORTERI. CYPRAEA AURANTIUM, THE GOLDEN COWRY, RATES ONLY A "7".

THE BOOK ALSO CONTAINS HELPFUL DISCUSSIONS OF CERTAIN COWRY "GROUPS" AND PROVIDES THE READER WITH SOME 9 PAGES OF REFERENCES (THROUGH 1965) TO THE PUBLISHED LITERATURE ON THE GENERAL SUBJECT OF COWRIES.

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SPIROLAXIS EXQUISITA AT GALVESTON

A SOMEWHAT BROKEN SPECIMEN OF THIS REMARKABLE SPECIES WAS RECENTLY FOUND IN BEACHDRIFT AT SAN LUIS PASS, GALVESTON ISLAND, BY MR. FRANK VAN MORKHOVEN.

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Texas

# CONCHOLOGIST

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## NOTES & NEWS LIBRARIES

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### OCTOBER MEETING

CHARLES DOH WILL SHARE WITH US HIS EXCITEMENT AT FINDING A COLONY OF STROMBUS GALLUS THIS SUMMER WHILE ON VACATION IN THE WEST INDIES. ADMIRAL CARLOS GARDEZA WILL BRING SOME OF THE PRIZE FINDS FROM HIS SUMMER STAY AT HIS HOME AT SANIBEL ISLAND OFF THE WEST COAST OF FLORIDA. THE MEETING WILL BE HELD OCTOBER 28 AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE.

MEMBERS ARE INVITED TO BRING SPECIAL SHELLS COLLECTED ON RECENT BEACH TRIPS OR VACATION JOURNEYS TO PUT ON THE DISPLAY TABLE. FOR INSTANCE, AT THE LAST MEETING SAM AND FANNIE MIRON WERE CARRYING A NICE RECENT FIND FROM THE GALVESTON BEACH, A LIVE, BIG NERITINA RECLIVATA. ALTHOUGH COMMON FROM LOUISIANA EASTWARDS ALONG THE GULF COAST, THEY ARE FOUND VERY RARELY ALIVE IN TEXAS. PLEASE, IF YOU BRING A SHELL OR SHELLS, BE PREPARED TO GIVE A VERY BRIEF DISCUSSION ON YOUR OFFERING, OR WRITE IT OUT ON A CARD WITH THE DISPLAY.

### REPORT SEPTEMBER MEETING

THE MONTHLY MEETING, ATTENDED BY ABOUT 40 MEMBERS AND 12 GUESTS, WAS CALLED TO ORDER BY DR. HELMER ODÉ, PRESIDENT, AT 8:00 P.M. ON SEPTEMBER 23RD, 1970.

AFTER READING OF THE MINUTES OF THE LAST MEETING DR. ODÉ AND MR. VAN MORKHOVEN SHOWED A NUMBER OF PHOTOGRAPHS OF MICRO-GASTROPODS COLLECTED FROM BEACHDRIFT SAMPLES FROM OUR TEXAS SHORE AND PHOTOGRAPHED BY MR. F. VAN MORKHOVEN.

MRS. ANN SPEERS TOLD THE MEETING ABOUT HER IDEA OF ORGANIZING A THREE-DAY WORKSHOP ON MARINE BIOLOGY SOMETIME EARLY NEXT YEAR, SPONSORED BY OUR SOCIETY AND POSSIBLY THE MUSEUM OF NATURAL SCIENCES. SHE ASKED FOR ADDITIONAL SUGGESTIONS FROM THE MEMBERS CONCERNING THIS PROPOSAL. AFTER SOME DISCUSSION THE PRESIDENT SUGGESTED THAT MRS. SPEERS SHOULD RE-INTRODUCE HER PROPOSAL AT ONE OF THE NEXT MEETINGS, AFTER MORE DEFINITE PLANS FOR SUCH A WORKSHOP HAVE BEEN DRAWN UP.

DR. SUTOW SHOWED SOME NEW BOOKS ON SHELLS, RECENTLY ACQUIRED FOR THE SOCIETY'S LIBRARY.

MRS. BOONE INTRODUCED THE MAIN SPEAKERS FOR THE EVENING, MR. AND MRS. HUGH JUNKIN, WHO GAVE A WELL PREPARED AND INFORMATIVE TALK ON THEIR 9 MONTHS LONG SHELLING TRIP THROUGH THE EXUMAS IN THE BAHAMAS. BEAUTIFUL COLOR SLIDES ILLUSTRATED THEIR TALK, AND A LARGE EXHIBIT SHOWING A WIDE VARIETY OF SHELLS

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY TURRIDAE (CONTINUED)

NANNODIELLA MELANITICA DALL, 1885. THIS SPECIES IS QUITE COMMON IN OUR OFF-SHORE WATERS. IT IS RARE IN DRIFT AT PORT ARANSAS, BUT FAIRLY COMMON IN BEACHMATERIAL AT PORT ISABEL. SOME OF OUR MATERIAL WAS IDENTIFIED BY T. L. MCGINTY. MOST BEACH MATERIAL IS WORN AND IN POOR CONDITION.  
FIGURED IN: 3

PREVIOUS REFERENCES: NONE.

LOCALITIES: PORT ARANSAS, PORT ISABEL.

RUBELLATOMA RUBELLA KURTZ AND STIMPSON, 1851. THIS SPECIES IS SOMEWHAT UNCOMMON IN BEACHDRIFT ALONG THE ENTIRE TEXAS COAST, BUT IS A REGULAR CONSTITUENT OF OFFSHORE DREDGE MATERIAL. ONLY DEAD SHELLS ARE KNOWN FROM GALVESTON BUT SOME LIVE SHELLS WERE COLLECTED AT PORT ARANSAS (SPEERS).

FIGURED IN: NO FIGURES AVAILABLE.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, FREEPORT, PORT ARANSAS.

DAPHNELLA MORRA DALL, 1881. A SINGLE SPECIMEN OF THIS SMALL SPECIES WAS TAKEN ON MATAGORDA BEACH (COLL. ODÉ). IT IS WIDESPREAD IN OFFSHORE WATERS BUT APPARENTLY SELDOM REACHES THE SHORE. FRESH OFFSHORE SPECIMENS HAVE A BEAUTIFUL DEEP BROWN COLOR.

FIGURED IN: 1

PREVIOUS REFERENCES: NONE

LOCALITIES: MATAGORDA.

TELECYTHARA FLORIDANA FARGO 1953. A SINGLE WORN SPECIMEN OF THIS SPECIES, DESCRIBED FROM THE FLORIDA PLIOCENE, WAS COLLECTED AT THE WEST END OF THE GALVESTON SEAWALL (COLL. ODÉ). IT MISSES THE PECULIAR NUCLEAR WHORLS CHARACTERISTIC OF THIS GENUS BUT IS EXACTLY SIMILAR TO A LOT OF 9 SPECIMENS OBTAINED OFFSHORE GALVESTON, MOST OF WHICH ARE FRESH. THEY CONFORM IN ALL RESPECTS TO THE ORIGINAL DESCRIPTION AND ESPECIALLY THE NUCLEAR APPARATUS.

FIGURED IN: 7

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON

A FEW MORE SPECIES WILL BE TREATED IN OUR NEXT ISSUE.



FAMILY ARCHITECTONICIDAE

SPIROLAXIS EXQUISITA DALL AND SIMPSON, 1901. A SMALL SPECIMEN OF THIS REMARKABLE LITTLE GASTROPOD WAS COLLECTED BY MR. F. VAN MORKHOVEN FROM BEACH-DRIFT AT SAN LUIS PASS, GALVESTON ISLAND. IT IS, AS FAR AS WE KNOW, THE FIRST ONE EVER COLLECTED ON THE TEXAS BEACH. A PHOTOGRAPH OF THE SPECIMEN BY MR. VAN MORKHOVEN, SHOWS THIS REMARKABLE SHELL, OF WHICH THE WHORLS ARE DETACHED. THE SPECIMEN WAS SLIGHTLY COLORED BY A GREEN DYE TO BRING OUT THE STRUCTURAL DETAIL IN THE PHOTOGRAPH.



SPIROLAXIS EXQUISITA DALL AND SIMPSON  
FROM BEACHDRIFT AT SAN LUIS PASS. SIZE: 1.28 MM.

SOURCES:

- 1901 OMALAXIS EXQUISITA, DALL AND SIMPSON, MOLLUSCS OF PORTO RICO, P. 432, PL. 54, FIG. 12.
- 1961 SPIROLAXIS EXQUISITA DALL AND SIMPSON 1901, ABBOTT AND WARMKE, CARIBBEAN SEASHELLS, P. 64, TEXT FIG. 14H
- 1965 ID, RICE, W. H. AND KORVICKER, L. S., MOLLUSKS FROM THE DEEPER WATERS OF THE NORTHWESTERN CAMPECHE BANK, MEXICO. PUBL. INST. MAR. SCI., UNIV. TEX., VOL. 10, P. 119, PL. 2, FIG. 6.

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MOVIE

ON OCTOBER 27TH, CHANNEL 11 WILL SHOW A MOVIE OF THE LAST DESTROYER TRIP DURING WHICH SHELLS FOR THE HOUSTON MUSEUM OF SCIENCE WERE COLLECTED. CONSULT YOUR LOCAL NEWSPAPER FOR SHOWTIME.

TO THOSE OF OUR CLUB MEMBERS WHO COLLECT SEASHELLS OF THE AMERICAN PACIFIC COAST AND PARTICULARLY FROM THE GULF OF CALIFORNIA, THE NAME PHILIP PEARSALL CARPENTER SHOULD BE FAMILIAR INDEED. NEXT TO BARTSCH AND DALL, CARPENTER IS RESPONSIBLE FOR DESCRIBING THE GREATEST NUMBER OF MARINE MOLLUSCAN SPECIES FROM THIS PART OF THE WORLD. DURING THE PAST SEVERAL YEARS, THERE APPEARS TO HAVE BEEN A CONCERTED EFFORT TO DOCUMENT THE CONTRIBUTIONS OF THIS MOST REMARKABLE PRESBYTERIAN MINISTER (1819-1877). HERE IS A LIST OF PUBLICATIONS RELATING TO CARPENTER.

1. PALMER, K.V.W.: TYPE SPECIMENS OF MARINE MOLLUSCA DESCRIBED BY P.P. CARPENTER FROM THE WEST COAST (SAN DIEGO TO BRITISH COLUMBIA).

GEOLOGICAL SOCIETY OF AMERICA. NEW YORK. 1958. 376 PAGES.

"ILLUSTRATIONS OF MORE THAN 190 TYPES AND OF MANY ORIGINAL SPECIMENS WITH PERTINENT DATA ARE INCLUDED. ONLY 4 OF ABOUT 50 PELECYPOD SPECIES AND ONLY ABOUT ONE-FIFTH OF THE TYPES OF THE GASTROPODS HAVE HAD THE TYPES FIGURED PREVIOUSLY."

2. PALMER, K.V.W.: TYPE SPECIMENS OF MARINE MOLLUSCA DESCRIBED BY P.P. CARPENTER FROM THE WEST COAST OF MEXICO AND PANAMA,

BULLETINS OF AMERICAN PALEONTOLOGY (No. 112), 46:289-408, 1963.

CARPENTER DESCRIBED OVER 126 SPECIES FROM WESTERN MEXICO, LOWER CALIFORNIAN AND WESTERN PANAMIC REGIONS, EXCLUDING THOSE SPECIES MENTIONED IN THE "MAZATLAN CATALOGUE". EIGHTY-FOUR CARPENTER TYPES HAVE BEEN LOCATED; THESE ARE DISCUSSED AND ILLUSTRATED HERE.

3. CARPENTER, P.P.: CATALOGUE OF THE COLLECTION OF MAZATLAN SHELLS IN THE BRITISH MUSEUM. (FACSIMILE REPRINT).

PALEONTOLOGICAL RESEARCH INSTITUTION. ITHACA, N.Y. 1967. 552 PAGES.

THIS IS A REPRODUCTION OF THE TEXT OF THE PUBLICATION DESCRIBING THE REIGEN COLLECTION DONATED BY CARPENTER TO THE BRITISH MUSEUM. CARPENTER "DESCRIBED 255 SPECIES AS NEW BUT ASSIGNED VARIETAL STATUS TO 34 OF THESE. HE IDENTIFIED 333 PREVIOUSLY DESCRIBED SPECIES AND IN ADDITION INCLUDED 113 DIFFERENT FORMS AS INDETERMINATE SPECIES."

4. BRANN, D.C.: ILLUSTRATIONS TO "CATALOGUE OF THE COLLECTION OF MAZATLAN SHELLS" BY PHILIP P. CARPENTER.

PALEONTOLOGICAL RESEARCH INSTITUTION, ITHACA, N.Y. 1966. 111 PAGES.

THE "MAZATLAN CATALOGUE" PUBLISHED BY CARPENTER CONTAINED NO ILLUSTRATIONS. HITHERTO UNPRINTED CAMERA LUCIDA DRAWINGS (60 PLATES) PREPARED BY CARPENTER ARE NOW PUBLISHED IN THEIR ENTIRETY.

.....TO BE CONTINUED

2. THE TEXAN BIOTIC PROVINCE WAS ORIGINALLY DEFINED BY DICE AS A BROAD ECOLOGICAL TRANSITION ZONE, OR ECOTONE, BETWEEN THE FORESTS OF THE AUSTRORIPARIAN AND CAROLINIAN BIOTIC PROVINCES TO THE EASTWARD AND THE DRIER, OPEN GRASSLANDS TO THE WEST. IN CENTRAL TEXAS THE BALCONES ESCARPMENT FORMS AN ABRUPT WESTERN BOUNDARY OF THE PROVINCE, BUT FARTHER NORTH AND SOUTH, WHERE THE ESCARPMENT DISAPPEARS, THE BOUNDARY IS MORE ARBITRARY. IN THE SOUTHWESTERN AREA, BLAIR HAS PLACED THE BOUNDARY ALONG A LINE IN VICTORIA, GOLIAD, AND REFUGIO COUNTIES WHERE THE PEDALFER SOILS OF THE EAST ARE REPLACED BY THE PEDOCALS OF THE WEST.<sup>1</sup> THE AVERAGE YEARLY RAINFALL IN THIS AREA IS LESS THAN 45 IN., BUT MORE THAN 16 IN. LOCAL EXTENSIONS OF THE AUSTRORIPARIAN BIOTA INTO THE TEXAN PROVINCE OCCUR WHERE EDAPHIC CONDITIONS PERMIT, BUT OVER MOST OF THE TEXAN PROVINCE, AT LEAST IN UNDISTURBED AREAS, THE DOMINANT VEGETATION IS WOODED GRASSLAND OF THE SAVANNAH TYPE. THE COUNTIES INCLUDED ARE: BRAZORIA, CALHOUN, FORT BEND, GALVESTON, HARRIS, JACKSON, MATAGORDA, VICTORIA, WALLER, AND WHARTON.

3. THE TAMAULIPAN BIOTIC PROVINCE IN TEXAS IS THE NORTHWARD EXTENSION OF A TYPICALLY MEXICAN BIOTIC UNIT. DICE ORIGINALLY INCLUDED IN IT ONLY THE SOUTHERN TIP OF TEXAS (CAMERON, HIDALGO, STARR AND WILLACY COUNTIES), WHICH BLAIR LATER SEPARATED AS THE MATAMORAN DISTRICT. ACCORDING TO BLAIR, A MORE LOGICAL AND NATURAL BOUNDARY OF THE TAMAULIPAN PROVINCE IN TEXAS IS AT THE BALCONES ESCARPMENT IN THE WEST; WHILE IN THE EAST IT IS A SOMEWHAT INDEFINITE LINE WHERE THE TAMAULIPAN BRUSH AND CACTUS THICKETS PASS GRADUALLY INTO THE PRAIRIES AND SAVANNAHS OF THE TEXAS PROVINCE. THE AVERAGE YEARLY RAINFALL IS LESS THAN 16 IN. AND THE CLIMATE IS "MEGATHERMAL", BEING EXCESSIVELY HOT IN SUMMER AND GENERALLY WARMER THAN IN OTHER PARTS OF THE STATE IN WINTER. MORE THAN ONE-THIRD OF THE AREA COVERED BY THIS REPORT LIES WITHIN THE TAMAULIPAN PROVINCE, IN ARANSAS, BEE, BROOKS, CALHOUN (PART), CAMERON, GOLIAD, HIDALGO, JIM WELLS, KENEDY, KLEBERG, NUECES, REFUGIO, SAN PATRICIO, VICTORIA (PART), AND WILLACY COUNTIES.

THE FOLLOWING PROVINCES ARE NOT REPRESENTED IN THE AREA COVERED BY THE THESIS.

4. THE BALCONIAN BIOTIC PROVINCE OF BLAIR CORRESPONDS TO A PART OF DICE'S COMANCHIAN PROVINCE OF CENTRAL TEXAS AND INCLUDES MOST OF THE HILL COUNTRY AND THE EDWARDS PLATEAU NORTH OF THE BALCONES ESCARPMENT AND WEST OF THE PECOS RIVER. THE CLIMATE IS OF THE SEMI-ARID AND DRY SUB-HUMID TYPE.

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<sup>1</sup> "PEDALFERS" ARE TOPSOILS RELATIVELY POOR IN HUMUS, PRODUCED UNDER SUFFICIENT TREE COVER AND UNDER FAIRLY HUMID CONDITIONS BY NATURAL DECAY OF THE UPPER LAYERS OF THE SUBSOIL, WITH ACCUMULATION OF IRON AND ALUMINUM BENEATH THE TOPSOILS.

"PEDOCALS" ARE TOPSOILS RELATIVELY RICH IN HUMUS, PRODUCED UNDER PRAIRIE COVER AND UNDER MORE ARID CONDITIONS, WITH AN ACCUMULATION OF CALCIUM BENEATH THE TOPSOIL.

5. THE KANSAN BIOTIC PROVINCE OF BLAIR INCLUDES A PART OF DICE'S COMANCHIAN PROVINCE AND TAKES IN THE PLAINS OF THE PANHANDLE AND THE LLANO ESTACADO OF WESTERN TEXAS. THE CLIMATE IS OF THE SEMI-ARID TYPE AND THE AVERAGE TEMPERATURE IN WINTER IS LOWER THAN IN OTHER PARTS OF TEXAS.

6. THE CHIHUAHUA BIOTIC PROVINCE COVERS MOST OF THE TRANS-Pecos AREA OF WEST TEXAS. THIS REGION IS CHARACTERIZED BY PLAINS AT A RATHER HIGH ALTITUDE INTERRUPTED BY SEVERAL MOUNTAIN RANGES, SOME OF WHICH EXCEED 6000 TO 8000 FEET IN HEIGHT. THE CLIMATE IS VERY ARID AND PRODUCES A SEMI-DESERT VEGETATION.

7. THE NAVAHONIAN BIOTIC PROVINCE, DEVELOPED MAINLY IN NEW MEXICO, EXTENDS INTO TEXAS ONLY OVER A VERY SMALL AREA IN THE GUADALUPE MOUNTAINS.

EACH OF THESE MAJOR BIOTIC PROVINCES, WITH THE POSSIBLE EXCEPTION OF THE TEXAN, HAS BOUNDARIES THAT EXTEND FAR BEYOND THE POLITICAL BOUNDARY OF TEXAS. BECAUSE OF ITS SIZE AND LOCATION, THIS STATE HAS BECOME A MEETING GROUND FOR THE CHARACTERISTIC FAUNAS OF THE EAST AND WEST AND THE NORTH AND SOUTH. THE TEXAN PROVINCE, CENTRALLY LOCATED WITHIN THE STATE, HAS BEEN HARDEST TO DEFINE AND HAS BEEN TROUBLESOME TO EVERY ZOOGEOGRAPHER WHO STUDIED THE AREA.

DICE (1943) REFERRED TO THE TEXAN PROVINCE AS A BROAD TRANSITION ZONE, OR ECOTONE, BETWEEN THE MORE EASILY RECOGNIZED PROVINCES OF EITHER SIDE. BLAIR (1950) STATED "RECOGNITION OF THIS TRANSITIONAL AREA AS A BIOTIC PROVINCE REPRESENTS A FAIRLY UNSATISFACTORY DISPOSITION OF THE AREA, BUT THERE SEEMS TO BE NO REASONABLE ALTERNATIVE. THERE ARE NO ENDEMIC SPECIES OF VERTEBRATES. THE OUTSTANDING BIOGEOGRAPHIC PHENOMENON HERE IS THE INTERDIGITATION OF FOREST AND GRASSLAND ASSOCIATIONS".

#### COLLECTION PROCEDURES AND DATA RECORDING

DURING THE YEARS 1956-1961 MANY COLLECTING TRIPS WERE MADE BY THE AUTHOR, OFTEN TOGETHER WITH DR. J. BEQUAERT, ALONG THE TEXAS COAST, AND ALTHOUGH MOST OF THESE TRIPS WERE PRIMARILY FOR OTHER PURPOSES, STOPS FOR COLLECTION OF LAND SNAILS WERE MADE ON EACH OF THEM. EIGHT TRIPS OF THREE DAYS OR MORE WERE MADE TO PORT ISABEL AND THIRTEEN TRIPS OF TWO DAYS OR MORE TO PORT ARANSAS.

TWO TRIPS OF TWO DAYS DURATION WERE MADE TO KINGSVILLE AND ADJOINING AREAS EXPRESSLY FOR LAND SNAIL COLLECTION, AND TWELVE TRIPS OF ONE TO THREE DAYS EACH WERE MADE TO THE "BIG THICKET" AREA OF EAST TEXAS FOR THE SPECIFIC PURPOSE OF DEFINING THIS REGION ECOLOGICALLY. THERE WERE, IN ADDITION, MANY ONE DAY TRIPS IN SEARCH OF LAND SNAILS IN HARRIS AND ADJACENT COUNTIES.

THE DISTRIBUTION MAPS OF THIS REPORT ARE BASED ON THESE PERSONAL COLLECTIONS OF DR. J. BEQUAERT AND THE AUTHOR, AS WELL AS ON SPECIMENS SEEN BY DR. J. BEQUAERT AT THE MUSEUM OF COMPARATIVE ZOOLOGY AT HARVARD, THE ACADEMY OF NATURAL SCIENCES IN PHILADELPHIA, THE UNITED STATES NATIONAL MUSEUM IN WASHINGTON, AND THE CHICAGO MUSEUM OF NATURAL HISTORY.

WHENEVER POSSIBLE, RECORDS ARE BASED ON SPECIMENS COLLECTED ALIVE. FREQUENTLY HOWEVER, COLLECTIONS HAVE BEEN SO SPARSE IN AN AREA THAT IT HAS BEEN NECESSARY TO INCLUDE RECORDS BASED ON DEAD SHELLS COLLECTED IN LITTER AND IN RIVER OR GULF BEACH DRIFT.

DISTRIBUTION AND ECOLOGY OF THE TERRESTRIAL MOLLUSKS  
OF THE TEXAS COASTAL COUNTIES.

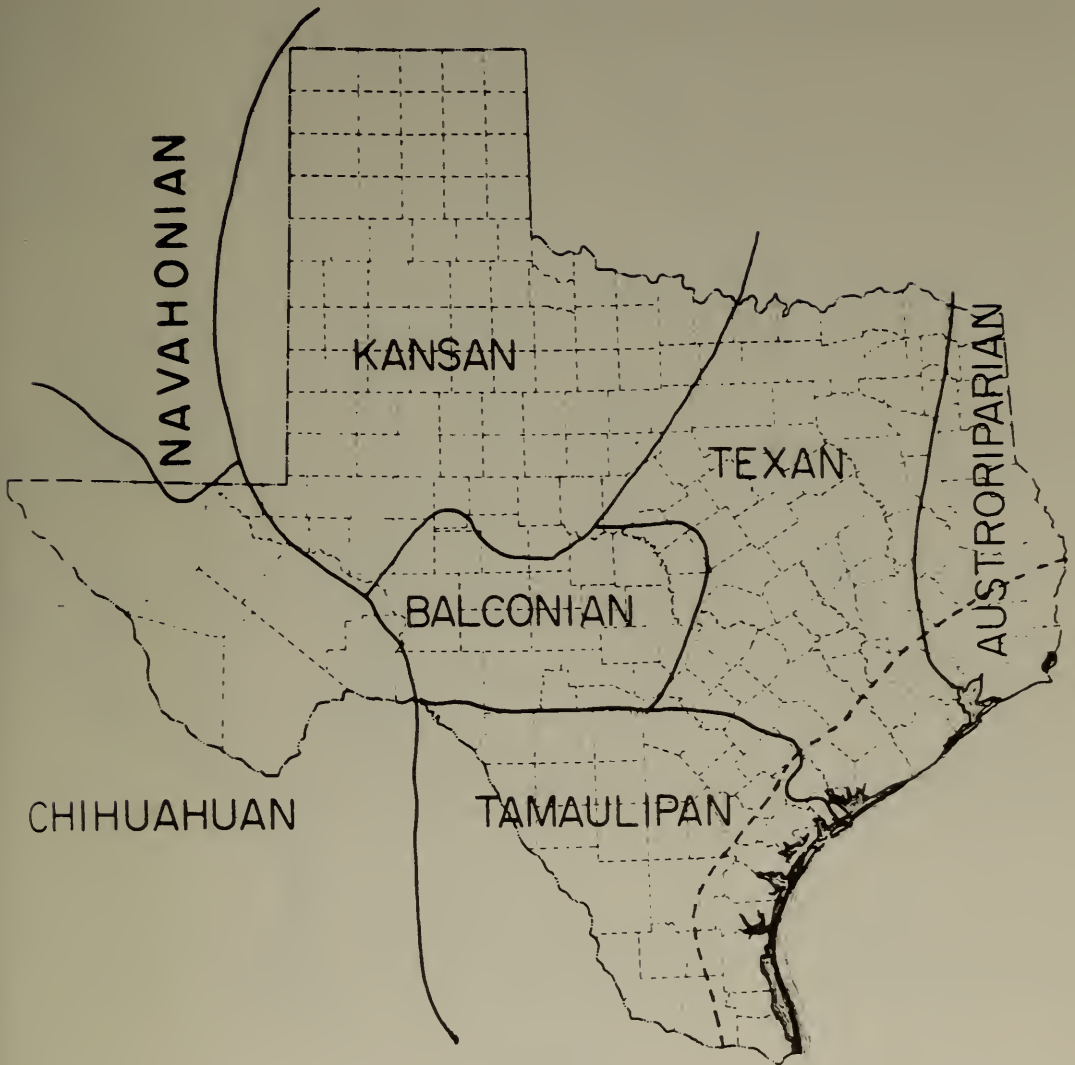


FIGURE 1.

THE BIOTIC PROVINCES OF TEXAS AS PROPOSED BY DICE  
(1943) AND MODIFIED BY BLAIR (1950).

----- BOUNDARY OF TEXAS COASTAL REGION  
(AREA OF PRESENT STUDY)

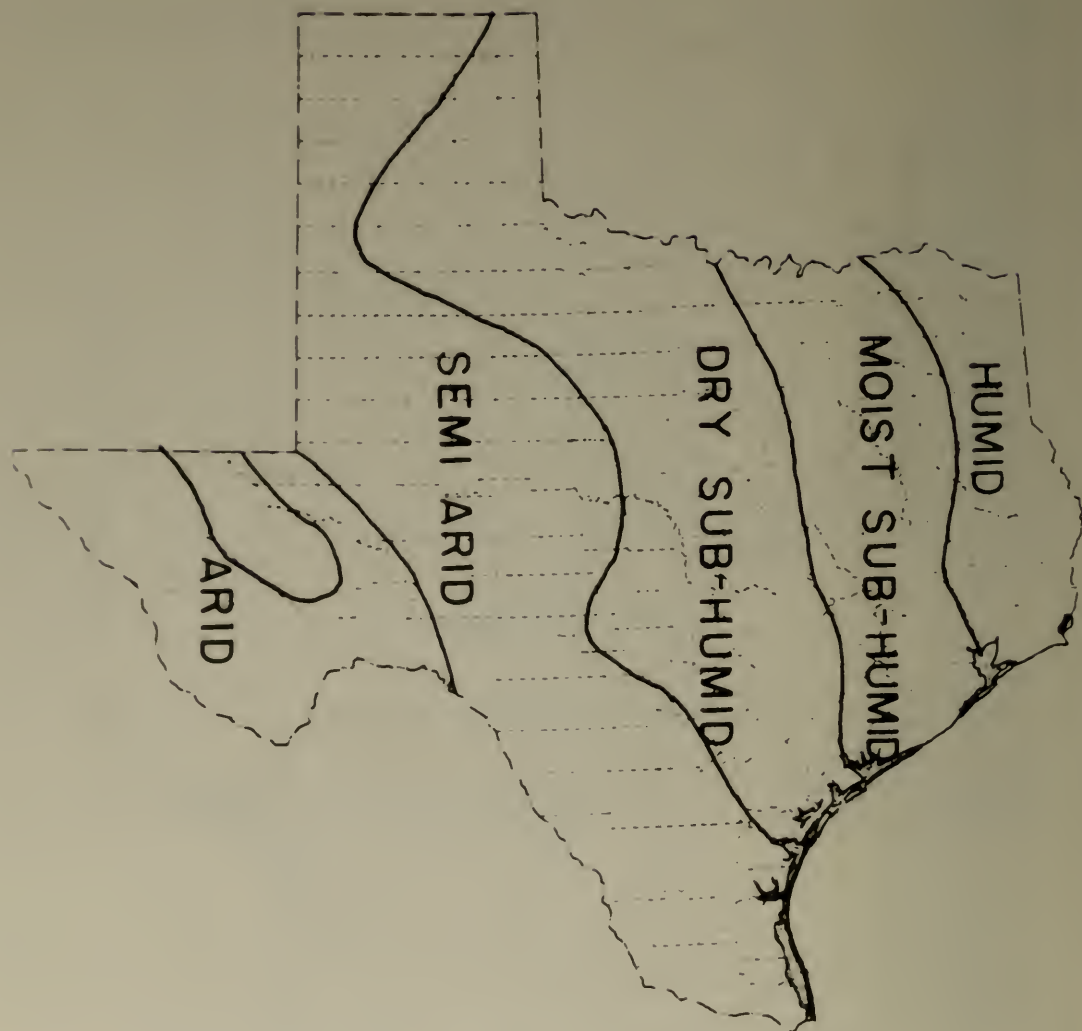


FIGURE 2.

CLIMATIC REGIONS OF TEXAS FROM THORNTHWAITTE (1943).

TO BE CONTINUED.....

BAY AREAS CONTINUE TO BE THREATENED -- TEXAS' BAY AREAS REPRESENT A MICROCOSM OF THE EARTH'S THREATENED ECOLOGY.

THE DELICATE BALANCE AMONG ORGANISMS LIVING IN THE COASTAL ESTUARIES CAN BE UPSET BY A HOST OF OUTSIDE INFLUENCES, AND THE PLIGHT OF THE STATE'S SHALLOW BAYS IS A GRAPHIC EXAMPLE OF MAN'S INTERFERENCE WITH NATURE.

TEXAS PARKS AND WILDLIFE DEPARTMENT BIOLOGISTS HAVE KEPT WATCH OVER THE MAJOR BAYS IN PAST YEARS, RECORDING A PROFUSION OF DATA RANGING FROM SALINITY AND SILTATION TO TIDES AND POLLUTANTS.

SOME OF THE DATA ALREADY ARE FURNISHING VALUABLE INFORMATION. FOR EXAMPLE, IT HAS SHOWN THAT PERIODS OF DROUGHT CAN CAUSE HIGH SALINITIES AND RESULTANT MORTALITY AMONG SHRIMP, FISH, OYSTERS AND OTHER ORGANISMS.

POLLUTION CAN AFFECT ABUNDANCE AND PRODUCTIVITY IN TWO WAYS -- DIRECTLY BY TOXIC EFFECT OR INDIRECTLY BY DECREASING DISSOLVED OXYGEN, CHANGING ACIDITY OR DESTRUCTION OF FOOD AND HABITAT.

THE PRECIOUS NURSERY GROUNDS WHERE AQUATIC SPECIES REPRODUCE ARE VULNERABLE. MARINE FISHERIES BIOLOGIST A. R. MARTINEZ, WHO IS HEADING UP A COASTAL HYDROGRAPHIC STUDY OF THE MAIN BAY AREAS, SAID IN A RECENT REPORT THAT PORTIONS OF INVALUABLE NURSERY GROUNDS HAVE BEEN LOST "IN ALL COASTAL AREAS."

MARTINEZ LISTED SEVERAL EXAMPLES OF NURSERY GROUND DAMAGE IN SOME OF THE MAJOR BAY AREAS DURING THE PAST YEARS:

- IN GALVESTON BAY, 1,200 FEET OF SHORELINE HAVE BEEN BULKHEADED, A MARSH AREA HAS BEEN DRAINED AND A BAYOU PARTIALLY BLOCKED. IN MOSES LAKE, A HURRICANE LEVEE WAS COMPLETED, REPLACING A ONE-MILE NATURAL OPENING WITH A 65-FOOT GATE. WORK HAS STARTED ON A U.S. CORPS OF ENGINEERS PROJECT WHICH WILL TURN SEVERAL SQUARE MILES OF MARSH LAND INTO A FRESH-WATER IMPOUNDMENT.
- IN WEST BAY, APPROXIMATELY 30 ACRES OF SHALLOW NURSERY AREA HAVE BEEN MODIFIED BY A LARGE BASIN AND AN 11,000-FOOT ACCESS CHANNEL. AT WILSON POINT IN JONES LAKE, NATURAL MARSH LAND WAS BULKHEADED AND FILLED FOR A HOUSING DEVELOPMENT.
- MATAGORDA BAY SUFFERED DAMAGE WHEN AN OIL COMPANY DEPOSITED SPOIL IN POWDERHORN LAKE, COVERING SEVERAL GOOD NURSERY GROUNDS.
- IN SAN ANTONIO BAY, SPOIL FROM AN OIL WELL CHANNEL COVERED APPROXIMATELY 100 ACRES OF PRIME NURSERY GROUNDS.
- IN ARANSAS BAY, APPROXIMATELY 364 ACRES HAVE BEEN RUINED BY DREDGING OF THE ROCKPORT-ARANSAS PASS INTRACOASTAL WATERWAY AND SEVERAL OTHER LARGE CHANNELS.
- IN THE CORPUS CHRISTI BAY AREA APPROXIMATELY 30 ACRES OF SHALLOW WATER WERE BULKHEADED AND FILLED TO ENLARGE A CITY RECREATION AREA

CONTINUED ON PAGE 32.....

THE FOLLOWING NEW BOOKS AND PUBLICATIONS HAVE BEEN ADDED TO THE CLUB LIBRARY.

- M. NICKLES: MOLLUSQUES TESTACÉS MARINS DE LA COTE OCCIDENTALE D'AFRIQUE  
MANUELS UEST-AFRICAINS. VOL. II. PAUL LECHEVALIER, EDITEUR. PARIS. 1950. 269 PAGES.

MOLLUSKS OF THE WEST COAST OF AFRICA FROM MOROCCO TO CONGO ARE DESCRIBED (IN FRENCH) AND ILLUSTRATED (464 FIGURES).

- L. H. HYMAN: THE INVERTEBRATES. VOL. VI. MOLLUSCA I.  
MCGRAW-HILL BOOK COMPANY. 1967. 792 PAGES.  
THIS WELL-KNOWN AND WELL-ILLUSTRATED VOLUME DEALS AUTHORITY WITH FOUR CLASSES OF MOLLUSKS: APLACOPHORA, POLYPLACOPHORA, MONOPLACOPHORA AND GASTROPODA. ANATOMY, PHYSIOLOGY AND ECOLOGY ARE STRESSED IN TEXTBOOK DETAIL.

- S. ANGELETTI: CONCHIGLIE DA COLLEZIONE  
ISTITUTO GEOGRAFICO DE AGOSTINI-NOVARAS. ITALY. 1968.  
80 PAGES. (9 1/4 x 12 1/4 INCHES).

THE TEXT IS IN ITALIAN. THE PUBLICATION IS A NICE "PICTURE BOOK" OF SELECTED WORLD SHELLS. A NUMBER OF COLORED PHOTOS OF THE MEDITERRANEAN FAUNA IS INCLUDED.

- P. J. ARREGROS: COQUILLAGES MARINS  
LIBRARIE PAYOT. LAUSANNE. 1966. 64 PAGES.

THIS LITTLE POCKET BOOKLET PROVIDES SOME GOOD COLORED PHOTOGRAPHS OF SEASHELLS OF THE ENGLISH CHANNEL AND MEDITERRANEAN.

- J. H. MACLEAN: MARINE SHELLS OF SOUTHERN CALIFORNIA  
1969. 104 PAGES.

THIS IS A HANDY, AUTHORITY REFERENCE FOR MOLLUSKS OF THE SOUTHERN CALIFORNIA COAST. SUPPLEMENTS ABBOTT.

- G. E. & L. E. BURGHARDT: A COLLECTOR'S GUIDE TO WEST COAST CHITONS  
SAN FRANCISCO AQUARIUM SOCIETY. 1969. 45 PAGES.

A GOOD ATLAS CONTAINING CHECK LIST AND PHOTOGRAPHS OF THE CHITON SPECIES "MOST LIKELY TO BE COLLECTED BY A SHELL COLLECTOR ON THE WEST COAST OF THE UNITED STATES AND CANADA."

- J. T. SMITH: TAXONOMY, DISTRIBUTION, AND PHYLOGENY OF THE CYMATIID GASTROPODS ARGOBUCCINUM, FUSITRITON, MADIARGO AND PRIENE.

THIS IS A SYSTEMATIC REVISION OF SEVERAL COOL WATER CYMATIID GENERA PROVIDING THE BASIS FOR BIOGEOGRAPHIC STUDIES AND A POSSIBLE SCHEME OF PHYLOGENETIC AFFINITIES". "ECOLOGIC AND DISTRIBUTIONAL DATA ARE SUMMARIZED".



## SHELL BEADS AS MONEY

PERHAPS THE BEST KNOWN INDIAN ARTIFACT TO THE AVERAGE PERSON IS "WAMPUM" THE USUAL NAME APPLIED TO THE VARIOUS FORMS OF SHELL BEADS MANUFACTURED BY THE INDIANS AND USED AS A MEDIUM OF EXCHANGE OVER MOST OF THE ATLANTIC SLOPE, AND LATER THROUGH THE MIDWEST AND CENTRAL TRIBAL AREAS.

REFERENCE TO THIS SHELL MONEY IS EXTENSIVE IN THE LITERATURE, BUT WE WILL QUOTE FROM ONLY ONE OR TWO HERE.

THE TERM WAMPUM IS SAID TO BE FROM AN ALGONQUIN WORD SIGNIFYING WHITE, SUCH BEING THE PREVAILING COLOR OF MOST OF THE BEADS. THE ORDINARY WAMPUM BEADS ARE CYLINDRICAL IN SHAPE, VARYING FROM A SIXTH TO A QUARTER OF AN INCH IN LENGTH AND BEING ABOUT AN EIGHTH OF AN INCH IN DIAMETER. THERE WERE TWO MAIN VARIETIES, ONE WHITE AND THE OTHER PURPLE-BLACK. THE MAIN SOURCE OF SHELL WAS THE CLAM, MERCENARIA MERCENARIA. AS MANY OF THESE EXHIBIT PURPLE ON THE LOWER HALF OF THE VALVES, THE SHELL WAS USED FOR BOTH THE WHITE AND THE PURPLE WAMPUM, BUT ALWAYS THE PURPLE WAMPUM WAS WORTH TWICE THE VALUE OF THE WHITE. THESE WERE WROUGHT SMOOTH AS GLASS, AND THE INDIAN TRADERS VALUED THE PURPLE WAMPUM AT EIGHTEEN PENCE PER YARD, AND THE WHITE AT NINE PENCE. TO QUOTE ONE WRITER, "THE INDIANS ALSO MAKE 'PIPES' OF SHELL, (THE COLUMELLA OF THE BUSYCON, CUT AND POLISHED), WHICH ARE EVEN MORE VALUABLE. THEY ALSO MAKE 'RUNTEES' OF THE SAME SHELL, AND GRIND THEM AS SMOOTH AS 'PEAK'," (ANOTHER NAME FOR THE WAMPUM BEADS). "THESE ARE EITHER LARGE, LIKE AN OVAL BEAD AND DRILLED THE LENGTH OF THE OVAL, OR ELSE THEY ARE CIRCULAR AND FLAT, ALMOST AN INCH OVER, AND ONE THIRD OF AN INCH THICK AND DRILLED EDGEWAYS. OF THIS CONCH SHELL THEY ALSO MAKE ROUND TABLETS OF ABOUT FOUR INCHES DIAMETER, WHICH THEY POLISH AS SMOOTH AS THE OTHERS AND SOME THEY ETCH OR ENGRAVE THEREON CIRCLES, STARS, HALF MOONS, OR ANY OTHER FIGURE SUITABLE TO THEIR FANCY. THESE THEY WEAR INSTEAD OF MEDALS AND USE THE PEAK, RUNTEES AND PIPES FOR CORONETS, BRACELETS, BELTS, OR LONG STRINGS HANGING DOWN BEFORE THE BREAST, OR ELSE THEY LACE THEIR GARMENTS WITH THEM AND ADORN THEIR TOMAHAWKS AND EVERY OTHER THING THAT THEY VALUE".

FROM THE ACCOUNTS OF BEVERLY, ANOTHER WRITER, WE LEARN: "THE INDIANS HAD NOTHING WHICH THEY RECKONED RICHES BEFORE THE ENGLISH WENT AMONG THEM EXCEPT PEAK, ROENOKE AND SUCH-LIKE TRIFLES MADE OUT OF 'CUNK' SHELL. THESE PASSED WITH THEM INSTEAD OF GOLD AND SILVER AND SERVED THEM BOTH FOR MONEY AND ORNAMENT. IT WAS THE ENGLISH ALONE THAT TAUGHT THEM FIRST TO PUT A VALUE ON THEIR SKINS AND FURS AND TO MAKE A 'TRADE' OF THEM".

THE AUTHOR, LAWSON WROTE IN 1714: "AN ENGLISHMAN COULD NOT AFFORD TO MAKE SO MUCH OF THIS WAMPUM FOR FIVE OR TEN TIMES THE VALUE, FOR IT IS MADE OUT OF A VAST GREAT SHELL, OF WHICH THE COUNTRY AFFORDS PLENTY; WHERE IT IS GROUND SMALLER THAN THE SMALL END OF A TOBACCO PIPE OR A LARGE WHEAT STRAW. THIS THE INDIANS GRIND ON STONES AND OTHER THINGS UNTIL THEY MAKE IT CURRENT, BUT THE DRILLING IS THE MOST DIFFICULT TO THE ENGLISHMAN, WHICH THE INDIANS MANAGE WITH A NAIL STUCK IN A CANE OR A REED FILLED WITH SAND. THUS THEY ROLL IT CONTINUALLY ON THEIR THIGHS WITH THEIR RIGHT HAND, HOLDING THE BIT OF SHELL WITH THEIR LEFT; SO IN TIME THEY DRILL A HOLE QUITE THROUGH IT WHICH IS A VERY TEDIOUS WORK; BUT ESPECIALLY IN MAKING THEIR ROENOAK, FOUR OF WHICH WILL SCARCE MAKE

ONE LENGTH OF WAMPUM. THE INDIANS ARE A PEOPLE THAT NEVER VALUE THEIR TIME SO THAT THEY CAN AFFORD TO MAKE THEM AND NEVER NEED TO FEAR THE ENGLISH WILL TAKE THE TRADE OUT OF THEIR HANDS. THIS IS THE MONEY WITH WHICH YOU MAY BUY SKINS, FURS, SLAVES OR ANYTHING THE INDIANS HAVE; - - - IT PERSUADES THEM TO DO ANYTHING AND PART WITH EVERYTHING THEY POSSESS, EXCEPT THEIR CHILDREN FOR SLAVES. AS FOR THEIR WIVES, THEY ARE OFTEN SOLD AND THEIR DAUGHTERS VIOLATED FOR THIS SHELL MONEY. WITH THIS THEY BUT OFF MURDERS; AND WHATSOEVER A MAN CAN DO THAT IS ILL, THIS WAMPUM WILL QUIT HIM OF AND MAKE HIM, IN THEIR OPINION, GOOD AND VIRTUOUS, THOUGH NEVER SO BLACK BEFORE".

TO BE CONTINUED. . . .

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. . . .CONTINUED FROM PAGE 29

ALONG THE SHORELINE.

- IN THE UPPER LAGUNA MADRE, ABOUT 10 ACRES OF NURSERY GROUNDS WERE COVERED BY SPOIL FROM AN OIL WELL CHANNEL. MAINTENANCE DREDGING OF THE INTRACOASTAL WATERWAY RESULTED IN DEPOSITION OF SPOIL THAT CLOSED THREE SMALL PASSES BETWEEN SPOIL BANKS WHERE WATER CIRCULATION ALREADY WAS CRITICAL. THESE WERE LATER REOPENED BY THE CORPS OF ENGINEERS.
  
- IN THE LOWER LAGUNA MADRE, DAMAGE TO HABITAT OCCURRED WHEN A LEVEE BEING USED IN REDREDGING THE ARROYO COLORADO BROKE AND BLOCKED OFF AN IMPORTANT NURSERY GROUND AREA NEAR THE ARROYO BED.

THE TEXAS BAYS, THEREFORE, CONTINUE TO BE IMPERILED FROM ALL SIDES. HEAVY RAIN ON THE WATERSHEDS BRINGS TONS OF SILT, PESTICIDES AND OTHER ELEMENTS INTO THE ESTUARIES. DRY PERIODS ALLOW SALINITY TO RISE, ALSO THREATENING THE BALANCE.

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. . . .CONTINUED FROM PAGE 21

COLLECTED DURING THIS TRIP WAS LAID OUT FOR ALL MEMBERS TO ADMIRE. THE COLLECTION INCLUDED MATERIAL FOUND IN THE BAHAMAS BY THE MUNDY, KOLIUS AND GOODWIN FAMILIES, WHO ALSO CONTRIBUTED ADDITIONAL COLOR SLIDES.

LLOYD MEISTER AND DOUG REYNOLDS SHOWED A NUMBER OF COLOR SLIDES OF THE LARGER TEXAS GULF SHELLS, TAKEN BY THEM FOR THE SURVEY.

#### FIELD TRIP SCHEDULE

NOVEMBER 1ST - MEET 9:00 A.M. AT HIGH ISLAND FISHING PIER. WE WILL GO EAST ALONG THE BEACH.

DECEMBER 13TH - MEET AT GALVESTON END OF SAN LUIS PASS BRIDGE ON BEACH. SHELLING ON THE MUDFLATS.

LEADERS WILL BE ANNOUNCED AT OCTOBER MEETING.

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# CONCHOLOGIST

VOLUME VII, No. 4

NOVEMBER 1970

## NOTES & NEWS

Division of Mollusks  
Sectional Library

NOTICE! CHANGE IN NOVEMBER MEETING DATE!!

BECAUSE OF THE THANKSGIVING DAY HOLIDAY, IT IS CUSTOMARY FOR THE SOCIETY TO HAVE THE NOVEMBER MEETING A WEEK EARLIER. DR. W. W. SUTOW WILL DISCUSS THE "GROUND RULES" AND METHODS OF EXCHANGING SHELLS WITH OTHER COLLECTORS AROUND THE WORLD. DON SCHAEFER HAS OFFERED TO SHOW THE SLIDES HE MADE AT LAST YEAR'S SHOW AT SHARPSTOWN MALL. THE MEETING WILL BE HELD WEDNESDAY, NOVEMBER 18, AT 8 P.M. AT THE HOUSTON MUSEUM OF NATURAL SCIENCE.

THERE WILL BE TABLE SPACE FOR SHELLS WHICH MEMBERS WISH TO EXCHANGE. IT IS SUGGESTED THAT EACH SHELL OR PAIR OF SHELLS TO BE OFFERED FOR EXCHANGE BE PACKAGED SEPARATELY, WITH A COMPLETE DATA SLIP ENCLOSED. SHELLS NEED NOT BE RARE ONES; YOU MAY HAVE SHELLS BROUGHT BACK FROM VACATIONS THAT ARE SPARES TO YOUR COLLECTION BUT NOT TO COLLECTIONS OF OTHER MEMBERS.

THERE WILL BE NO MEETING IN DECEMBER!!

REPORT OCTOBER MEETING

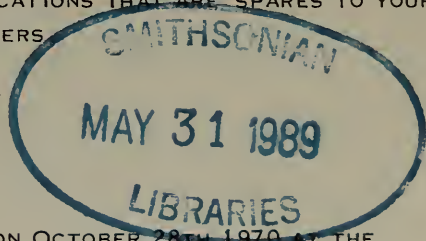
THE MONTHLY MEETING OF THE SOCIETY TOOK PLACE ON OCTOBER 28TH 1970 AT THE MUSEUM OF NATURAL SCIENCE. THE MEETING, ATTENDED BY ABOUT 30 MEMBERS AND 3 GUESTS, WAS CALLED TO ORDER AT 8 P.M. BY DR. HELMER ODÉ, PRESIDENT.

DR. SUTOW, OF THE LIBRARY COMMITTEE, REPORTED THAT THE LIBRARY HAS REACHED A STAGE WHERE IT IS NEARLY COMPLETE. HE SHOWED SOME NEW BOOKS RECENTLY ADDED TO THE LIBRARY.

MR. LLOYD MEISTER INFORMED THE MEETING THAT THE SHOWING OF THE MOVIE OF THE LAST DESTROYER TRIP WHICH COLLECTED SHELLS FOR THE MUSEUM HAS NOW BEEN RE-SCHEDULED FOR JANUARY 7, 1971, AT 7 P.M. ON LOCAL CHANNEL 11.

MRS. CONNIE BOONE TOLD THE MEETING THAT SHE HAD RECEIVED NOTICE OF TENTATIVE PLANS FOR A TEXAS SHELL CLUBS CONVENTION TO BE HELD AT SOUTH PADRE ISLAND SOMETIME NEXT SPRING. SHE ALSO PRESENTED A MOTION TO DONATE \$100. TO THE HOUSTON MUSEUM OF NATURAL SCIENCE IN RECOGNITION OF ITS GENEROUS ASSISTANCE TO THE SOCIETY BY PROVIDING ITS FACILITIES FOR OUR MONTHLY MEETINGS. THIS MOTION WAS SECONDED BY MRS. VAN ERP AND WAS APPROVED UNANIMOUSLY.

DR. ODÉ APPOINTED MRS. CLARICE VAN ERP AS CHAIRMAN OF A NEW COMMITTEE TO STUDY THE POSSIBILITIES OF HOLDING THE 3-DAY WORKSHOP ON MARINE BIOLOGY, AS SUGGESTED BY MRS. ANNE SPEERS AT THE SEPTEMBER MEETING.



CONTINUED ON PAGE 44.....

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY TURRIDAE (CONTINUED)

CRASSISPIRA OSTREARUM STEARNS, 1872. THIS RARE SPECIES IS OCCASIONALLY OBTAINED FROM SPOILMATERIAL AROUND PORT ARANSAS AND PORT ISABEL. IT ARE PROBABLY PLEISTOCENE FOSSILS. ONE LIVE SPECIMEN HAS BEEN REPORTED FROM PORT ISABEL. BUT THE DETERMINATION IS IN SOME DOUBT.  
FIGURED IN: 1, 5, 6, 7  
PREVIOUS REFERENCES: 12  
LOCALITIES: GALVESTON (FRAGMENT, COLL. ODÉ), PORT ARANSAS, PORT ISABEL.

CRASSISPIRA FUSCESCENS REEVE, 1843. TAKEN ALIVE BY DIVERS FROM THE 7 1/2 FATHOM REEF, ABOUT 1 1/2 MILES OFFSHORE FROM THE MANSFIELD CUT AREA. ALSO COLLECTED ALIVE FROM THE PORT ARANSAS JETTY (SPEERS). THIS SPECIES IS ALSO TAKEN ALIVE OFFSHORE IN THE GALVESTON AREA.  
FIGURED IN: 1, 3, 6  
PREVIOUS REFERENCES: 11, HARRY, 1967.  
LOCALITIES: PORT ARANSAS

CRASSISPIRA LEUCOCYMA DALL, 1883. TAKEN ALIVE BY DIVERS FROM THE 7 1/2 FATHOM REEF NEAR THE MANSFIELD CUT. ALSO SEVERAL SHELLS, ALL WITH HEAVY INCRUSTATIONS OF ALGAE AND OCCUPIED BY HERMIT CRABS, COLLECTED ON THE BEACH FROM SOUTH PADRE ISLAND ALONG THE BROWNSVILLE SHIP CHANNEL, WHERE THEY PERHAPS WERE DEPOSITED BY SHRIMPERS (SPEERS).  
FIGURED IN: 1, 3, 4, 6  
PREVIOUS REFERENCES: 23  
LOCALITIES: PORT ARANSAS, PORT ISABEL.

MONILISPIRA MONILIS BARTSCH AND REHDER, 1939. A SINGLE WORN SPECIMEN OF THIS NOT TOO UNCOMMON OFFSHORE SPECIES WAS COLLECTED AT SARGENT (ODÉ). SO FAR IT IS OUR ONLY RECORD FROM THE BEACH.  
FIGURED IN: 4  
PREVIOUS REFERENCES: 11  
LOCALITIES: SARGENT BEACH.

CLATHRODRILLIA ALBINODATA REEVE, 1845. ONE SPECIMEN WAS COLLECTED ALIVE BY DIVERS ON THE 7 1/2 FATHOM REEF NEAR THE MANSFIELD CUT (SPEERS).

FIGURED IN: 3

PREVIOUS REFERENCES: NONE

LOCALITIES: OFFSHORE PADRE ISLAND.

ITHYCYTHARA SP. INDET. SEVERAL SPECIMENS OF THIS INTERESTING GENUS OCCUR OFFSHORE GALVESTON. A FEW YEARS AGO, A SINGLE SPECIMEN WAS COLLECTED FROM DRIFT AT THE GALVESTON SEAWALL (ODÉ). ANOTHER 4 SPECIMENS - ONLY ONE IN FRESH CONDITION - WERE COLLECTED ON BOCA CHICA BEACH (SPEERS).

FIGURED IN: NOT AVAILABLE.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, BOCA CHICA.

WE HAVE FOUND SOME MATERIAL WHICH HAS NOT YET BEEN IDENTIFIED WITH CERTAINTY. IT IS POSSIBLE THAT AMONG THIS MATERIAL (COLL. SPEERS) THE FOLLOWING TWO SPECIES ARE PRESENT.

CRYOTURRIS SERTA FARGO, 1953. A SINGLE SPECIMEN WAS TAKEN FROM A ROLL OF SEAWHIP ON BOCA CHICA BEACH (SPEERS). WE ARE NOT QUITE CERTAIN ABOUT THIS IDENTIFICATION. ONE AND PROBABLY MORE SPECIES OF THIS GENUS OCCUR IN OFFSHORE GALVESTON WATERS. THE MOST COMMON OF THESE IS MORE LIKE C. SERTA THAN THE RECENT C. FARGOI MCGINTY, WHICH IS LARGER AND FATTER THAN THE MATERIAL KNOWN TO US.

FIGURED IN: 7

PREVIOUS REFERENCES: NONE

LOCALITIES: BOCA CHICA

GRANOTURRIS PADOLINA FARGO, 1953. TWO SPECIMENS ARE KNOWN TO US. ONE COMES FROM A SPOIL AREA NEAR THE PORT ARANSAS FERRY (SPEERS). THOUGH IN GOOD CONDITION IT COULD BE A FOSSIL SPECIMEN. THE OTHER LOOKS RATHER FRESH AND WAS COLLECTED ON THE BEACH OF MUSTANG ISLAND (ODÉ).

FIGURED IN: 7

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS, MUSTANG ISLAND.

FAMILY CYCLOSTREMELLIDAE. A FAMILY OF EXTREMELY SMALL GASTROPODS, SPECIALLY ERCTED FOR THE FOLLOWING SINGLE SPECIES.

CYCLOSTREMELLA HUMILIS BUSH, 1897. WE HAVE IN VOL. 5, PAGES 38, 39 DISCUSSED AND FIGURED THIS SPECIES. FOR COMPLETENESS, WE LIST IT AGAIN IN THIS COLUMN. IT IS COMMON IN BEACHDRIFT AT GALVESTON AND HAS BEEN FOUND ALONG THE ENTIRE TEXAS COAST. MRS. C. BOONE HAS COLLECTED SEVERAL LIVE SPECIMENS ON LIVE TUBICULOUS WORMS WASHED UP ON THE BEACH OF GALVESTON ISLAND.

FIGURED IN: TEXAS CONCHOLOGIST, VOL. 5, PAGE 38.

PREVIOUS REFERENCES: SEE TEX. CONCH., VOL. 5, PAGE 39.

LOCALITIES: IN BEACHDRIFT ALONG THE ENTIRE TEXAS COAST.

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HERE IS THE CONTINUATION OF LAST MONTH'S LISTING OF RECENT PUBLICATIONS RELATING TO THE CONTRIBUTIONS OF P. P. CARPENTER TO THE KNOWLEDGE ABOUT THE MOLLUSCAN FAUNA OF THE AMERICAN PACIFIC COAST, FROM PANAMA TO BRITISH COLUMBIA.

5. KEEN, A. M.: "WEST AMERICAN MOLLUSK TYPES AT THE BRITISH MUSEUM (NATURAL HISTORY). IV. CARPENTER'S MAZATLAN COLLECTION."

VELIGER, 10:389-439, 1968.

THE CARPENTER PLATES (SHOWN IN BRANN'S PUBLICATION) DID NOT INCLUDE FIGURES OF LARGER SHELLS "OF WHICH THERE WERE NEARLY A HUNDRED SPECIES". KEEN NOW PRESENTS DRAWINGS AND PHOTOGRAPHS OF "VIRTUALLY ALL OF THE NON-MICROSCOPIC TYPES".

6. COAN, E. V.: "A BIBLIOGRAPHY OF THE BIOLOGICAL WRITINGS OF PHILIP PEAR-SALL CARPENTER".

VELIGER, 12:222-227, OCTOBER, 1969.

THIS LIST OF PUBLICATIONS BY P. P. CARPENTER HAS BEEN MADE AS COMPLETE AS POSSIBLE. ALSO INCLUDED ARE REFERENCES TO SELECTED PAPERS ABOUT CARPENTER AND HIS SPECIMENS. THE BIBLIOGRAPHY ALSO LISTS COLLATIONS OF BOOKS AND JOURNALS CONTAINING CARPENTER'S PAPERS.

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P. P. CARPENTER APPARENTLY DEVELOPED IN HIS EARLY TEENS A DEEP AND LASTING INTEREST IN SHELLS WHILE ARRANGING CABINETS OF SHELLS AND FOSSILS AT THE BRISTOL INSTITUTION. HE CAME TO KNOW MANY OF THE CONCHOLOGISTS OF HIS TIME. HE TRAINED FOR THE MINISTRY AND WAS ORDAINED IN 1841. HE CARRIED ON HIS RELIGIOUS ACTIVITIES AT WARRINGTON FROM 1846 TO 1858.

IT WILL SURPRISE MANY TO LEARN THAT CARPENTER NEVER VISITED THE WEST COAST OF NORTH AMERICA AND COLLECTED NONE OF THE SHELLS HE DESCRIBED FROM THAT AREA. IN 1851 HE AND HIS BROTHER-IN-LAW BOUGHT A HUGE COLLECTION OF SHELLS FROM FREDERICK REIGEN. REIGEN HAD PUT TOGETHER THIS COLLECTION AT MAZATLAN ON THE WEST COAST OF MEXICO.

AFTER CAREFULLY STUDYING AND CLASSIFYING THE SHELLS, CARPENTER PRESENTED ABOUT 8873 SPECIMENS OF MOLLUSKS AND RELATED MATERIAL TO THE BRITISH MUSEUM (NATURAL HISTORY) IN 1860. CARPENTER FIRST CAME TO AMERICA IN 1858 WHEN HE BROUGHT A PORTION OF THE DUPLICATES FROM THE REIGEN MAZATLAN COLLECTION TO THE STATE CABINET OF NATURAL HISTORY (MUSEUM) AT ALBANY, NEW YORK. HE WENT BACK TO WARRINGTON IN 1860, WHERE HE WORKED FOR 5 YEARS ON "COLLECTIONS WHICH WERE SENT FROM THE SMITHSONIAN, LARGE COLLECTIONS HE HAD MADE IN AMERICA FOR THE WARRINGTON MUSEUM, AND HIS OWN".

CARPENTER MOVED TO MONTREAL IN 1865 WHERE HE STAYED UNTIL HIS DEATH IN 1877. HE DONATED THE EXTENSIVE "CARPENTER COLLECTION" TO THE REDPATH MUSEUM, MCGILL UNIVERSITY.

IN JUSTIFICATION FOR USING RECORDS BASED ON RIVER DRIFT SHELLS , IN EACH CASE THE LARGE NUMBER AND THE CONDITION OF THE SHELLS WOULD IMPLY THAT THEY HAD NOT BEEN TRANSPORTED ANY GREAT DISTANCE . TO SUBSTANTIATE THE PROBABILITY THAT MOST OF THE DEAD SHELLS FOUND COMMONLY IN DRIFT ARE NOT TRANSPORTED GREAT DISTANCES , THE FOLLOWING OBSERVATIONS ARE REGARDED AS SIGNIFICANT :

1. POLYGYRA DORFEUILLIANA IS FOUND ALIVE AND IN LARGE NUMBERS IN THE VICINITY OF DALLAS , AS WELL AS DEAD IN THE DRIFT ON THE UPPER REACHES OF THE TRINITY RIVER NEARBY ; BUT ONLY VERY FEW SPECIMENS WERE TAKEN FROM THE CONSIDERABLE QUANTITY OF BEACH DRIFT THAT HAS BEEN EXAMINED FROM TRINITY BAY AND GALVESTON ISLAND . IN CONTRAST TO THIS , THE BEACH DRIFT ON GALVESTON ISLAND IS SOMETIMES WHITE WITH THE COUNTLESS NUMBERS OF DEAD SNAILS OF OTHER SPECIES OF LAND SNAILS KNOWN TO LIVE NEARBY .

2. MESODON ROEMERI IS SIMILARLY KNOWN TO LIVE IN A WIDESPREAD AREA OF SOUTH CENTRAL TEXAS ALONG THE BRAZOS AND COLORADO RIVERS , AND IT IS COMMONLY FOUND THERE IN THE DRIFT OF THESE RIVERS AS FAR DOWN STREAM AS SEALY IN AUSTIN COUNTY AND COLUMBUS IN COLORADO COUNTY . NEVER , HOWEVER , HAS IT BEEN TAKEN FROM THE DRIFT CARRIED INTO THE GULF AND THERE CONCENTRATED ON THE BEACHES , NOR IN DRIFTS THROWN OUT ON THE LOWER REACHES OF THE RIVERS IN THE COASTAL COUNTIES .

3. SEVERAL SPECIES OF HOLOSPIRA OCCUR ABUNDANTLY IN THE DRIER REGIONS OF SOUTHWEST TEXAS ALONG THE RIO GRANDE , PECOS , NUECES , GUADALUPE , AND DEVIL'S RIVERS , BUT ON ONLY THREE OCCASIONS HAVE ISOLATED SPECIMENS OF HOLOSPIRA ROEMERI BEEN REPORTED FROM BEACH DRIFT ON THE GULF COAST CLOSE TO THE MOUTH OF THE RIO GRANDE . (L. HUBRICH , 1960) .

IN VIEW OF THESE CIRCUMSTANCES , AND BECAUSE IN SOME CASES THE ONLY SIGNIFICANT COLLECTIONS OF LAND SNAILS MADE IN MANY OF THE SOUTH TEXAS COUNTIES WERE BASED ON BEACH DRIFT , IT HAS BEEN DEEMED ADVISABLE TO USE SUCH RECORDS IN ATTEMPTING TO DETERMINE THE ACTUAL RANGE OF EACH SPECIES . IN EACH CASE WHERE THE PRESENCE OF A SPECIES WITHIN A COUNTY IS BASED ON DEAD SHELLS , THE RECORD IS ACCEPTED ONLY IF THE SHELLS ARE PRESENT IN LARGE NUMBERS AND IN SEEMINGLY FRESH CONDITION , WHILE THE SPECIES IS KNOWN FROM OTHER SOURCES TO LIVE NEARBY .

#### SYSTEMATIC TREATMENT OF SPECIES

THE PRESENT INVENTORY OF THE LAND MOLLUSKS OF THE TEXAS COASTAL COUNTIES INCLUDES 49 NATIVE SPECIES AND 5 RECOGNIZABLE SUBSPECIES , THE ONLY ONES THAT CAN BE ACCEPTED AS LIVING NOWADAYS IS THE AREA . THE INDIVIDUAL ACCOUNTS OF THEIR DISTRIBUTION BY COUNTIES IN THE STATE AS A WHOLE AND THE ACCOMPANYING MAPS ARE BASED ON TWO DISTINCT GROUPS OF DATA .

THE SECTION CALLED "SPECIMENS EXAMINED" LISTS ALL COUNTIES WITH RECORDS BASED ON IDENTIFICATIONS OF SPECIMENS BY DR. J. BEQUAERT , EITHER FROM COLLECTIONS MADE BY THE AUTHOR , OFTEN IN COLLABORATION WITH DR. BEQUAERT , OR FROM OTHER SOURCES (AS MENTIONED IN CHAPTER III) . THE COUNTY RECORDS OF THIS GROUP ARE SHOWN ON THE MAP AS SOLID BLACK CIRCLES .

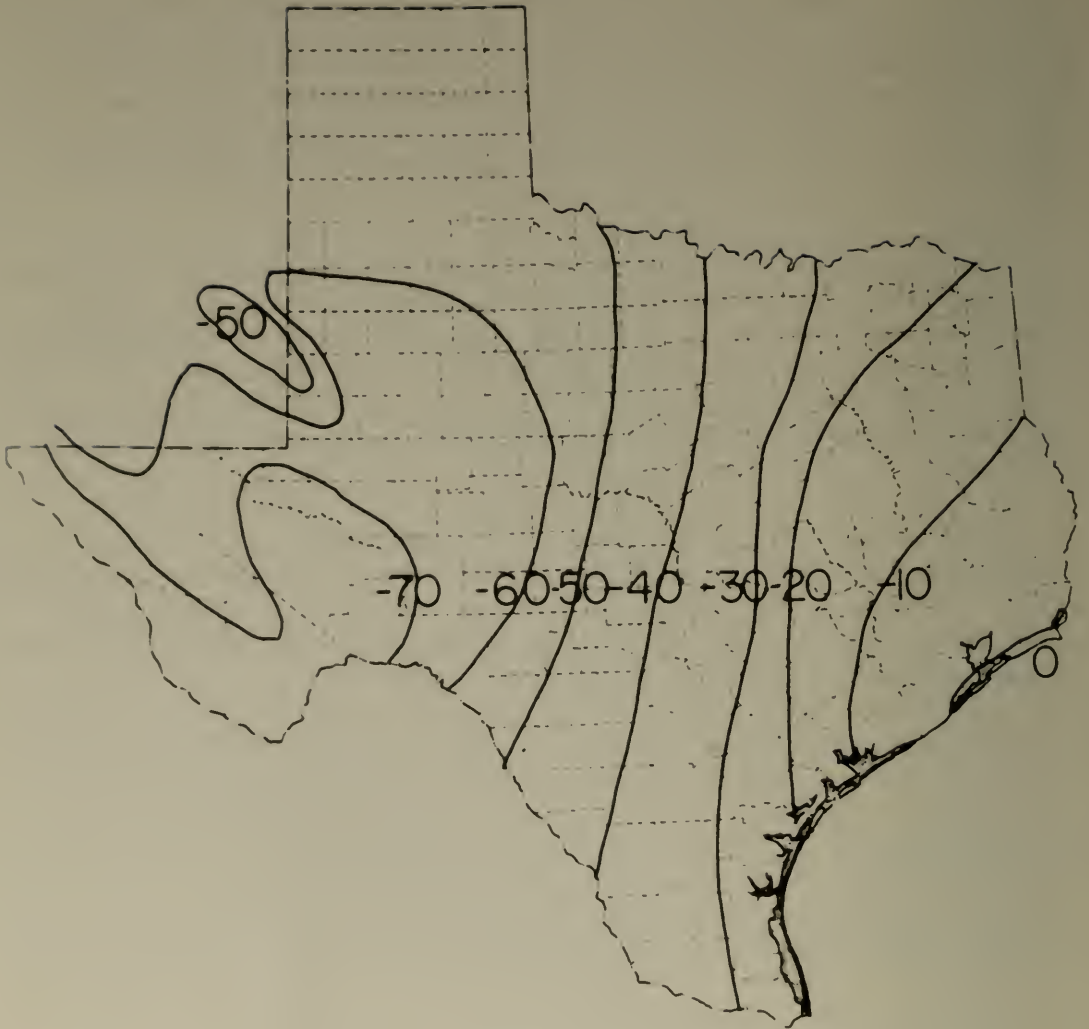


FIGURE 3.

PRECIPITATION MINUS EVAPORATION  
U. S. DEPT. OF COMMERCE CLIMATOLOGICAL DATA  
TEXAS 1956.



THE SECTIONS CALLED "PREVIOUS PUBLISHED RECORDS" INCLUDES ONLY COUNTIES WITH RECORDS TAKEN FROM THE LITERATURE AND WHOSE IDENTIFICATIONS COULD NOT BE CONFIRMED BY DR. BEQUAERT'S EXAMINATION OF SPECIMENS. THE COUNTY RECORDS OF THIS GROUP ARE SHOWN ON THE MAPS AS OPEN CIRCLES.

IN ADDITION TO THE RECORDS FROM THE AREA COVERED BY THIS THESIS, THE MAPS INCLUDE THE KNOWN RANGE OF EACH FORM THROUGHOUT TEXAS, IN ORDER TO PUT THE REGIONAL OCCURRENCE IN THE PROPER PERSPECTIVE AND MAKE IT MORE MEANINGFUL. THIS WAS MADE POSSIBLE BY DR. BEQUAERT'S CONTRIBUTING THE STATEWIDE INFORMATION WHICH HE GATHERED FROM COLLECTIONS AND LITERATURE SINCE 1956.

THE REFERENCES UNDER EACH FORM ARE AS A RULE RESTRICTED TO THE ORIGINAL DESCRIPTION AND ITS AUTHOR, AND TO PILSBRY'S RECENT COMPREHENSIVE "LAND MOLLUSCA OF NORTH AMERICA" (1939 TO 1948). EXCEPTIONALLY A FEW REFERENCES TO SYNONYMS HAVE BEEN ADDED, WHEN THEY SEEMED INDISPENSABLE FOR THE AIMS OF THIS INVESTIGATION. BRIEF REMARKS ON RELATIVE ABUNDANCES OR ECOLOGY FOLLOW. MENTION IS ALSO MADE OF THE KNOWN OCCURRENCES IN THE HOUSTON AREA.

ACCORDING TO DR. BEQUAERT (PERSONAL COMMUNICATION), ABOUT 85 NATIVE SPECIES (WITH 20 RECOGNIZABLE SUBSPECIES), ARE DEFINITELY KNOWN TO LIVE AT PRESENT IN TEXAS. IT MAY BE OF SOME INTEREST THAT OVER HALF OF THIS NUMBER HAVE BEEN OBSERVED IN THE GULF COAST COUNTIES, AND THAT THE MAJORITY OF THESE ARE FOUND WITHIN THE HOUSTON CITY LIMITS.

COLLECTION DATES (BY MONTH AND DAY) HAVE BEEN OMITTED FOR THE FOLLOWING REASONS. MOST OF THE LOST ON WHICH THE COUNTY RECORDS ARE BASED WERE NOT PROVIDED WITH SUCH DATA. ACCORDING TO DR. BEQUAERT (PERSONAL COMMUNICATION), SUCH DATES ARE OF NO PARTICULAR SIGNIFICANCE FOR TERRESTRIAL MOLLUSKS IN TEXAS. THE CHIEF ENVIRONMENTAL FACTORS REGULATING THE DISTRIBUTION OF THESE SNAILS ARE THE NATURE OF THE SOIL, THE TYPE OF VEGETATION, THE RELATIVE HUMIDITY AND THE TEMPERATURE. IN TEXAS IN GENERAL, AND PARTICULARLY IN THE COASTAL COUNTIES, THESE FACTORS SHOW TOO LITTLE REGULAR SEASONAL VARIATION TO INFLUENCE THE COLLECTING OF SNAILS. THE MOST PRODUCTIVE COLLECTIONS PER UNIT OF TIME WERE MADE, NOT ANY PARTICULAR SEASON, BUT FOLLOWING RAIN OR EARLY IN THE MORNING BEFORE THE DEW WAS DRY, AND WHEN THE WEATHER WAS NEITHER TOO COLD NOR TOO HOT. THE AUTHOR HAS COLLECTED WITH EQUAL SUCCESS AT ALL TIMES OF THE YEAR, PROVIDED THERE WAS SUFFICIENT MOISTURE AND SHADE TO PERMIT THE MOLLUSKS TO MOVE ABOUT. MOREOVER, EVEN DURING THE COLDEST OR HOTTEST DAYS LIVING SNAILS MAY BE FOUND RESTING UNDER SHELTER, SUCH AS LITTER BENEATH DENSE VEGETATION, UNDER BARK OF DEAD TREES, UNDER STONES, ETC. RIVER AND BEACH DRIFT TOO MAY YIELD DEAD SNAILS AT ANY SEASON, WHENEVER FLOODS OR HIGH TIDES WASH UP DRIFTING TRASH.

IN ADDITION TO THE NATIVE LIVING SNAILS DISCUSSED IN THIS CHAPTER, OTHER SNAILS MAY BE FOUND OCCASIONALLY IN THE AREA, AS SOME OF THESE ARE BY NO MEANS RARE, PARTICULARLY WITHIN THE HOUSTON CITY LIMITS, THEY ARE APT TO CONFUSE THE STUDENT, WHO MIGHT MISTAKE THEM FOR MEMBERS OF THE NATIVE FAUNA. FOR THIS REASON THREE LISTS HAVE BEEN ADDED TO THE APPENDIX TO THE MAIN LIST OF STRICTLY NATIVE FORMS. THESE LISTS ARE: (A) MOLLUSKS INTRODUCED BY MAN WITHIN HISTORIC TIMES AND NOW FOUND ALIVE IN THE AREA. (B) MOLLUSKS THAT ARE NOW EXTINCT IN THE AREA, ALTHOUGH THEIR DEAD SHELLS ARE FOUND OCCASIONALLY WASHED UP FROM PLEISTOCENE DEPOSITS. (C) MOLLUSKS FOUND DEAD ONLY IN BEACH DRIFT WASHED UP BY THE SEA FROM BEYOND THE BOUNDARIES OF TEXAS.

## ANALYSIS OF RANGE DATA

CAREFUL REVIEW OF THE RANGE LIMITS OF LAND SNAILS AS THEY OCCUR IN THE COASTAL PLAIN OF TEXAS REVEALS A NUMBER OF PATTERNS OF SIMILARITY. SEVERAL SPECIES WHICH ARE CHARACTERISTIC OF THE AUSTRORIPARIAN PROVINCE REACH THEIR WESTERN LIMIT IN THE "BIG THICKET" AREA EAST OF THE TRINITY RIVER, WHILE FOR A SOMEWHAT LARGER NUMBER THE RANGE EXTENDS FARTHER WEST INTO HARRIS COUNTY.

IF THE RANGE OF THE SPECIES CONTINUES SOUTHWARD BEYOND HARRIS COUNTY, THEN IN MOST CASES, IT EXTENDS AT LEAST AS FAR AS THE VICINITY OF CORPUS CHRISTI. HERE ARE TERMINATED THE RANGES OF THE LARGEST NUMBER OF SPECIES FOUND LIVING IN THE EASTERN PART OF THE COASTAL PLAIN.

A FEW SPECIES, ALONG THE COASTAL PORTIONS OF THEIR RANGES, SEEM TO BE RESTRICTED TO THE AREA BETWEEN GALVESTON BAY AND CORPUS CHRISTI BAY. THESE MIGHT REPRESENT ENDEMIC SPECIES FOR THE TEXAN PROVINCE, BUT THEY ARE ALMOST ALL SMALL AND UNCOMMON, AND WHEN MORE COMPLETE COLLECTIONS ARE MADE, IT MAY BE FOUND THAT THEY ALSO OCCUR IN ADJOINING PROVINCES.

SOME OF THE MEXICAN SPECIES OF THE TAMAULIPAN PROVINCE ARE KNOWN PRESENTLY ONLY FROM THE SOUTHERN TIP OF TEXAS. THERE WOULD THUS SEEM TO BE AN AREA FROM THE RIO GRANDE TO CORPUS CHRISTI THAT IS PARTICULARLY POOR IN LAND SNAILS. SUCH A CONDITION MAY EXIST, BUT THERE IS ALSO A GOOD LIKELIHOOD THAT THIS GAP ACTUALLY REPRESENTS ONLY A SCARCITY OF COLLECTIONS AT THE PROPER TIME.

THE FOREGOING GENERAL STATEMENTS ARE PRESENTED GRAPHICALLY IN TABLES 1-5. FROM THESE TABLES IT CAN BE SEEN THAT THE AUSTRORIPARIAN PROVINCE IN EAST TEXAS IS A REGION OF FAUNAL UNIFORMITY AS FAR WEST AS HARRIS COUNTY WHERE MANY SPECIES TERMINATE THEIR RANGES. FROM GALVESTON BAY TO CORPUS CHRISTI BAY IS ALSO A REGION OF FAUNAL UNIFORMITY MARKED AT ITS SOUTHERN END BY THE TERMINATION OF THE RANGES OF MANY SPECIES. SOUTH OF CORPUS CHRISTI BAY ALSO SEEMS TO BE A REGION OF FAUNAL UNIFORMITY, ALTHOUGH COLLECTIONS ARE STILL INADEQUATE FOR PROPER DELINEATION OF RANGES IN THIS AREA.

NEWELL (1948) PROPOSED THAT A ZOOGEOGRAPHICAL PROVINCE SHOULD BE A GEOGRAPHIC AREA IN WHICH THE RATE OF FAUNAL CHANGE SHOULD BE LOW WHILE IN THE NARROW BOUNDARIES ON EITHER SIDE THE RATE OF CHANGE SHOULD BE HIGH. IT SHOULD BE NOTED THAT BY THIS DEFINITION THERE IS NO NEED FOR A PROVINCE TO INCLUDE ANY ENDEMIC SPECIES, AND IT IS AGREED BY MOST MODERN TAXONOMISTS THAT NEWELL'S ANALYSIS MOST NEARLY FITS THE GENERAL IDEA OF WHAT CONSTITUTES A PROVINCE.

BY NEWELL'S DEFINITION, THEN, THE LAND SNAILS OF THE TEXAS COASTAL AREA WOULD INDICATE THE PRESENCE OF THREE WELL DEFINED ZOOGEOGRAPHICAL PROVINCES. THE AUSTRORIPARIAN PROVINCE INCLUDES ALL OF THE EASTERN PORTION OF THIS AREA AS FAR WEST AS GALVESTON BAY AND HARRIS COUNTY. THE TEXAN PROVINCE EXTENDS FROM GALVESTON BAY TO CORPUS CHRISTI BAY, AND THE TAMAULIPAN PROVINCE EXTENDS FROM CORPUS CHRISTI BAY SOUTHWARD INTO MEXICO.

TO BE CONTINUED.....

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EDITORIAL NOTE: UNFORTUNATELY IT IS IMPOSSIBLE TO PUBLISH FOR ANY DISCUSSED SPECIES A MAP OF TEXAS WITH THE SYMBOLS USED BY MR. MCGEE. WE HOPE THAT THE LISTING OF COUNTIES AS GIVEN IN THE TEXT WILL BE SUFFICIENT FOR OUR READERS.

LIVING VOLUTES. A MONOGRAPH OF THE RECENT VOLUTIDAE OF THE WORLD, BY C. S. WEAVER AND J. E. DUPONT. MONOGRAPH SERIES No. 1, DELAWARE MUSEUM OF NATURAL HISTORY, GREENVILLE, DELAWARE. 375 PAGES (9 1/4" x 12 1/4"), 1970.

THIS BOOK IS EXPENSIVE (\$55). BUT LIKE THE ARISTOCRATS OF SEASHELLS WHICH ARE DESCRIBED, THE COLOR PHOTOGRAPHS AND THE TEXT OF THIS PUBLICATION ARE OUTSTANDING. THIS IS A "MUST" BOOK FOR ALL VOLUTE COLLECTORS.

THIS BOOK IS ABOUT THE FAMILY VOLUTIDAE RAFINISQUE 1815. TEN SUBFAMILIES ARE LISTED. THE VOLUTES ARE DISCUSSED IN 43 GENERA AND 22 SUBGENERA. THE AUTHORS CONSIDER 199 SPECIES AND 5 SUBSPECIES TO BE VALID. SEVENTY-NINE DAZZLING COLOR PLATES ILLUSTRATE THE SHELLS. IN ADDITION SOME 43 FIGURES, MOSTLY LINE DRAWINGS, DEPICT THE RADULAE WHILE 13 PAGES OF MAPS SHOW THE RANGE AND DISTRIBUTION OF MANY SPECIES.

THESE WELL KNOWN CONCHOLOGIST-AUTHORS HAVE HAD UNPARALLELED ACCESS TO THE SHELLING GROUNDS AND TO THE RARITIES (VOLUTES) OF THE WORLD. FURTHER, THEY HAVE HAD THE BENEFIT OF CONSULTATIONS WITH AUTHORITIES FROM MANY LANDS. EACH SPECIES IS DESCRIBED SYSTEMATICALLY, WITH SECTIONS OF THE TEXT DEALING SUCCESSIVELY WITH TYPE SPECIMEN, TYPE LOCALITY, RANGE AND DISTRIBUTION, HABITAT, DIMENSIONS, SHELL DESCRIPTION, ANIMAL AND RADULA, AND REMARKS.

A COMPLETE BIBLIOGRAPHY OF SIGNIFICANT PUBLICATIONS FOR EACH SPECIES IS INCLUDED. THERE ARE 13 PAGES OF CONSOLIDATED LIST OF REFERENCES AT THE END OF THE BOOK; THE LATEST REFERENCES ARE DATED 1965. UNDER SYNONYMY, THE AUTHORS "HAVE CONSISTENTLY USED SEVERAL WELL KNOWN REFERENCES" AND LISTED "CITATIONS THAT SHOW NAME CHANGES, DIFFERENT GENERIC ARRANGEMENTS, FIGURES, ANATOMICAL AND RADULAR DESCRIPTIONS, LOCALITY DATA, AND RANGE EXTENSIONS".

I WAS INTERESTED PARTICULARLY IN THE SECTION COVERING THE GENUS SCAPHELLA. I FOUND THAT I HAD LOST SCAPHELLA KIENERI ALTOGETHER AND THAT I HAD GAINED SCAPHELLA DUBIA. S. KIENERI IS CONSIDERED BY THE AUTHORS TO BE A SYNONYM FOR THE LATTER SPECIES. THE FORMER SUBSPECIES OF S. JUNONIA BUTLERi AND S. JUNONIA JOHNSTONAE HAVE LOST THEIR SUBSPECIFIC IDENTITIES. LISTED AS SYNONYMS FOR S. DOHRNI ARE GOULDIANA, ROBUSTA, BERMUDEZI, FLORIDA, ATLANTIS, CUBA, AND MARI-NAE. THE SYNONYM FOR S. DUBIA INCLUDES SCHMITTI, GEORGIANA, KIENERI AND ETHELAE.

WHEN THERE IS TALK OF VOLUTES, ONE IMMEDIATELY THINKS OF THE GREAT BARRIER REEF AND AUSTRALIA AND OF THE EXPANSES OF THE SOUTH PACIFIC. BY ACTUAL COUNT, I TALLIED 39 SPECIES AND SUBSPECIES OF VOLUTES FOR THE WATERS ABOUT NORTH AND SOUTH AMERICA. THIS IS ROUGHLY 15% OF THE TOTAL.

(FOR SOME READERS WHO MAY NOT KNOW, THE MONOGRAPH SERIES JOHNSONIA, VOL. 2, No. 22, PAGES 41-60 AND VOL. 2, No. 32, PAGES 376-377 HAVE DESCRIBED MANY OF THE SCAPHELLAS OF THE WESTERN ATLANTIC LISTED ABOVE.)

## THE MANUFACTURE OF WAMPUM

BEFORE THE COMING OF THE WHITE MAN, THE SHELL BEADS WERE LABORIOUSLY SHAPED AND DRILLED WITH ONLY THE CRUDEST OF TOOLS. THE FIRST DRILL WAS A DEVELOPMENT OF THE PRIMITIVE AWL, A SHARP-POINTED INSTRUMENT OF BONE, STONE, (OFTEN FLINT), OR COPPER WHICH WAS HELD IN ONE HAND, PRESSED AGAINST THE OBJECT AND TURNED BACK AND FORTH UNTIL A HOLE WAS BORED. ARTIFICIALLY PERFORATED OBJECTS OF BONE, IVORY, POTTERY, STONE, AND WOOD COMMON TO ALL PERIODS OF THE WORLD'S HISTORY ARE FOUND IN MOUNDS, CAVES, SHELL-HEAPS AND BURIAL PLACES OF THE INDIANS. THE HOLES VARIED FROM AN EIGHTH TO A HALF INCH IN DIAMETER, AND FROM A FOURTH OF AN INCH TO 6 INCHES OR MORE IN DEPTH.

BORING BY MEANS OF HOLLOW DRILLS WAS ALSO DONE. GRASS REEDS OR TUBES OF WOOD WERE FILLED WITH DRY OR WET SAND WHICH ABRASSED THE OBJECT AS THE TUBE WAS TWIRLED BACK AND FORTH. USUALLY THE OBJECTS WERE DRILLED FIRST FROM ONE END, AND THEN REVERSED TO COMPLETE THE PROCESS, SHOWING THE INDIANS UNDERSTANDING OF REDUCING FRICTION IN THE PROCESS.

THE OBJECT BEING DRILLED MIGHT BE BORED FROM ABOVE WHILE RESTING BEFORE THE OPERATOR, OR HELD IN THE LEFT HAND WHILE THE DRILL WAS ROLLED UP AND DOWN THE THIGH; OR AT TIMES THE OBJECT WAS HELD BETWEEN THE NAKED FEET WHILE THE DRILL WAS REVOLVED BETWEEN THE HANDS.

THE STRAP DRILL USED BOTH AS A FIRE DRILL AND AS A PERFORATOR, WAS AN IMPROVEMENT ON THE SHAFT DRILL. THE SHAFT WAS KEPT IN POSITION BY MEANS OF THE HEAD PIECE OF WOOD, WHICH WAS HELD IN THE TEETH. A THONG WAS WOUND ONCE ROUND THE SHAFT, ONE END BEING HELD IN EACH HAND, AND PULLED ALTERNATELY TO THE RIGHT AND TO THE LEFT. THE THONG WAS SOMETIMES FURNISHED WITH HAND PIECES OF BONE OR WOOD TO GIVE A FIRMER GRIP TO THE STRAP. TO A PERSON USING THE STRAP DRILL, THE JAR TO THE TEETH AND HEAD WAS AT FIRST QUITE SEVERE, BUT MUCH OF THE DISCOMFORT APPARENTLY DISAPPEARED WITH USE.

CLOSELY RELATED TO THE STRAP DRILL WAS THE BOW DRILL. THE TOP OF THE SHAFT WAS HELD IN POSITION BY THE LEFT HAND, WHILE A STRAP, ATTACHED TO THE TWO ENDS OF A BOW, AFTER WRAPPING AROUND THE SHAFT, IS ALTERNATELY, REVOLVED BY A BACK AND FORWARD MOTION OF THE BOW.

THE PUMP DRILL, STILL EMPLOYED BY PRIMITIVE PEOPLES, CONSISTED OF A SHAFT WHICH PASSED THROUGH A DISK OF STONE, POTTERY, OR WOOD; AND A CROSSPIECE THROUGH THE SHAFT ALSO RAN. TO EACH END OF THE CROSSPIECE IS ATTACHED A THONG HAVING SUFFICIENT PLAY TO ALLOW IT TO CROSS THE TOP OF THE SHAFT AND TO PERMIT THE CROSS-PIECE TO REACH CLOSE TO THE DISK. THIS DISK IS TURNED TO WIND THE STRING ABOUT THE SHAFT AND THIS RAISES THE CROSS PIECE.

BY PRESSING DOWN THE CROSSPIECE AFTER A FEW TURNS HAVE BEEN TAKEN, THE SHAFT IS MADE TO REVOLVE AND THE DISK RECEIVES SUFFICIENT IMPETUS TO REWIND THE STRING, WHICH BY SUCCESSIVE PRESSURE AND RELEASE, CONTINUES THE RECIPROCAL MOVEMENT NECESSARY TO CUTTING. THIS DRILL ATTAINED MUCH GREATER SPEED, AND THE RIGHT HAND WAS LEFT FREE TO HOLD THE OBJECT BEING DRILLED. THE PUMP DRILL, THOUGH LONG USED, ESPECIALLY AMONG THE PUEBLO INDIANS, WAS PROBABLY OF FOREIGN ORIGIN.

THE BEADS WERE GROUND SMOOTH BY MEANS OF STONE , THEN STRUNG ON STRANDS OF HEMP . WE ARE TOLD IN ONE ACCOUNT; "WHEN THESE BEADS ARE WORN OUT , SO THAT THEY CANNOT BE STRUNG NEATLY , AND EVEN ON ONE THREAD THEY NO LONGER CONSIDER THEM GOOD . THEIR WAY OF JUDGING THEM IS TO RUB THE WHOLE THREAD FULL OF THEM ON THEIR NOSES; IF THEY FIND IT SLIDES SMOOTH AND EVEN , LIKE GLASS BEADS , THEN THEY ARE CONSIDERED GOOD , OTHERWISE THEY BREAK THEM AND THROW THEM AWAY ."

#### SHELL MONEY OF THE WEST COAST .

SHELL MONEY AT AN EARLY TIME ON THE PACIFIC COAST BECAME A MEDIUM OF EXCHANGE , NOT ONLY AMONG THE INDIANS BUT ALSO AMONG THE WHITES . A SINGLE SHELL , OF THE DECORATED DENTALIUM (DENTALIUM PRETEOSUM) WAS MEASURED AND ITS VALUE DETERMINED BY THE CREASES ON THE LEFT HAND . STRINGS OF THESE SHELLS REACHING FROM THE THUMB NAIL TO THE POINT OF THE SHOULDER CONTAIN 11 OF THE LARGEST AND 14 OF THE SMALLEST OF THESE SHELLS . SOME OF THE NATIVES HAD A SET OF LINES TATTOOED ON THE INNER SIDE OF THE LEFT FOREARM WHICH INDICATED THE LENGTH OF 5 SHELLS OF THE SEVERAL STANDARDS OF LENGTH .

THESE TUSK SHELLS WERE ATTAINED IN THE FOLLOWING MANNER: TO THE END OF A SUITABLE POLE , A STRIP OF WOOD WAS SECURED , BEING PLACED TRANSVERSELY TO THE LINE OF THE POLE , AND FIRST STUDED WITH BONE OR WOODEN TEETH THUS FORMING A CRUDE RAKE . FROM THE BOW OF A CANOE OR BOAT PROPELLED USUALLY BY A WOMAN , THE TUSK-SHELL FISHER STOOD AND CAREFULLY PRODDED THE SANDS AT THE BOTTOM OF THE WATER A NUMBER OF TIMES AND THEN DREW UP HIS INSTRUMENT TO SEE WHETHER ANY OF THE SHELLS HAD BECOME IMPALED ON THE TEETH . THIS WAS A PRACTICAL METHOD OF OBTAINING THE SHELLS AS THEY WERE NOT FOUND BETWEEN THE TIDE MARKS .

THE WOMEN STRUNG THESE SHELLS NEATLY ON BITS OF DRIED SINEW; THEY WERE AFTERWARD ORNAMENTED WITH FRAGMENTS OF HALIOTIS SHELL AND WITH TUFTS OF MOUNTAIN-GOATS WOOL . A STRING OF 25 STRANDS OF THESE SHELLS WHICH PLACED END TO END , REACHED ONE FATHOM OR 6 FEET WAS CALLED A 'HIAQUA' AND WAS THE STANDARD OF VALUE . THE SHORT OR BROKEN SHELLS WERE STRUNG IN LIKE MANNER AND THESE INFERIOR STRINGS WERE CALLED 'KOPKOPS' , OF WHICH 40 WERE EQUAL IN VALUE TO ONE HIAQUA . BANDS OR BELTS WERE MADE OF THESE SHELLS , AND THESE ALSO SERVED AS CURRENCY AND FOR ORNAMENT .

HOWEVER , "FORTY TO THE FATHOM" WAS THE STANDARD , OR ONE HIAQUA , WHICH WOULD PURCHASE AS A RULE ONE MALE AND TWO FEMALE SLAVES . THIS WAS APPROXIMATELY THE EQUAL OF 40 POUNDS STERLING .

IN THE CENTRAL AND SOUTHERN PART OF THE STATE OF CALIFORNIA THERE WAS A STAPLE CURRENCY KNOWN AS 'HAWOCK' MADE FROM THE SHELLS OF 'A PONDEROUS CLAM WHEN ADULT' (POSSIBLY THE PISMO SURF CLAM , TIVELA STULTORUM) . THE SHELL WAS CUT INTO SMALL DISKS , OF WHICH THE LARGER WERE WORTH ABOUT 25 CENTS AND THE SMALLER ABOUT 4 CENTS . SOME OF THE DISKS , 2 INCHES IN DIAMETER AND 1/2 INCH IN THICKNESS , WERE WORTH ABOUT A DOLLAR APIECE . POWERS MENTIONS A NECKLACE OF 'HAWOK' WORN BY A YOUNG WOMAN WHICH WAS 10 YARDS LONG , CONSISTED OF 1,160 PIECES AND WAS WORTH ABOUT \$225 .

THE OLIVELLA SHELL MONEY WAS KNOWN AS 'KOLKOL' , MADE FROM OLIVELLA BIPPLICATA , AND THE SHELL WAS PREPARED SIMPLY BY GRINDING OFF THE APEX AND STRINGING IT MOUTH TO MOUTH WITH OTHERS . THIS MONEY , IT WAS SAID , WAS 'SLIGHTLY ESTEEMED' , PERHAPS OWING TO THE GREAT ABUNDANCE OF THE SPECIES .

THE ADALONE OR HALIOTIS SHELL MONEY WAS KNOWN AS 'UHL-LO'; THIS WAS MADE FROM THE BEAUTIFUL SHELL BY CUTTING IT INTO OBLONG STRIPS FROM 1 INCH TO 2 INCHES LONG AND ABOUT 1/2 INCH WIDE. HOLES WERE DRILLED NEAR ONE END AND THE STRIPS WERE STRUNG EDGE TO EDGE. TEN PIECES CONSTITUTED A STRING. THE LARGER PIECES WERE WORTH \$1.00 APIECE, THUS MAKING THE VALUE OF A STRING ABOUT \$10.00.

TO BE CONTINUED . . . .

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CONTINUED FROM PAGE 33 . . . . .

LLOYD MEISTER ANNOUNCED THAT THE NEXT FIELD TRIP WILL BE HELD ON DECEMBER 13TH AT SAN LUIS PASS.

MRS. DEXTER DREW THE MEMBERS ATTENTION TO AN OFFER MADE TO THE TEXAS PARKS AND WILDLIFE COMMISSION TO PURCHASE A 19 MILE LONG STRIP OF PROPERTY ALONG THE MUSTANG ISLAND BEACHFRONT, AND SHE URGED ALL MEMBERS TO WRITE TO THE PARKS AND WILDLIFE COMMISSIONER AND DIRECTOR IN SUPPORT OF SUCH PURCHASE.

THE REMAINDER OF THE EVENING WAS TAKEN UP BY DELIGHTFUL TALKS BY MEMBERS CHARLIE DOH, ADMIRAL CARDEZA AND MRS. CLARICE VAN ERP ABOUT THEIR SHELLING EXPERIENCES IN GUADELOUPE, SANIBEL AND LOPEZ ISLAND NEAR VANCOUVER RESPECTIVELY.

#### BUSINESS MEETING

DURING THE BOARD MEETING HELD ON MONDAY, NOVEMBER 2ND, THE BOARD DECIDED TO DESIGNATE THE FEBRUARY MEETING AS A BUSINESS MEETING AT WHICH THE BYLAWS OF OUR ORGANIZATION WILL BE DISCUSSED. MEMBERS WHO DESIRE A COPY OF OUR BYLAWS FOR STUDY, PLEASE CONTACT EITHER MR. F. VAN MORKHOVEN OR MR. H. ODÉ.

AT THE SAME BOARD MEETING THE FOLLOWING MOTION WAS VOTED ON:

"WHEREAS THE HOUSTON CONCHOLOGY SOCIETY HAS BEEN INFORMED BY THE IRS THAT ITS TAX EXEMPTION IS JEOPARDIZED BY ANY PRACTICE WHEREBY A MEMBER OF THE SOCIETY RECEIVES PERSONAL GAIN OR INCOME, IT IS HEREBY RESOLVED THAT THERE SHALL BE NO MORE SALES OF ANY ARTICLES OR CRAFTS BY CLUB MEMBERS UNDER THE AUSPICES OF THE SOCIETY".

THIS MOTION WAS ADOPTED BY MAJORITY VOTE.

#### ACKNOWLEDGEMENT

THE EDITOR APOLOGIZES TO THE TEXAS PARKS AND WILDLIFE DEPARTMENT FOR HAVING OMITTED A PROPER ACKNOWLEDGEMENT. THE NOTE ON CONSERVATION SUBMITTED BY ANNE SPEERS AND PUBLISHED IN OUR OCTOBER ISSUE WAS A NEWS RELEASE BY THE TEXAS PARKS AND WILDLIFE DEPARTMENT. FROM THE SAME SOURCE COMES THE NEWS THAT SOON A HISTORY OF THE RIDLEY TURTLE, THE SAME SPECIES WHICH OUR MEMBERS SAW AT OUR LAST SHELL SHOW, WILL BE PUBLISHED.

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### NEXT MEETING

DR. TOM E. PULLEY, DIRECTOR OF THE HOUSTON MUSEUM OF NATURAL SCIENCE, WILL GIVE THE SECOND HALF OF THE HISTORY OF SHELL COLLECTING IN THE WORLD, BEGINNING WITH LAMARCK, AT THE JANUARY MEETING ON THE 27TH AT 8 P.M. AT THE MUSEUM. BACK IN JANUARY, 1968, DR. PULLEY TITLED HIS DISCUSSION "COLLECTIONS AND COLLECTORS" AND PROMISED THAT NIGHT TO COME BACK AND CONTINUE HIS INTERESTING TALK ON EARLY CONCHOLOGISTS AND BOOKS. HE WILL SHOW SOME OF THE BOOKS OF ILLUSTRATIONS OF SHELLS THAT ARE NOW HOUSED AT THE MUSEUM.

### REPORT NOVEMBER MEETING

THE MONTHLY MEETING OF THE SOCIETY TOOK PLACE ON NOVEMBER 18TH, 1970 AT THE MUSEUM OF NATURAL SCIENCE.

MR. FRANK VAN MORKHOVEN INFORMED THE AUDIENCE THAT HE WAS RESIGNING HIS POST AS SECRETARY BECAUSE HE WAS MOVING AWAY FROM HOUSTON. DR. ODÉ PRAISED MR. VAN MORKHOVEN FOR PAST SERVICE AND APPOINTED FRITZ LANG AS ACTING SECRETARY.

MR. HAROLD GEIS DISCUSSED THE HISTORY OF THE BY-LAWS, AND OUR CLUBS BEGINNING FROM THE OUTDOOR NATURE CLUB. MR. GEIS SAID THAT THE BY-LAWS CAN BE CHANGED BY A SIMPLE MAJORITY AT A SPECIAL MEETING CALLED FOR THAT PURPOSE. HE MENTIONED THAT THE BY-LAWS SHOULD BE REVISED TO SUIT THE NEW CONDITIONS.

MR. LLOYD MEISTER REPORTED ON PLANS FOR THE FUTURE SHELL FAIR.

MR. HARRY SHORT APPEARED BEFORE THE CLUB TO READ A LETTER ABOUT THE SHELL CRAFT AT THE SHARPSTOWN SHELL FAIR AND HIS FEELINGS ABOUT SHELLCRAFT IN GENERAL.

DR. ODÉ DISCUSSED THE PROBLEMS OF INTERNAL REVENUE REGULATIONS AS THEY RELATE TO CASH SALES AT THE SHELL FAIRS.

A MOTION WAS MADE BY MR. JOHN EDSTROM, SECONDED BY MR. SAM MIRON TO STUDY THE PROBLEM OF SHELLCRAFT SALES AND TAKE IT UP AT THE FEBRUARY MONTHLY BUSINESS MEETING. MOTION WAS CARRIED BY VOICE VOTE.

DR. SUTOW PRESENTED A VERY INTERESTING AND INFORMATIVE TALK ABOUT SHELL TRADING. HE HAD BOOKS TO SHOW AND A BEAUTIFUL GOLDEN COWRIE JUST RECEIVED IN TRADE.

SLIDES OF SEVERAL SHARPSTOWN SHELL EXHIBITS WERE SHOWN.

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY PERIPLOMATIDAE

THIS IS A FAMILY OF UNUSUALLY HINGED BIVALVES, SOMETIMES CALLED "SPOON-CLAMS" IN REFERENCE TO THE INTERNAL STRUCTURE OF THE HINGE. TWO SPECIES ARE KNOWN FROM TEXAS. OUR NOMENCLATURE IS BASED ON A PAPER PRESENTED BY DR. J. ROSEWATER GIVEN AT THE 34TH ANNUAL MEETING OF THE A.M.U. IN CORPUS CHRISTI, 1968. (SEE ANNUAL REPORTS FOR 1968, PAGES 37-39).

PERIPLOMA MARGARITACEUM LAMARCK, 1801. THIS IS A COMMON SHELL ON THE TEXAS BEACH: APPARENTLY IT LIVES NEAR THE INLETS AND IN THE SURFZONE. ONE VALVE IS MUCH INFLATED, BUT THE OTHER IS RATHER FLAT AND OF DIFFERENT SIZE. HINGED SPECIMENS ARE USUALLY COMMON IN THE TIDELINE ALONG THE ENTIRE TEXAS COAST, BUT ONLY ON RARE OCCASIONS ARE LIVE SHELLS FOUND ON THE BEACH. THIS SPECIES HAS BEEN REPORTED FOR TEXAS UNDER A VARIETY OF NAMES: P. INAEQUALVIS SCHUMACHER 1817; P. INEQUALE C. B. ADAMS 1842; P. ANGULIFERUM PHILIPPI, 1847. IT IS HIGHLY PROBABLE THAT THESE THREE NAMES ARE SYNONYMS. IN HIS STUDIES OF THE FAUNA OF THE TEXAS COASTAL BAYS, PARKER LISTS P. FRAGILE TOTTEN 1835. WE HAVE NOT SEEN THIS SPECIES AND IT IS LIKELY THAT PARKER'S IDENTIFICATION IS IN ERROR.

FIGURED IN: 1, 4, 6

PREVIOUS REFERENCES: MANY

LOCALITIES: COMMON ALONG THE ENTIRE TEXAS COAST.

PERIPLOMA ORBICULARE GUPPY 1882. DR. H. HARRY COLLECTED THIS SPECIES ALIVE IN SOFT MUD IN GALVESTON WEST BAY. IT HAS A FAR MORE ROUNDED SHAPE THAN THE PREVIOUS SPECIES. WE HAVE REPORTS THAT IT HAS BEEN FOUND IN BEACH-DRIFT ON GALVESTON ISLAND. KENNEDY (1959, MASTERS THESIS T.C.U.) FIGURES A SPECIMEN AS P. PAPYRATIUM SAY, WHICH WAS OBTAINED OFFSHORE EAST TEXAS.

FIGURED IN: NOT AVAILABLE

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON WEST BAY

### FAMILY COLUMBELLIDAE

ACKNOWLEDGEMENT BY A. SPEERS. WHEN VISITING THE SMITHSONIAN INSTITUTE IN 1967, I MET DR. GEO. RADWIN, THEN COMPLETING RESEARCH FOR HIS DOCTORATE ON THE COLUMBELLIDAE. I ASKED IF HE COULD EXPLAIN ANACHIS TRANSLIRATA TO ME, AS IT SEEMED TO ME THERE WAS SOME CONFUSION IN THE LITERATURE



AND ILLUSTRATIONS. HE REPLIED THAT HE WAS NOT SURPRISED, BECAUSE THERE EXISTS CONSIDERABLE CONFUSION IN THE SPECIES OF THIS FAMILY COMMON TO OUR COAST, AND EXPRESSED THE WISH TO SEE A SERIES OF THE SPECIES FOUND IN TEXAS. ON RETURNING HOME, THE SPECIMENS WERE SENT AND HE VERY KINDLY REPLIED WITH A DETAILED EXPLANATION OF THE CORRECTED TAXONOMY OF OUR COASTAL SPECIES. THE NAMES USED IN THE FOLLOWING LIST ARE THOSE DESIGNATED BY DR. RADWIN. HIS THESIS IS DUE TO BE PUBLISHED, AND WILL UNDOUBTEDLY SOLVE MANY OTHER PROBLEMS IN THIS FAMILY. WE THANK DR. RADWIN FOR HIS PERMISSION TO GO AHEAD WITH THIS CHANGE OF TAXONOMIC DESIGNATIONS PRIOR TO THE PUBLICATION OF HIS THESIS.

THIS LARGE AND WIDESPREAD FAMILY OF GASTROPODS IS REPRESENTED IN TEXAS BY SEVERAL SPECIES IN THE GENERA ANACHIS AND MITBELLA.

ANACHIS OSTREICOLA MELVILL, 1881. THIS SPECIES HAS BEEN CONSIDERED BY MANY WORKERS AS A SUBSPECIES OF A. OBESA C. B. ADAMS AND IS LISTED AS SUCH IN MOST OF THE CURRENT LITERATURE. THE LATEST STUDIES OF DR. RADWIN HAVE INTERPRETED THIS FORM AS DIFFERENT FROM A. OBESA C. B. ADAMS. ONE CAN INDEED CONSISTENTLY SEPARATE BOTH FORMS ON THE BASIS OF SHELLSHAPE AND COLORPATTERN. IT OCCURS, MIXED WITH A. OBESA IN POPULATIONS ALONG THE ENTIRE TEXAS COAST, WHERE IT IS COMMON IN THE BAYS AND IN BEACHDRIFT.

FIGURED IN: 12

PREVIOUS REFERENCES: NONE

LOCALITIES: LIVING IN THE BAYS ALONG THE ENTIRE TEXAS COAST.

ANACHIS OBESA C. B. ADAMS, 1845. FROM A. OSTREICOLA MELVILL THIS SPECIES DIFFERS BY ITS SLIGHTLY GREATER SIZE, MUCH LIGHTER COLORPATTERN, FINER RIBBING, AND SLENDERER SHAPE. IT IS ABUNDANT IN BEACHDRIFT AND LIVES IN ALL TEXAS BAYS CLOSE TO THE INLETS ON OLD OYSTER SHELLS AND SUBMERGED ROCKS AND STONES.

FIGURED IN: 11

PREVIOUS REFERENCES: USUALLY CONFUSED WITH A. OSTREICOLA

LOCALITIES: LIVING IN THE BAYS ALONG THE ENTIRE TEXAS COAST.

ANACHIS FLORIDANA REHDER, 1939. THIS SPECIES WAS DISCOVERED ABOUT 10 YEARS AGO BY MRS. A. SPEERS AT PORT ARANSAS. SINCE THEN IT HAS BEEN FOUND ALIVE AT PORT ISABEL, WHERE IT IS NOT RARE, AND OCCASIONALLY AT GALVESTON, WHERE A FEW DEAD SPECIMENS WERE FOUND AT SAN LUIS PASS AND BOLIVAR PENINSULA. IT HAS ALSO BEEN COLLECTED ALIVE ON THE FREEPORT JETTY. PROBABLY THIS SPECIES LIVES ALL ALONG THE TEXAS COAST BUT HAS IN THE PAST NOT ALWAYS BEEN IDENTIFIED PROPERLY.

FIGURED IN: NAUTILUS, VOL. 53 (1), PL. 6, FIG. 6

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, FREEPORT, PORT ARANSAS, PORT ISABEL.

ANACHIS SEMIPLICATA STEARNS, 1873. IN THE SOUTH TEXAS BAYS THIS IS THE MOST COMMON COLUMBELLID. IT IS CHARACTERIZED BY ITS COLORPATTERN AND DIFFERS FROM A. TRANSLIRATA IN ITS SCULPTURE. AT GALVESTON A. SEMIPLICATA IS LESS COMMON THAN AT PORT ARANSAS AND PORT ISABEL, WHERE IT IS OFTEN NUMEROUS ON FRONDS OF SEAWEED IN THE INLET AREAS.

FIGURED IN: BULL. A.A.P.G., VOL. 38(8), PL. 38, FIG. 8, VOL. 40,

PREVIOUS REFERENCES: MANY

TEXT FIG. 19A.

LOCALITIES: ALONG THE ENTIRE TEXAS COAST BUT MOST ABUNDANT TOWARD THE SOUTHWEST.

LOVERS OF SHELLFISH, TAKE HEART!  
THE GEODUCK, OR GOOEYDUCK IS HERE!!

UNDER THIS HEADING, A LENGTHY NEWS ARTICLE BY JAMES E. BYLAN APPEARED IN THE WALL STREET JOURNAL FOR AUGUST 3, 1970. THE MAJOR PORTION OF THE REPORT DISCUSSED THE GEODUCK, PANOPE GENEROSA GOULD. THIS IS THE GIANT CLAM THAT POPULATES THE MUD OF QUIET BAYS AND ESTUARIES ALONG THE PACIFIC COAST FROM MORRO BAY TO THE PUGET SOUND. THE NAME OF THIS MUD DWELLER IS DERIVED FROM CHINOOK INDIAN SOURCES, AND, ACCORDING TO MR. BYLAN (AND WEBSTER'S DICTIONARY) THE COMMON NAME FOR THE CLAM CAN BE SPELLED "GOOEYDUCK", "GEODUCK", "GOEYDUCK", "GOEDUCK", OR "GWEDUCK".

THE MOLLUSK LIVES 4 TO 5 FEET DEEP IN MUD AND EXTENDS ITS HUGE SIPHON UPWARD TO THE SURFACE OF THE MUD. IT CAN SPURT GEYSERS OF WATER 4 TO 5 FEET HIGH. FULLY EXTENDED THE GEODUCK IS AS LONG AS A 5 OR 6 YEAR OLD CHILD. THE GEODUCK IS THE LARGEST AMERICAN CLAM AND THE 10 TO 12-POUNDER IS COMMON. MAMMOTH CREATURES UP TO 40 POUNDS HAVE BEEN REPORTED. THE SHELLS CAN MEASURE MORE THAN 8 INCHES IN LENGTH. DIGGING UP ONE OF THESE MOLLUSKS IS A MAJOR UNDERTAKING - AND AN UNFORGETTABLE ADVENTURE.

THE NEWS ARTICLE CONCERNS THE EFFORTS TO COMMERCIALIZE THE GASTRONOMIC QUALITIES OF THIS DELICIOUS MOLLUSK. IN PART, THE MARKETING OF THIS HITHERTO MORE OF LESS UNKNOWN GOURMET FOOD STEMS FROM THE INCREASING PROBLEMS IN MEETING THE DEMANDS FOR THE FAMILIAR CLAMS, ABALONE AND CRUSTACEANS. THE PROMOTERS HAVE ALREADY COINED A EUPHONIOUS APPELLATION FOR THE GEODUCK, "WASHINGTON KING CLAM".

ANOTHER REASON FOR THIS SUDDEN ACTIVITY AND INTEREST CONCERNING THE GEODUCK IS THE "DISCOVERY" BY STATE AND NAVY DIVERS THAT THE BOTTOM OF PUGET SOUND IS "TEEMING" WITH THE CLAMS. QUOTED STATISTICS CLAIM THAT "SOME 20,000 ACRES SURVEYED REVEALED AN ESTIMATED 40 MILLION GEODUCKS".

WASHINGTON STATE LEGISLATURE HAS AUTHORIZED COMMERCIAL OPERATIONS FOR THESE CLAMS. IN ORDER TO PREVENT OVER-ZEALOUS CLAMMING, IT IS REQUIRED THAT THE GEODUCK MUST BE "HAULED TO THE SURFACE BY DIVERS". THIS WILL PREVENT MECHANICAL DREDGING. WHEN ONE REALIZED HOW DIFFICULT IT IS TO DIG UP ONE OF THESE CREATURES EVEN ON AN EXPOSED TIDAL FLAT, THE HARVESTING OF EACH ONE THE CLAMS FROM THE MUD UNDER WATER WILL NOT BE EASY OR RAPID.

THUS, THE SUPPLY OF GEODUCKS WILL NOT BE EXHAUSTED RAPIDLY AND THE LONG LIFE OF THE INDUSTRY IS ASSURED TO SOME EXTENT. ON THE OTHER HAND, THE CONSUMER WILL PROBABLY HAVE TO PAY DEARLY FOR THESE DELICACIES. STEAMER CLAMS ARE WHOLESALING IN SEATTLE FOR ABOUT 18 CENTS A POUND. IT IS ESTIMATED THAT THE PRICE FOR THE GEODUCK MUST EXCEED 70 CENTS A POUND TO YIELD ANY PROFIT. APPARENTLY THE GEODUCK IS BEING DISTRIBUTED TO RESTAURANTS CURRENTLY FOR ABOUT \$2.50 A POUND (COMPARED TO \$3.50 FOR A POUND OF ABALONE). A 3-POUND GEODUCK WILL YIELD FROM 1 TO 1 1/2 POUNDS OF MEAT.

THE TIMING OF THE GEODUCK BOOM MAY BE OPPORTUNE. IN SAN FRANCISCO, THE LOCAL CATCH OF THE FAMOUS DUNGENESS CRAB HAS DWINDLED. THE ALASKAN KING CRAB IS BECOMING SCARCER. THE ABALONE PRODUCTION OFF THE CALIFORNIA COAST HAS SHRUNK. SO - THE GOOEYDUCK MAY CATCH ON AS THE GOURMET'S LATEST MOLLUSCAN DELIGHT.

DISCUSSION OF SPECIES

POLYGYRA (POLYGYRA) SEPTEMVOLVA FEBIGERI (BLAND)

HELIX FEBIGERI BLAND, 1866, AMERICAN JOURNAL OF CONCHYLOGY, II, PT. 4, P. 373, PL. 21, FIG. 10.

POLYGYRA SEPTEMVOLVA FEBIGERI PILSBRY, 1940, LAND MOLLUSCS OF NORTH AMERICA, I, PT. 2, P. 591, FIG. 381L.

DISTRIBUTION. SPECIMENS EXAMINED FROM BRAZORIA, GALVESTON, HARRIS, JEFFERSON, NUECES COUNTIES. PREVIOUS PUBLISHED RECORDS FROM CAMERON, MATAGORDA, WILLACE COUNTIES.

REMARKS. THIS SPECIES IN TEXAS IS CONFINED TO AREAS BORDERING WATERS, EITHER BRACKISH OR OF NORMAL GULF SALINITY. THE AVERAGE SOIL TYPE IS SANDY WITH A PH NEAR 7 TO NEAR 9. THE WRITER FOUND LARGE COLONIES LIVING UNDER BEACH DRIFT LEFT BY A MODERATE HIGH TIDE. A COMMON ASSOCIATE IS SUCCINEA LUTEOLA, A LESS COMMON ONE, POLYGYRA TEXASIANA.

IN THE HOUSTON AREA, THIS SPECIES IS FOUND AT THE SAN JACINTO BATTLEGROUND PARK.

POLYGYRA (DAEDALOCYBA) AURIFORMIS (BLAND)

HELIX AURIFORMIS T. BLAND, 1859, ANNALS OF THE ENTOMOLOGICAL SOCIETY OF AMERICA, VII, PT. 1, P. 37, FIG. V.

POLYGYRA (DAEDALOCYBA) AURIFORMIS PILSBRY, 1940, LAND MOLLUSCS OF NORTH AMERICA, I, PT. 2, P. 599, FIGS. 385A-E.

DISTRIBUTION. SPECIMENS EXAMINED FROM AUSTIN, BASTROP, BEXAR, BLANCO, BRAZORIA, BRAZOS, BURLESON, CALHOUN, CAMERON, CHAMBERS, COLORADO, COMAL, FAYETTE, FORT BEND, GALVESTON, HARDIN, HARRIS, HAYS, JACKSON, JEFFERSON, KARNES, KERR, LAVACA, LIBERTY, MASON, MATAGORDA, NUECES, REFUGIO, ROBERTSON, SAN PATRICIO, TRAVIS, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ARANSAS, ORANGE, WILLACY COUNTIES.

REMARKS. THIS SPECIES HAS A WIDE BUT INTERRUPTED RANGE IN THE SOUTHEAST SECTION OF TEXAS. IT DOES NOT SEEM TO BE RESTRICTED TO ANY SPECIFIC HABITAT OR SOIL TYPE. IT IS FOUND UNDER LOGS AND LEAF MOLD OF EAST TEXAS AND UNDER ANY SMALL OBJECT THAT OFFERS SHADE IN THE DRIEST OF TEXAS PRAIRIE GRASSLAND. IT IS OFTEN FOUND IN THE PARKS WITHIN THE CITY LIMITS OF HOUSTON AND USED TO OCCUR AS LATE AS 1960 ON THE CAMPUS OF THE UNIVERSITY OF HOUSTON.

POLYGYRA (LOBOSCULUM) LEPORINA (GOULD)

HELIX LEPORINA A. GOULD, 1848, PROC. BOSTON SOCIETY OF NATURAL HISTORY, 3, P. 39.

POLYGYRA LEPORINA PILSBRY, 1940, LAND MOLLUSCS OF NORTH AMERICA, I, PT. 2, P. 611, FIGS. 391A-E.

DISTRIBUTION. SPECIMENS EXAMINED FROM AUSTIN, BRAZORIA, CALHOUN, DALLAS, FORT BEND, GALVESTON, HARDIN, HARRIS, JEFFERSON, LEE, LEON, LIBERTY, MADISON, MATAGORDA, MONTGOMERY, NUECES, ORANGE, ROBERTSON, SAN PATRICIO COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, BOWIE, CAMERON, WASHINGTON, WILLACY COUNTIES.

REMARKS. THE RECORDS FROM BRAZORIA AND MATAGORDA WERE POSSIBLY BASED ONLY ON DRIFT SPECIMENS, THIS IS CERTAINLY TRUE FOR THOSE FROM SAN PATRICIO, NUECES, CAMERON AND WILLACY COUNTIES; THERE IS NO EVIDENCE THAT P. LEPORINA LIVES ANYWHERE IN THE TAMAUlipAN PROVINCE. THIS SPECIES IS NEVER FOUND IN HABITATS THAT DO NOT OFFER ABUNDANT, DAMP, DECAYING VEGETATION, BEING MOST ABUNDANT AT THE BASE OF TREES IN MIXED PINE-DECIDUOUS FOREST. IT IS FREQUENTLY COLLECTED WITHIN THE HOUSTON CITY LIMITS.

POLYGYRA (ERYMODON) MOOREANA (W. G. BINNEY), TYPICAL

HELIX MOOREANA W. G. BINNEY, 1859, PROC. AC. NAT. SCI., PHILA., P. 184.

POLYGYRA MOOREANA PILSBRY, 1940, LAND MOLL. N. AMER., 1, PT. 2, P. 622, FIGS. 296A-D.

DISTRIBUTION. SPECIMENS EXAMINED OF TYPICAL MOOREANA FROM AUSTIN, BANDERA, BASTROP, BELL, BEXAR, BLANCO, BOSQUE, BRAZORIA, BRAZOS, BURLESON, BURNET, CALHOUN, COLORADO, COMAL, CORYELL, ELLIS, FAYETTE, FRIO, GALVESTON, GILLESPIE, GONZALES, GRAYSON, HAYS, JACKSON, KENDALL, KERR, KIMBLE, LAMPASAS, LAVACA, LEE, LIBERTY, MASON, MATAGORDA, MCLENNAN, MEDINA, MILAM, NUECES, REFUGIO, ROBERTSON, SAN PATRICIO, TARRANT, TRAVIS, UVALDE, VICTORIA, WASHINGTON, WEBB, WHARTON, WILLACY COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, CAMERON, DALLAS, FORT BEND, HIDALGO, REAL, STARR, WALLER, WILLIAMSON, WILSON COUNTIES.

REMARKS. THIS SPECIES IS WIDELY DISTRIBUTED IN A VARIETY OF HABITATS IN THE TEXAN AND BALCONIAN PROVINCES. THE COLLECTING DONE INDICATES A PREFERENCE FOR A SOMEWHAT DRIER HABITAT THAN OFFERED BY THE HUMID AUSTRORIPARIAN OF EAST TEXAS. P. MOOREANA AND ITS SUBSPECIES THOLUS ARE KNOWN ONLY FROM TEXAS. THE FEW RECORDS FROM THE TAMAUlipAN PROVINCE WERE BASED ON DRIFT MATERIAL ONLY.

POLYGYRA (ERYMODON) MOOREANA THOLUS (W. G. BINNEY)

HELIX THOLUS W. G. BINNEY, 1857, PROC. AC. SCI. PHILA., P. 186.

POLYGYRA THOLUS PILSBRY, 1940, LAND MOLL. N. AMER. 1, PT. 2, P. 624, FIGS. 396E-G.

DISTRIBUTION. SPECIMENS EXAMINED FROM BANDERA, BRAZORIA, BRAZOS, BURLESON, CALHOUN, CAMERON, FAYETTE, GALVESTON, HARRIS, JACKSON, KERR, MATAGORDA, MILAN, NUECES, REFUGIO, ROBERTSON, SAN PATRICIO, VICTORIA, WASHINGTON, WILLACY COUNTIES. PREVIOUS PUBLISHED RECORDS FROM FORT BEND COUNTY.

REMARKS. THE APPARENT SMALL RANGE OF THIS FORM IS DUE TO THE DIFFICULTY OF SEPARATING IT FROM TYPICAL P. MOOREANA. PILSBRY DISTINGUISHED P. THOLUS AND BY ITS WIDER UMBILICUS. HOWEVER, THE WRITER HAS SPECIMENS FROM THE SAME LOCALITY THAT APPEAR TO INTERGRADE COMPLETELY. DR. BEQUAERT IS OF THE OPINION THAT P. THOLUS SHOULD BE MADE A SUBSPECIES OF P. MOOREANA. POLYGYRA GRACILIS L. HUBRICH (1961, NAUTILUS, LXXV, PT. 1, P. 26; PL. 4, FIGS. N AND O) WAS BASED ON SPECIMENS TRANSITIONAL BETWEEN TYPICAL MOOREANA AND M. THOLUS. AS IS THE CASE OF TYPICAL MOOREANA, THE FEW RECORDS FROM THE TAMAUlipAN PROVINCE ARE BASED ON DRIFT SHELLS ONLY.

POLYGYRA (ERYMODON) TEXASIANA (MORICAND), TYPICAL

HELIX (HELICODONTA) TEXASIANA MORICAND, 1833, MEM. SOC. PHYS. HIST. NAT. GENEVE, VI, PT. 1, P. 538, PL. 1, FIGS. 2A-C.

POLYGYRA TEXASIANA PILSBRY, 1940, LAND MOLL. N. AMER., 1, PT. 2, P. 617, FIGS. 394A-F.

DISTRIBUTION. SPECIMENS EXAMINED FROM ARANSAS, ARCHER, ATASCOSA, AUSTIN, BANDERA, BASTROP, BAYLOR, BEE, BELL, BEXAR, BLANCO, BOSQUE, BOWIE, BRAZORIA, BRAZOS, BROOKS, BURLISON, BURNET, CALDWELL, CALHOUN, CAMERON, CHAMBERS, CLAY, COLORADO, COMAL, CORYELL, CROCKETT, DALLAS, DENTON, DIMMIT, DUVAL, FANNIN, FAYETTE, FRIO, GALVESTON, GARZA, GOLIAD, GONZALES, GRAYSON, GRIMES, GUADALUPE, HAMILTON, HARRIS, HAYS, HIDALGO, HOOD, HUNT, JACK, JACKSON, JEFFERSON, JIM WELLS, KARNES, KAUFMAN, KENDALL, KENEDY, KERR, KIMBLE, KINNEY, LAMPASAS, LA SALLE, LAVACA, LEE, LEON, LIBERTY, LIMESTONE, LIVE OAK, LLANO, MATAGORDA, MAVERICK, MCLENNAN, MEDINA, MILAM, MONTGOMERY, NAVARRO, NUECES, ORANGE, POLK, REFUGIO, ROBERTSON, ROCKWALL, SAN PATRICIO, STARR, TARRANT, TAYLOR, THROCKMORTON, TRAVIS, UPTON, UVALDE, VAL VERDE, VICTORIA, WASHINGTON, WEBB, WHARTON, WILLACY, WILLIAMSON, ZAPATA, ZAVALA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, BORDEN, COOKE, CRANE, CROSBY, ELLIS, FALLS, HILL, LUBBOCK, PECOS, REAL, REEVES, STONEWALL, TERRELL, WALLER, WARD, WILSON COUNTIES.

REMARKS. THE TYPICAL FORM OF THIS SPECIES SHOWS THE WIDEST DISTRIBUTION OF ANY TERRESTRIAL SNAIL IN TEXAS. THE VARIETY OF HABITATS THAT THE SPECIES OCCUPIES OFFERS A LOGICAL EXPLANATION FOR ITS EXTENDED RANGE. IT OCCASIONALLY OCCUPIES AN ARBOREAL HABITAT; ALSO LIVING IN BEACH DRIFT DEBRIS LEFT BY AN UNUSUALLY HIGH TIDE; IN LEAF MOLD OF THE FORESTS OF EAST TEXAS; IN WELL KEPT LAWNS IN THE HOUSTON AREA; ON CACTI IN THE SEMI-ARID AREA OF CAMERON COUNTY.

POLYGYRA TEXASIANA IS THE CHARACTERISTIC LAND SNAIL OF TEXAS, WHERE IT IS WIDELY DISTRIBUTED AND OFTEN OCCURS IN LARGE POPULATIONS. THE STUDY OF ITS VARIANTS AND THEIR DISTRIBUTION IS OF UNUSUAL INTEREST. ACCORDING TO DR. J. BEQUAERT (PERSONAL COMMUNICATION), FOUR FORMS OF THE SPECIES ARE SUFFICIENTLY DISTINCT TO BE RANKED AS SUBSPECIES, AND THREE OF THESE OCCUR IN THE GULF COAST PLAIN AREA. THIS TREATMENT OF THE COMPLEX AND THE NOMENCLATURE USED HERE DIFFER RADICALLY FROM THOSE NOW IN GENERAL USE AND PARTICULARLY FROM THOSE OF H. A. PILSBRY'S MANUAL OF NORTH AMERICAN LAND MOLLUSKS. FOR THIS REASON DR. BEQUAERT SUGGESTED THAT THE WRITER INCLUDE IN THIS DISSERTATION THE FOLLOWING BRIEF STATEMENT OF HIS CONCLUSIONS.

"P. TEXASIANA IS SO VARIABLE IN ALL SHELL CHARACTERISTICS THAT A LOGICAL AND PRACTICAL INTERPRETATION OF ITS INFRASPECIFIC VARIATION IS MOST DIFFICULT. MANY OF THE VARIATIONS OF SHELL CHARACTERS ARE OF RELATIVELY MINOR IMPORTANCE OR OCCUR ONLY SPORADICALLY AS INDIVIDUAL VARIANTS OVER MUCH OF THE TOTAL RANGE OF THE SPECIES, BEING THEN UNSUITABLE FOR THE RECOGNITION OF RECOGNIZABLE SUBSPECIFIC ENTITIES. AFTER STUDYING THOUSANDS OF SHELLS FROM MANY POPULATIONS, THROUGHOUT THE TOTAL RANGE OF THE SPECIES, I CONCLUDED THAT ONLY THE FOUR FORMS LISTED BELOW CAN BE RECOGNIZED CONSISTENTLY (IN SPITE OF OCCASIONAL TRANSITIONAL SPECIMENS), AND SHOULD BE GIVEN SUBSPECIFIC STATUS. EACH OF THE FOUR HAS ITS OWN GEOGRAPHICAL DISTRIBUTION, ALTHOUGH THEY MAY OVERLAP WHERE THEY MEET.

"1. TYPICAL P. TEXASIANA OCCUPIES THE MAJOR PART OF THE RANGE OF THE COMPLEX, THROUGHOUT EAST AND CENTRAL TEXAS (FROM THE RED RIVER TO THE RIO GRANDE, AND FROM THE SABINE RIVER AND THE GULF TO THE 100TH MERIDIAN), EXTENDING INTO PARTS OF LOUISIANA, ARKANSAS AND OKLAHOMA. IT IS CHARACTERIZED

BY THE POSITION AND SHAPE OF THE TEETH IN THE APERTURE OF THE SHELL: THE TWO OUTER LIP TEETH ARE CLOSE TOGETHER, SEPARATED BY A NOTCH AS DEEP AS WIDE; THE TWO BRANCHES OF THE V-SHAPED PARIETAL TOOTH ARE LOW AND SLANT GRADUALLY AT THE ENDS.

"2. P. TEXASIANA TRIODONTOIDES IS RESTRICTED TO THE CLOSE VICINITY OF THE GULF IN THE NORTHEASTERN SECTION; PUBLISHED RECORDS FROM ELSEWHERE I CONSIDER ERRONEOUS OR BASED ON INDIVIDUAL FREAKS IN POPULATIONS OTHERWISE OF TYPICAL TEXASIANA. IT DIFFERS FROM THE OTHER THREE SUBSPECIES IN HAVING THE TWO OUTER TEETH FAR APART, THE NOTCH BETWEEN THEM BEING WIDER THAN DEEP; THE V-SHAPED PARIETAL TOOTH IS AS IN TYPICAL TEXASIANA.

"3. P. TEXASIANA POLITA IS FAIRLY COMMON IN THE EXTREME SOUTHEASTERN CORNER OF THE STATE; IT EXTENDS BEYOND THE RIO GRANDE INTO THE MEXICAN STATES OF TAMAULIPAS AND NUEVO LEON. THE LONGER BRANCH (NEAREST THE UMBILICUS) OF THE PARIETAL TOOTH IS STRONGLY RAISED INTO A CONVEX CREST WHICH FALLS OFF ABRUPTLY NEAR THE OUTER END; THE SHORTER BRANCH IS LOW AS IN TYPICAL TEXASIANA; THE TWO OUTER LIP TEETH ARE AS IN TYPICAL TEXASIANA.

"4. P. TEXASIANA TAMALIPASENSIS IS PECULIAR TO WEST TEXAS (WEST OF THE 100TH MERIDIAN AND SOUTH OF THE PANHANDLE), EXTENDING SOMEWHAT FARTHER SOUTHEAST ALONG THE RIO GRANDE. IT IS NOT DEFINITELY KNOWN FROM MEXICO (IN SPITE OF THE NAME). THE LONGER BRANCH OF THE V-SHAPED PARIETAL TOOTH IS RAISED INTO A CONVEX CREST AS IN T. POLITA; BUT IN ADDITION TO THE SHORTER BRANCH IS MUCH THICKENED, WITH A MORE OR LESS PRONOUNCED SWELLING NEAR THE OUTER END; THE TWO OUTER LIP TEETH ARE AS IN TYPICAL TEXASIANA."

POLYGYRA (ERYMODON) TEXASIANA TRIODONTOIDES (BLAND)

HELIX TRIODONTOIDES T. BLAND, 1861, ANN. LYC. NAT. HIST., NEW YORK, VII, P. 424, PL. IV, FIGS. 11-12.

POLYGYRA TRIODONTOIDES PILSBRY, 1940, LAND MOLL. N. AMER., 1, PT. 2, P. 616, FIGS. 393A-B.

DISTRIBUTION. SPECIMENS EXAMINED FROM BRAZORIA, CHAMBERS, DE WITT, GALVESTON, HARDIN, HARRIS, JEFFERSON, LIBERTY, NUECES COUNTIES. PREVIOUS PUBLISHED RECORDS. NONE.

REMARKS. THIS SUBSPECIES VIES WITH P. TEXASIANA IN THE VARIETY OF HABITATS IT OCCUPIES. SOME SPECIMENS FROM HARRIS COUNTY APPROACH P. TEXASIANA IN SHELL CHARACTERS. THIS SUBSPECIES IS FREQUENTLY FOUND IN CERTAIN PARTS OF HOUSTON. IT IS PROBABLY RESTRICTED TO THE COASTAL AREAS OF THE AUSTRORIPARIAN AND TEXAN PROVINCES. THE FEW RECORDS FROM ELSEWHERE IN TEXAS ARE EITHER DOUBTFUL OR BASED ON BEACH DRIFT SHELLS.

POLYGYRA (ERYMODON) TEXASIANA POLITA (PILSBRY AND HINKLEY)

POLYGYRA POLITA PILSBRY AND HINKLEY, 1907, NAUTILUS, XXI, PT. 1, P. 38, PL. 5, FIGS. 11.

DISTRIBUTION. SPECIMENS EXAMINED FROM CAMERON, HIDALGO, STARR, VAL VERDE, WILLACY, ZAPATA COUNTIES.

REMARKS. THIS SUBSPECIES APPEARS TO INTERGRADE WITH TEXASIANA IN SOME COUNTIES. AFTER COMPARISON OF SPECIMENS, COLLECTED IN TEXAS SINCE 1957, WITH TYPES AND PARATYPES OF P. SCINTILLA, DR. BEQUAERT BELIEVES THIS TO BE IDENTICAL WITH P. T. POLITA.

.....TO BE CONTINUED

IN VOLUME 6, (4), NOVEMBER 1969, PAGE 34 OF THE TEXAS CONCHOLOGIST, MRS. A. SPEERS AND I REPORTED THIS MINUTE SPECIES FOR THE FIRST TIME FOR TEXAS. SINCE THAT TIME NO NEW MATERIAL HAS COME TO LIGHT AND THE SPECIES MUST BE CONSIDERED RARE ALONG THE TEXAS COAST, WHERE IT IS KNOWN FROM GALVESTON, PORT ARANSAS AND PORT ISABEL. ALTHOUGH RESEMBLING CLOSELY A SMALL TURBONILLA, GRAPHIS CAN IMMEDIATELY BE RECOGNIZED BY ITS REGULARLY SHAPED NUCLEUS, WHICH IS TOTALLY DIFFERENT FROM THE NUCLEUS OF TURBONILLA.

LIVE MATERIAL IS KNOWN FROM PORT ISABEL (SCRAPED WITH ALGAE FROM ROCKS) AND ALSO A SINGLE LOT OF A FEW SPECIMENS WAS DREDGED OFFSHORE GALVESTON. HOWEVER I AM NOT QUITE CERTAIN THAT THESE LATTER SHELLS BELONG TO THE SAME SPECIES.

THE PHOTOGRAPH OF A DEAD SPECIMEN COLLECTED BY H. ODÉ FROM BEACHDRIFT AT PORT ARANSAS WAS TAKEN BY MR. F. VAN MORKHOVEN. IT SHOWS CLEARLY THE DEEP SUTURE, THE FINE SPIRAL SCULPTURE BETWEEN THE SLIGHTLY S SHAPED RIBLETS, THE SMOOTH NORMAL NUCLEUS AND THE GENERAL SLENDER APPEARANCE OF THE SHELL.

THE SPECIES WAS DESCRIBED BY BARTSCH (SMITHSON. MISCELL. COLL., VOL. 106, (20) 1947) FROM FLORIDA, BUT SEEMS TO HAVE ESCAPED THE ATTENTION OF MOST COLLECTORS ELSEWHERE.



GRAPHIS UNDERWOODAE BARTSCH 1947  
FROM BEACHDRIFT ALONG THE CAUSE-  
WAY AT PORT ARANSAS. SIZE: 3.28 MM.

IN "THE LIVING COWRIES," DR. C. M. BURGESS CONCLUDED THAT THE ANIMAL AND MANTLE CHARACTERISTICS OF CYPRAEA MUS LINN, 1758, WERE UNRECORDED, AND HE ALSO CONCLUDED THAT THE HABITAT WAS UNKNOWN OR UNRECORDED, SINCE IT HAPPENS THAT THREE TEXANS, TEMPORARILY TRANSPLANTED TO THE DUTCH ANTILLES AND VENEZUELAN COASTLINE, WHILE THEIR HUSBANDS WERE EMPLOYED BY OIL FIRMS, DID COLLECT THIS RARE CYPRAEA ALIVE AND ARE ABLE TO DISCUSS THE ANIMAL AND HABITAT, IT SEEMS APPROPRIATE THAT IT BE OFFICIALLY RECORDED IN THE "TEXAS CONCHOLOGIST".

THE INTERESTING THING ABOUT THIS PRESENT REPORT IS THAT THESE COLLECTORS HAVE PROVIDED TRADES OF THIS CYPRAEA TO A NUMBER OF TEXAS SHELL CLUB MEMBERS, AND IT IS ALSO KNOWN THAT ONE OF THE COLLECTORS PROVIDED SPECIMENS IN ALCOHOL TO PROFESSIONAL CONCHOLOGISTS. HOWEVER, IT WAS ONLY RECENTLY THAT ONE WAS ASKED ABOUT THE ANIMAL AND DESCRIPTION OF HABITAT. WITH SURPRISE, MRS. ALICE MULLEN, NOW OF PANAMA AND FORMERLY OF BEAUMONT, REPLIED THAT SHE HAD NEVER THOUGHT MUCH ABOUT IT, THAT NO ONE HAD EVER ASKED HER ABOUT THE ANIMAL. THE OTHER TWO TEXANS ARE MRS. ELIZABETH JOHNSON AND MRS. MAGGIE ROSS.

THE ANIMAL, ACCORDING TO MRS. MULLEN, IS A TRANSPARENT GRAY. WITH THE ANIMAL EXPOSING ITS MANTLE, THE DESIGN OF THE SHELL COULD BE FAINTLY SEEN. SHE DOES NOT NOW REMEMBER WHETHER THERE WERE ANY NOTICEABLE PAPILLAE, BUT SHE REMEMBERS THE MANTLE AS THIN AND RATHER SMOOTH. THE TRIO OF TEXANS BEGAN TO LOOK FOR THIS RATHER RARE COWRIE ALIVE AFTER FINDING DEAD SPECIMENS ON THE BEACH OF A LITTLE BAY ON THE VENEZUELAN COAST OPPOSITE ARUBA. NO OTHER SHELLS WERE FOUND THERE ALIVE, REPORTS MRS. MULLEN. THE BAY WAS FROM 2 INCHES DEEP TO KNEE DEEP IN THE AREA WHERE THE CYPRAEA MUS WERE COLLECTED. THERE WERE NO ROCKS, BUT THE AREA WAS FILLED WITH A KIND OF EEL GRASS. THE LAGOON WAS EASY TO SILT AND MUDDY, SO THE COLLECTORS WALKED UPSTREAM WITH THE CURRENT AT DUSK, SOMETIMES SEEING THE CYPRAEA, SOMETIMES FEELING THEM WITH THEIR FEET. THIS WAS SOME SIX YEARS AGO, BUT OTHER SPECIMENS HAVE BEEN COLLECTED AT THE SAME LOCATION RECENTLY BY FRIENDS.

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REVIEW

BY H. ODÉ

MOLLUSCAN COMMUNITIES OF BEAUFORT, NORTH CAROLINA, BY SAMUEL O. BIRD, IN: BULLETIN AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, VOL. 54 (9), P. 1651-1676.

THIS PAPER WILL ALLOW A BETTER COMPARISON OF THE FAUNAS OF THE COAST OF TEXAS WITH THOSE OF THE CAROLINAS. FROM THE EVIDENCE PRESENTED THERE CAN REMAIN LITTLE DOUBT THAT BOTH FAUNAS ARE VERY SIMILAR INDEED. AMONG THE 106 SPECIES LISTED ONLY A FEW ARE NOT FOUND IN TEXAS. LIKewise A SOMEWHAT GREATER NUMBER OF SPECIES, COMMON IN TEXAS BAY ENVIRONMENT IS NOT REPORTED FOR THE BAYS OF BEAUFORT (F. I. CYRTOPLEURA COSTATA, NASSARIUS ACUTUS, TECTONATICA PUSILLA). WHETHER THE LACK OF VITRINELLIDS OTHER THAN ADEORBIS SUPRANITIDUS (= CYCLOSTREMISCUS PENTAGONUS) IS REAL OR DUE TO SAMPLING TECHNIQUE CANNOT BE DECIDED HERE. ALSO PUZZLING IS THE SMALL NUMBER OF

CONTINUED ON PAGE 56.....



AN OPEN LETTER TO THE OFFICERS , DIRECTORS AND MEMBERS OF THE HOUSTON CONCHOLOGY SOCIETY :

I AM ONE OF THE SMALL MINORITY GROUP WITHIN THIS CLUB. WE ARE KNOWN AS SHELL-CRAFTERS .

I HAVE NO DESIRE TO CREATE ANY DISSENSION WITHIN THE SOCIETY. NEITHER DO I QUESTION THE RIGHT OF THE BOARD IN PASSING THE MOTION IN WHICH WE ARE ACCUSED OF USING THE PRESTIGE OF THE SOCIETY FOR PERSONAL GAIN. I DO QUESTION THE FAIRNESS OF NOT ALLOWING ANY OF US TO APPEAR BEFORE THE BOARD TO PRESENT OUR VIEWS.

THE MOTION MENTIONS THE INTERNAL REVENUE DEPARTMENT'S OPINION. THE REVENUE DEPARTMENT , AS ALL OF YOU KNOW , DOES NOT GIVE A RULING PRIOR TO THE FILING OF A RETURN. THEY DO GIVE AN OPINION - - - BUT ONLY ON REQUEST. WE WOULD LIKE TO SEE A COPY OF THE LETTER REQUESTING AN OPINION - - - IF ONE IS AVAILABLE - - - MERELY TO SEE IF SOME OF THE FACTS WERE ACCIDENTLY OMITTED.

I AM WILLING TO DISCUSS THE MATTER OF PERSONAL GAIN WITH THE REVENUE DEPARTMENT , WITH ANY BOARD MEMBER , OR ANY MEMBER OF THE SOCIETY.

IT IS TRUE THAT \$1500.00 WAS REALIZED FROM THE SALE OF SHELL-CRAFT AT THE LAST SHARPSTOWN EXHIBIT. \$300.00 , 20% WENT TO THE LIBRARY FUND OF THE SOCIETY. THE SHORT'S PART WAS IN THE NEIGHBORHOOD OF \$400.00 , OR \$200.00 TO EACH OF US. THIS \$200.00 REPRESENTS ONE YEARS WORK THAT INCLUDES FIVE EIGHT HOUR DAYS AT SHARPSTOWN. ONE DAY TO GET READY - 3 DAYS AT THE CENTER - AND 1 DAY TO PACK , GET THINGS HOME AND BACK IN PLACE .

ALSO IT INCLUDES THE COST OF BUYING AND COLLECTING THE MATERIALS. IF ANY OF YOU ARE WILLING TO GIVE 30 MINUTES A DAY FOR A YEAR - COLLECTING - CLEANING AND POLISHING SHELLS - - NOT ARRANGING THEM - - I AM SURE THAT I CAN GET THIS HIGHLY PROFITABLE JOB FOR YOU .

WE HAVE BEEN SO CONCEITED OR SO STUPID TO THINK THAT WE HAD SOMETHING TO OFFER THE CLUB IN THE FIELDS OF LITTLE IMAGINATION - - SMALL TALENTS AND TREMENDOUS ABILITY TO GENERATE AN INTEREST IN SHELLS WHERE NONE EXISTED. . . . . ESPECIALLY AMONG THE YOUTH .

WE DO NOT DO PRODUCTION LINE SHELL-CRAFT. INSTEAD WE ATTEMPT TO DO UNUSUAL AND ORIGINAL THINGS. MRS. SHORT , IN MY OPINION , DOES BEAUTIFUL FLORAL ARRANGEMENTS AND PLAQUES. I ADMIT TO BEING SLIGHTLY PREJUDICED IN HER FAVOR.

I ATTEMPT TO DO FUN THINGS AND ARRANGEMENTS OF CURRENT EVENTS - - - SUCH AS MEN ON THE MOON . . . AND A MOBILE - - - JUST FINISHED , OF THE RECENT RACE BETWEEN THE AUSTRALIAN AND AMERICAN YACHTS. THE BOATS CHASE EACH OTHER CONTINUALLY - IF THERE IS AIR MOVEMENT. ALSO , A COLLECTION OF SHELLCRAFT - - BASED ON NURSERY RHYMES HAS BEEN COMPLETED , WHICH I BELIEVE WILL COMPETE FAVORABLY WITH OTHER DISPLAYS IN ATTRACTING PUBLIC ATTENTION .

MRS. SHORT AND I WILL BE THE FIRST TO ADMIT THAT WE HAVE MADE TREMENDOUS PROFITS FROM SHELLS - - - NOT IN MONEY - - - BUT IN THE SATISFACTION OF CREATING SOMETHING WITH OUR HANDS - - - IN THE MAKING OF NEW FRIENDS AND SEEING THE EXPRESSIONS ON THE FACES OF THE VERY YOUNG AS WE POINT OUT AND TELL THE

LEGEND OF THE SAND DOLLAR; PRIDE AT HAVING BEEN INVITED TO EXHIBIT AT THE SHELL FAIR IN PORT ISABEL AT WHICH WORLD FAMOUS JUDGES AWARDED US SEVEN RIBBONS.

AT THE JOSKE'S EXHIBIT TWO YEARS AGO PROFIT WAS - THAT ON SAN JACINTO DAY - A SCHOOL HOLIDAY - 2200 PEOPLE - - MOSTLY SCHOOL CHILDREN VISITED THE EXHIBIT. WE FELT THAT OUR DISPLAY DID COMPETE FAVORABLY WITH OTHERS - - EXCEPT THE MICROSCOPE THAT HAD BEEN SET UP SO THAT YOUNGSTERS COULD LOOK AND SEE THE TINY PERFECT SHELLS. THE KIDS REALLY WENT FOR THAT.

MRS. SHORT PASSED UP AN OPPORTUNITY FOR PROFIT AT THE JOSKE SHOW WHEN SHE REFUSED TO SELL AN ARRANGEMENT FOR \$5.00 THE ARRANGEMENT WAS IN A CONTAINER THAT HAD COST HER \$7.50.

ADDITIONAL PROFIT CAME FROM BEING ASKED TO DO - - - SHOW AND TELL - - - PROGRAMS AT BAYOU MANOR, VARIOUS GARDEN CLUBS, PEO CHAPTERS AND THE GALVESTON SHELL CLUB. WE HOPE TO DO A PROGRAM AT HOLLY HALL BEFORE CHRISTMAS AND EACH RESIDENT WILL BE GIVEN A SHELL-CRAFT GIFT. STILL MORE PROFIT FROM SHARPSTOWN CENTER WHEN WE GAVE SMALL SHELL THINGS TO YOUNGSTERS WHO SHOW INTENSE INTEREST AND TO LADIES IN WHEEL CHAIRS, ON CRUTCHES OR HANDICAPPED IN ANY MANNER INCLUDING AGE. WE HOPE TO CONTINUE TO PROFIT IN THIS MANNER.

IN CONCLUSION - - - BACK TO MOTION AS PUBLISHED - - - WE NOTE THAT THE MOTION WAS PASSED BY MAJORITY VOTE - - - NOT UNANIMOUSLY. - - - WOULD IT BE OUT OF LINE TO ASK HOW MANY DIRECTORS VOTED AND HOW THE VOTE STOOD? WAS IT 8 TO 1 - - - 6 TO 3 - - - OR 5 TO 4? THE SUPREME COURT SUPPLIES THAT INFORMATION ABOUT THEIR DECISIONS.

THESE REMARKS APPLY ONLY TO MRS. SHORT AND MYSELF. WE ARE NOT ANGRY - - - JUST A LITTLE EMBARRASSED.

THIS IS NOT AN APPEAL FOR ANYONE TO CHANGE THEIR OPINION. - - - WE APPRECIATE THE OPPORTUNITY TO PRESENT OUR VIEWS - - - FROM THE OTHER SIDE OF THE SHELL.

HARRY B. SHORT

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.....CONTINUED FROM PAGE 54

REPORTED PYRAMIDELLIDS. ONE OF THESE, REPORTED AS PYRAMIDELLA CRENULATA, IS ODOSTOMIA TERES BUSH, WHICH IS A COMMON SPECIES IN GALVESTON WEST BAY AND A COMMON CONSTITUENT OF TEXAS BEACHDRIFT. APART FROM THIS MISIDENTIFICATION THERE ARE SOME OTHERS INDICATED BY THE FIGURES. DIPLODONTA PUNCTATA LOOKS VERY SIMILAR TO DIPLODONTA SOROR C. B. ADAMS; ALIGENA ELEVATA PROBABLY IS ALIGENA TEXASIANA HARRY AND MYSELLA PLANULATA APPEARS TO ME TO BE A DIFFERENT SPECIES, WHICH IS ALSO, BUT RARELY FOUND IN TEXAS. HOWEVER THESE ERRORS DO NOT CHANGE THE GENERAL CONCLUSIONS OF THE PAPER.

ONE MAY REGRET THAT THE AUTHOR DOES NOT MENTION SIMILAR STUDIES BY PARKER OF THE COASTAL FAUNAS IN TEXAS. A SOMEWHAT MORE EXTENSIVE EXPLICATION OF THE STATISTICAL METHODS USED BY THE AUTHOR WOULD HAVE INCREASED THE VALUE OF THIS PAPER.

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Texas

# CONCHOLOGIST

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## NOTES & NEWS

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### NEXT MEETING

SOCIETY MATTERS WILL BE DISCUSSED DURING OUR NEXT MEETING WHICH WILL BE HELD WEDNESDAY, THE 24TH OF FEBRUARY AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE IN HERMANN PARK. ON THE PROGRAM ARE: REPORT BY THE NOMINATING COMMITTEE, DISCUSSION OF OUR BYLAWS, THE SALE OF SHELLCRAFT AT OUR SHELL FAIR BY MEMBERS, AND SUCH MATTERS AS THE MEMBERSHIP WISHES TO BRING TO THE ATTENTION OF THE OFFICERS AND THE BOARD.

### REPORT JANUARY MEETING

THE JANUARY MEETING OF THE SOCIETY WAS ATTENDED BY ABOUT 40 MEMBERS AND FOUR VISITORS.

MINUTES OF THE PREVIOUS MEETING WERE READ AND APPROVED WITHOUT CORRECTIONS.

MR. CHARLES WELCH OF THE CITY OF PASADENA - CITY PLANNING DEPARTMENT, CAME BEFORE THE BODY WITH A PRESENTATION FOR CONSERVATION OF ARMAND'S BAYOU, OTHERWISE KNOWN AS MIDDLE BAYOU. HIS MAIN CAUSE WAS TO SECURE SUPPORT FOR THE ESTABLISHMENT OF A PARK AREA ENCLOSING THE SHORELINE OF THE BAYOU TO PRESERVE IT IN ITS NATURAL STATE.

MR. WELCH WAS WELL RECEIVED AS HE URGED WRITING OF SUPPORT LETTERS TO MAYOR CLYDE DOYAL AT PASADENA, TEXAS, CITY HALL.

A MOTION WAS MADE AND SECONDED FOR THE SOCIETY TO SEND A LETTER TO MAYOR DOYAL SUPPORTING THE PARK PLAN. MOTION WAS CARRIED BY VOICE VOTE.

PRESIDENT HELMER ODÉ APPOINTED A NOMINATING COMMITTEE CONSISTING OF CHARLIE DOH, SAM MIRON AND DOROTHY KISTER, TO NOMINATE A SLATE OF OFFICERS.

DR. SUTOW INTRODUCED DR. T. E. PULLEY WITH THE PROGRAM FOR THE EVENING.

DR. PULLEY ENTERTAINED THE CLUB MEMBERS WITH AN INTERESTING TALK ON THE HISTORY OF SHELL COLLECTING, CONCHOLOGICAL PUBLICATIONS, PERSONALITIES AND THE SWEEP OF EVENTS IN CONCHOLOGY FROM ANTIQUITY UP TO DATE. HIS TALK WAS AT THE SAME TIME INFORMATIVE, AMUSING, COLORFUL AND EXCITING. WE ALL ENJOYED HIS VISIT.

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IN THE RECENT NOVEMBER-DECEMBER ISSUE OF "ARMCO TODAY" A WELL WRITTEN SUMMARY OF OUR MEMBERS WORK ON THE MOLLUSK FAUNA SURVEY FOR THE NORTHWEST GULF OF MEXICO APPEARED. LLOYD MEISTER, OUR VICE-PRESIDENT WAS INTERVIEWED BY A COMPANY REPORTER. THE RESULT IS A WELL ILLUSTRATED, VERY READABLE ARTICLE, ENTITLED "A LABOR OF LOVE".

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY COLUMBELLIDAE (CONTINUED) . . .

ANACHIS TRANSLIRATA RAVENEL. THIS CLEARLY DIFFERENT LOOKING SPECIES HAS A DISTRIBUTION WHICH DIFFERS FROM THAT OF A. SEMPLICATA. IT APPEARS TO BE MOST COMMON ON THE EAST TEXAS BEACH AND LESS SO FARTHER WEST. FORMERLY THIS SPECIES WAS KNOWN IN TEXAS AS ANACHIS AVARA SIMILIS. BOTH A. SEMPLICATA AND A. TRANSLIRATA ARE RARE IN OFFSHORE DREDGINGS WHERE THEY ARE REPLACED BY OTHER SPECIES.

FIGURED IN: 1, 6

PREVIOUS REFERENCES: 18, 19

LOCALITIES: ALL ALONG THE TEXAS COAST IN COASTAL BAYS.

ANACHIS IONTHA RAVENEL. THIS IS ONE OF THE SPECIES WHICH REPLACES BOTH PREVIOUSLY MENTIONED SPECIES ON THE OFFSHORE SHELF OF TEXAS. IT HAS ONLY RARELY BEEN COLLECTED ALIVE ON THE TEXAS BEACH, BUT LIVES ON THE 7 1/2 FATHOM REEF OFF PADRE ISLAND LESS THAN TWO MILES OFFSHORE. DEAD SHELLS ARE NOT TOO UNCOMMON AT PORT ISABEL. LISTED AS PYRENE ALBELLA IONTHA RAVENEL IN REF. 4

FIGURED IN: 4

PREVIOUS REFERENCES: LISTED BY HARRY FOR GALVESTON

LOCALITIES: BOLIVAR PENINSULAR (ODÉ), PORT ARANSAS, PORT ISABEL (SPEERS).

MITRELLA LUNATA SAY 1826. A VERY COMMON SPECIES USUALLY FOUND TOGETHER WITH A. OSTREICOLA MELVILL AND A. OBESA C. B. ADAMS. IT LIVES ABUNDANTLY IN MOST COASTAL BAYS AND IS COMMON IN DRIFT ALONG THE ENTIRE TEXAS COAST. ALSO COMMON IN DREDGE MATERIAL OFFSHORE GALVESTON. HOWEVER THE OFFSHORE SHELLS ARE NOTICEABLY DIFFERENT IN SHAPE FROM THE BAY FORM IN THAT THEY ARE SMALLER AND MORE SLENDER. MOREOVER THEY HAVE A MUCH FINER AND MORE ELABORATE COLOR PATTERN. THIS FORM IS SOMETIMES FOUND AT SARGENT.

FIGURED IN: 1, 3, 4, 11.

PREVIOUS REFERENCES: MANY

LOCALITIES: ABUNDANT IN ALL TEXAS COASTAL BAYS AND IN BEACH DRIFT.

### FAMILY CUSPIDARIIDAE.

THIS WIDESPREAD FAMILY WHOSE MEMBERS MAINLY INHABIT DEEPER WATER IS REPRESENTED ON THE TEXAS BEACH BY ONLY A SINGLE SPECIES.

CARDIOMYA ORNATISSIMA ORBIGNY 1842. ONLY A FEW VALVES OF THIS OFFSHORE RATHER COMMON SPECIES HAVE SO FAR BEEN COLLECTED ON TEXAS BEACHES. IT IS A HIGHLY VARIABLE SHELL WHICH PROBABLY HAS BEEN DESCRIBED UNDER A LARGE VARIETY OF NAMES. OUR DESIGNATION COULD BE IN ERROR AND FUTURE STUDIES OF DREDGED MATERIAL MAY SHOW THAT MORE THAN A SINGLE SPECIES IS INVOLVED. OFFSHORE MATERIAL SHOWS AMAZING VARIABILITY. THE MAJORITY OF TEXAS BEACH SPECIMENS COMES FROM PORT ARANSAS AND PORT ISABEL, BUT THE SPECIES IS ALSO KNOWN FROM BEACHDRIFT COLLECTED AT FREEPORT.

FIGURED IN: 3,4

PREVIOUS REFERENCES: 17, 18, LISTED BY HARRY.

LOCALITIES: SAN LUIS PASS, FREEPORT, PORT ARANSAS, PORT ISABEL.

FAMILY TURRITELLIDAE.

TWO VERY SIMILAR SPECIES REPRESENT THIS FAMILY ON THE TEXAS BEACH.

VERMICULARIA FARGOI OLSSON 1951. FRAGMENTS OF THIS REMARKABLE SNAIL ARE QUITE COMMONLY COLLECTED AROUND PORT ARANSAS AND PORT ISABEL BUT LESS OFTEN IN BEACHDRIFT AT GALVESTON AND FREEPORT. TO OUR KNOWLEDGE NO LIVE SHELLS ARE KNOWN FROM THE TEXAS COAST, SO THAT IT IS DOUBTFUL WHETHER THE SPECIES AT PRESENT LIVES IN TEXAS. THE WORN FRAGMENTS CONSIST ALMOST ALWAYS OUT OF THE TIGHTLY COILED TURRITELLA STAGE OF THE SHELL FROM WHICH THE LOOSE UNCOILED PART IS BROKEN OFF. THIS UNDOUBTEDLY ACCOUNTS FOR A NUMBER OF REFERENCES TO THE GENUS TURRITELLA FOR THE TEXAS BEACH. THE SPECIES MUST HAVE LIVED MAINLY IN BAY ENVIRONMENT SINCE IT HARDLY EVER OCCURS IN OFFSHORE DREDGINGS. OFFSHORE IT IS REPLACED BY V. SPIRATA.

FIGURED IN: 1, 4, 11

PREVIOUS REFERENCES: 11, 13, 19, 20

LOCALITIES: ENTIRE TEXAS COAST BUT ABUNDANT ONLY IN THE SOUTH.

VERMICULARIA SPIRATA PHILLIPPI 1836. WE HAVE NO REPORTS OF BEACHFINDS OF THIS SPECIES FOR GALVESTON-FREEPORT ARE OF THE TEXAS BEACH. ALONG PADRE ISLAND IT IS SOMETIMES FOUND IN OLD CHUNKS OF CORAL OR ROCKS WASHED IN DURING HEAVY STORMS, ESPECIALLY IN THE LITTLE SHELL AND BIG SHELL AREAS OF THAT BEACH.

FIGURED IN: 1, 18

PREVIOUS REFERENCES: 18 (SOMETIMES CONFUSED WITH PREVIOUS SPECIES).

LOCALITIES: PADRE ISLAND.

FAMILY LAMELLARIIDAE.

A FAMILY OF SNAILS WHOSE INCONSPICUOUS SHELLS SO FAR HAVE BEEN RARELY COLLECTED ON TEXAS BEACHES.

LAMELLARIA C.F. LEUCOSPHAERA . TWO SMALL SPECIMENS OF THIS FRAGILE SHELL ARE SO FAR THE ONLY SPECIMENS KNOWN TO US. ONE WAS COLLECTED DEAD ON MUSTANG ISLAND, THE OTHER WAS TAKEN ALIVE FROM THE INLET AREA AT PORT ISABEL. THE COLOR OF THE ANIMAL WAS WHITE. BOTH WERE COLLECTED BY A. SPEERS. IN THE COLLECTION OF THE HOUSTON MUSEUM OF NATURAL SCIENCE IS PRESENT ANOTHER DEAD SPECIMEN, DREDGED OFFSHORE GALVESTON, WHICH IS PROBABLY THE SAME SPECIES.

FIGURED IN:

PREVIOUS REFERENCES:

LOCALITIES: MUSTANG ISLAND, PORT ISABEL.

ONE SUMMER DAY, IN THE EARLY 1950S, I TOOK THE KIDS FOR A WALK ALONG THE SHORES OF JAPAN SEA OFF THE NORTHWEST CORNER OF KYUSHU. THE WAVES WERE QUIET SO I WENT WADING. IMMEDIATELY, I WAS STUNG BY NUMEROUS TINY CREATURES SWARMING NEAR THE SURFACE OF THE WATER. I DIDN'T KNOW WHAT THEY WERE - BUT THE STINGS SMARTED FOR QUITE A WHILE. I HAD A RING OF RED MARKS AROUND EACH ANKLE.

ALMOST 20 YEARS LATER, I MIGHT HAVE FOUND THE ANSWER. THE DECEMBER 19, 1969 ISSUE OF SCIENCE CARRIES A COVER PICTURE SHOWING NUDIBRANCHS (GLAUCILLA) FLOATING UPSIDE DOWN NEAR THE SEAWATER SURFACE. THOMPSON AND BENNETT, IN THEIR ARTICLE "PHYSALIA NEMATOCYSTS: UTILIZED BY MOLLUSKS FOR DEFENSE", SCIENCE 166:1532-1533, DESCRIBE STINGS (SIMILAR TO THOSE I SUFFERED) OCCURRING AMONG SURF-BATHERS IN AUSTRALIA. APPARENTLY, THE CULPRITS WERE THE NUDIBRANCHS GLAUCUS ATLANTICUS AND GLAUCILLA MARGINATA. IT IS POSTULATED THAT THESE NUDIBRANCHS "UTILIZE FOR DEFENSE (AGAINST FISH AND PERHAPS OTHER PREDATORS) THE NEMATOCYSTS (STINGING CELLS) OF THE COELENTERATES UPON WHICH THEY PREY". THE PORTUGUESE-MAN-OF-WAR IS ONE SUCH COELENTERATE. SINCE THESE NUDIBRANCHS OCCUR WIDELY IN WARM SEAS, INCLUDING THOSE AROUND JAPAN IT IS POSSIBLE THAT MY ENCOUNTER MANY YEARS AGO INVOLVED THESE MOLLUSKS.

\* \* \* \* \*

A "MALACOLOGICAL" MAP OF AUSTRALIA IS SHOWN IN THE JULY, 1970 ISSUE OF HAWAIIAN SHELL NEWS. SIX PROVINCES ARE DEPICTED. IN CHECKING ANOTHER REFERENCE SOURCE, THESE PROVINCES ARE DESCRIBED BY B. C. COTTON (SOUTH AUSTRALIAN MOLLUSCA; ARCHAEGASTROPODA, 1959. PAGE 18) AS FOLLOWS:

1. DAMPIERIAN - FROM CAPE YORK, NORTH AUSTRALIA TO GERALDTON, WESTERN AUSTRALIA.
2. FLINDERSIAN - FROM GERALDTON TO MELBOURNE, VICTORIA, INCLUDING NORTH AND WEST COASTS OF TASMANIA.
3. MAUGEAN - EAST COAST OF TASMANIA.
4. PERONIAN - FROM MELBOURNE ALONG THE EASTERN COAST OF VICTORIA, NEW SOUTH WALES AND SOUTH QUEENSLAND TO GLADSTONE.
5. BANKSIAN - GLADSTONE TO CAPE YORK.
6. SOLANDERIAN - THE GREAT BARRIER REEF.

\* \* \* \* \*

IN THE SUPPLEMENTARY SECTION OF VOLUME IV OF JOHNSONIA, THERE IS APPENDED AN INTERESTING COMMENTARY ENTITLED "ANALYSIS OF SPECIES AND SYNONYMS". IN THE FOUR PUBLISHED VOLUMES OF JOHNSONIA THERE HAVE BEEN DESCRIBED NOW A TOTAL OF 562 SPECIES AND SUBSPECIES OF MOLLUSKS FROM THE WESTERN ATLANTIC. FOR THESE 562 SPECIES, 918 SYNONYMS WERE INCLUDED. A TOTAL OF 306 HAD NO SYNONYMS; 89 OF THE 306 WERE NEWLY DESCRIBED SPECIES. THE ANALYSIS BY THE EDITOR INDICATES THAT THE "... SPECIES WITH THE LARGEST NUMBER OF SYNONYMS ARE EITHER: 1) COMMON, WIDELY DISTRIBUTED AND INTERTIDAL; 2) ATTACHED OR BORING; 3) BEAUTIFUL, CONSPICUOUS AND MUCH SOUGHT AFTER BY COLLECTORS". THE MOST SYNONYMS LISTED FOR A SINGLE SPECIES WAS 35 FOR MARTESIA STRIATA LINNAEUS.

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STENOSTREMA (EUCHEMOTREMA) LEAI ALICIAE (PILSBRY)

HELIX MONODON VAR. ALICIAE PILSBRY, 1893, MAN. CONCH., VIII, P. 152.

STENOTREMA MONODON ALICIAE PILSBRY, 1940, LAND MOLL. N. AMER.,  
I, PT. 2, PL. 679, FIGS. 421c.

STENOTREMA LEAI ALICIAE PILSBRY AND L. HUBRICHT, 1956, NAUTILUS,  
LXIX, PT. 3, P. 96.

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BEXAR, BRAZORIA,  
BRAZOS, BURLESON, CALHOUN, CAMERON, CHAMBERS, COMAL, CORYELL, DALLAS,  
FAYETTE, FORT BEND, GALVESTON, GONZALES, GRAYSON, HARDIN, HARRIS, JASPER,  
KARNES, KERR, LAVACA, LEON, LIBERTY, MATAGORDA, McLENNAN, NUECES, POLK,  
REFUGIO, ROBERTSON, SAN JACINTO, SAN PATRICIO, TRAVIS, TYLER, VICTORIA,  
WHARTON, WILLACY, WOOD COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BANDERA,  
BASTROP, BOWIE, BROOKS, CASS, ELLIS, GUADALUPE, JEFFERSON, MILAM, MOR-  
RIS, TITUS, WASHINGTON COUNTIES.

REMARKS. THIS SPECIES IS USUALLY FOUND UNDER DEAD LOGS IN SHADED  
AREAS, RARELY ELSEWHERE. WHEREVER IT OCCURS IT IS USUALLY ABUNDANT. ON  
THE BEACHES OF TEXAS THIS SPECIES REPRESENTS ALMOST ONE HALF OF THE BULK  
OF LAND SNAIL DRIFT; THE RECORDS FROM CAMERON AND WILLACY COUNTIES ARE  
ENTIRELY BASED ON SUCH DEAD BEACHDRIFT SHELLS. IT IS FAIRLY COMMON WITHIN  
THE HOUSTON CITY LIMITS.

PRATICOLELLA BERLANDIERIANA (MORICAND)

HELIX (HELOCOGONA) BERLANDIERIANA MORICAND, 1833, MEM. SOC. PHYS.  
HIST. NAT. GENEVA, VI, PT. 1, P. 537, PL. I, FIGS. 1A-B

PRATICOLELLA BERLANDIERIANA PILSBRY, 1940, LAND MOLL. N. AMER.,  
I, PT. 2, P. 694, FIGS. 427A-B.

DISTRIBUTION. SPECIMENS EXAMINED FROM ARANSAS, AUSTIN, BASTROP,  
BEE, BEXAR, BOSQUE, BRAZORIA, BRAZOS, BROOKS, BURLESON, CALDWELL, CAL-  
HOUN, CAMERON, COMAL, CORYELL, DE WITT, FAYETTE, GALVESTON, GONZALES,  
GRIMES, GUADALUPE, HAMILTON, HARDIN, HARRIS, HAYS, HIDALGO, JIM HOGG,  
JIM WELLS, KARNES, KENDALL, KENEDY, KLEBERG, LAVACA, LEE, LIBERTY, LIVE  
OAK, MATAGORDA, McLENNAN, MEDINA, MILAM, MONTGOMERY, NUECES, POLK,  
REFUGIO, ROBERTSON, SAN PATRICIO, STARR, TRAVIS, VICTORIA, WASHINGTON,  
WHARTON, WILLACY COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON,  
BANDERA, BELL, COLORADO, DALLAS, DUVAL, FORT BEND, GILLESPIE, GOLIAD,  
JACKSON, KERR, McMULLEN, VAL VERDE, WALLER, WILSON COUNTIES.

REMARKS. FOR THE PURPOSE OF THIS PAPER P. B. PACHYLOMA AND P. B.  
TAENIATA ARE CONSIDERED SYNONYMS OF P. BERLANDIERIANA, WITH WHICH THEY IN-  
TERGRADE COMPLETELY. WHEREVER THIS SPECIES EXISTS IT IS USUALLY VERY ABUN-  
DANT. THE WRITER HAS FOUND IT BY THE HUNDREDS ON GRASSES AND LEGUMINOUS  
HERBS ALONG THE RAILROAD RIGHT-OF-WAY IN CAMERON COUNTY. IT IS ALSO ABUN-  
DANT AND ALIVE IN DEBRIS OF BRAY'S BAYOU IN MacGREGOR PARK AND ELSEWHERE IN  
HOUSTON. THIS SPECIES OCCURS WITH P. GRISEOLA IN SOME AREAS.

PRATICOLELLA GRISEOLA (PFEIFFER)

HELIX GRISEOLA PFEIFFER, 1841, SYMB. HIST. HELIC., I, P. 41.

PRATICOLELLA GRISEOLA PILSBRY, 1940, LAND MOLL. N. AMER., I, PT. 2,  
P. 690, FIGS. 425A-D.

DISTRIBUTION. SPECIMENS EXAMINED FROM CAMERON, HARRIS, NUECES, WIL-  
LACY COUNTIES. MOST OF THE PREVIOUS PUBLISHED RECORDS FROM ELSEWHERE MAY HAVE  
BEEN BASED ON MIS-IDENTIFIED P. BERLANDIERIANA.

REMARKS. THE DISTRIBUTION OF THIS SPECIES IS PERHAPS LARGER THAN INDI-  
CATED BY THE RECORDS. IT OCCURS WITH P. BERLANDIERIANA IN SOME LOCALITIES. P.  
CAMPI IS HERE CONSIDERED A SYNONYM OF P. GRISEOLA; IT IS OFTEN ENCOUNTERED IN  
GARDENS IN THE HOUSTON AREA; BUT ITS OCCURRENCE THERE MAY BE DUE TO TRANSPORT  
BY MAN.

MESODON (MESODON) THYROIDUS (SAY)

HELIX THYROIDUS SAY, 1816, NICHOLSON'S BRIT. ENCY., 1ST AM. ED., II,  
PT. 2.

MESODON THYROIDUS PILSBRY, 1940, LAND MOLL. N. AMER., I, PT. 2,  
P. 706, FIGS. 431A-B AND 432A-I.

DISTRIBUTION. SPECIMENS EXAMINED FROM AUSTIN, BOWIE, BRAZORIA,  
BRAZOS, BURLESON, CALHOUN, CHAMBERS, COLORADO, DE WITT, FAYETTE, FORT  
BEND, GALVESTON, GONZALES, HARDIN, HARRIS, HAYS, JEFFERSON, LAVACA, LIBERTY,  
MATAGORDA, POLK, REFUGIO, ROBERTSON, TYLER, WASHINGTON, WHARTON COUNTIES.  
PREVIOUS PUBLISHED RECORDS FROM ANDERSON, BASTROP, CALDWELL, COLLIN, COMAL,  
DALLAS, ELLIS, GRAYSON, JACKSON, LEE, MORRIS, NUECES, ORANGE, SAN JACINTO,  
WALLER, WEBB, WILLIAMSON COUNTIES.

REMARKS. THIS SPECIES HAS ONE OF THE LARGEST RANGES OF ANY NORTH  
AMERICAN SNAIL, BEING FOUND FROM ONTARIO TO EAST TEXAS. IT HAS BEEN FOUND  
AT MANY LOCALITIES IN SOUTH TEXAS UNDER LARGE BRIDGES THAT PROVIDE SUITABLE  
MICROHABITATS. IT IS ALWAYS ASSOCIATED WITH DEAD LEAVES LEFT BY RIVER DRIFT  
IN THESE ARTIFICIAL HABITATS. IN TEXAS IT IS RESTRICTED TO THE AUSTRORIPARIAN,  
TEXAN AND EASTERN PORTION OF THE BALCONIAN PROVINCE. IT IS A COMMON SNAIL IN  
THE HOUSTON AREA.

TRIODOPSIS (TRIODOPSIS) VULTUOSA (GOULD)

HELIX VULTUOSA GOULD, 1848, PROC. BOSTON SOC. NAT. HIST. III, P. 39.

TRIODOPSIS VULTUOSA PILSBRY, 1940, LAND MOLL. N. AMER. I, PT. 2,  
P. 818, FIGS. 484B-D.

DISTRIBUTION. SPECIMENS EXAMINED FROM ANDERSON, ANGELINA, BASTROP,  
BEXAR, FAYETTE, FREESTONE, HARDIN, HARRIS, HOUSTON, JACKSON, LEE, LIBERTY,  
MARION, MILAM, NEWTON, POLK, ROBERTSON, SMITH, TYLER, WALKER, WOOD COUN-  
TIES. PREVIOUS PUBLISHED RECORDS FROM BOWIE, CHEROKEE, GALVESTON, HENDERSON,  
MORRIS, NUECES COUNTIES.

REMARKS. H. A. PILSBRY RECOGNIZES TWO SUBSPECIES OF VULTUOSA IN  
TEXAS: T. VULTUOSA COPEI AND T. VULTUOSA HENRIETTAE; AND HE REGARDS T. CRA-  
GINI AS SPECIFICALLY DISTINCT. HOWEVER, ACCORDING TO DR. BEQUAERT (PERSONAL  
COMMUNICATION) THESE THREE NAMES APPEAR TO BE BASED ON INDIVIDUAL VARIANTS  
ONLY OF T. VULTUOSA. THE TEXAS RECORDS OF ALL FOUR FORMS OF THE T. VULTUOSA  
COMPLEX ARE INCLUDED ON ONE MAP. THE ONLY APPARENT REQUIREMENT OF THIS SPECIES  
IS THAT OF LEAF MOLD AND SHADE PROVIDED BY THE OAK-PINE AREAS OF EAST TEXAS.  
THE SPECIES IS BY NO MEANS RARE IN THE HOUSTON CITY AREA.

THYSANOPHORA (THYSANOPHORA) HORNII (W. M. GABB)

HELIX HORNII W. M. GABB, 1866, AMER. JOUR. CONCH., II, PT. , P. 330,  
PL. XXI, FIG. 5.

THYSANOPHORA (THYSANOPHORA) HORNII (SIC.) H. A. PILSBRY, 1940, LAND  
MOLL. NORTH AMER., I, PT. 2, P. 986, FIGS. 574A (2 FIGS.)



DISTRIBUTION. SPECIMENS EXAMINED FROM BREWSTER, CAMERON, CULBERSON, EDWARDS, HIDALGO, JEFF DAVIS, LIVE OAK, PRESIDIO, SAN JACINTO, UVALDE, VAL VERDE COUNTIES. PREVIOUS PUBLISHED RECORDS FROM COMAL, FRIO, GALVESTON, MAVERICK, MEDINA, NUECES COUNTIES.

REMARKS. I HAVE NEVER TAKEN THIS SMALL "XEROPHYLE" ALIVE, BUT DR. BEQUAERT (PERSONAL COMMUNICATION) FOUND IT ALIVE IN LIVE OAK, UVALDE AND CAMERON COUNTIES. HOWEVER, IT IS ABUNDANT IN DRIFT IN CAMERON COUNTY. PILSBRY RECORDS IT ALSO FROM NEW MEXICO AND ARIZONA; AS WELL AS IN MEXICO FROM SONORA AND TAMAULIPAS SOUTHWARD TO JALISCO. IT IS ESSENTIALLY A MEXICAN SNAIL.

BULIMULUS (RABDOTUS) ALTERNATUS (SAY)

BULIMUS (SCULATUS) MARIAE ALBERS, 1850, DIE HELICEEN, P. 162.

BULIMULUS ALTERNATUS MARIAE PILSBRY, 1946, LAND MOLL. N. AMER., FIGS. 6A-D, F.

BULIMUS ALTERNATUS SAY, 1830, NEW HARMONY DISSEMINATOR, P. 25 ("MEXICO").

DISTRIBUTION. SPECIMENS EXAMINED FROM ATASCOSA, BEE, BROOKS, CAMERON, DIMMIT, DUVAL, FRIO, HIDALGO, JIM HOGG, JIM WELLS, KENEDY, KINNEY, KLEBERG, LASALLE, LIVE OAK, MAVERICK, McMULLEN, NUECES, REFUGIO, SAN PATRICIO, STARR, UVALDE, VAL VERDE, WEBB, WILLACY, ZAPATA, ZAVALA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM KARNES COUNTY.

REMARKS. THIS SPECIES OCCUPIES THE SAME ECOLOGICAL NICHE IN SOUTH TEXAS AS B. DEALBATUS DOES IN THE NORTHEAST PART. THE TWO SPECIES HAVE BEEN FOUND TOGETHER ALIVE IN SAN PATRICIO COUNTY, AND THIS PROBABLY REPRESENTS THE NORTHERN RANGE LIMIT OF THIS SNAIL. WHERE IT IS FOUND, IT IS VERY ABUNDANT. ACCORDING TO DR. BEQUAERT (PERSONAL COMMUNICATION) B. ALTERNATUS MARIAE (THE NAME COMMONLY USED FOR THE TEXAS SNAILS) IS NOT SEPARABLE FROM TYPICAL B. ALTERNATUS.

BULIMULUS (RABDOTUS) DEALBATUS (SAY), TYPICAL

HELIX DEALBATA SAY, 1821, JOUR. ACAD. NAT. SCI. PHILA., II, P. 159.

BULIMULUS DEALBATUS PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 7, FIGS. 4A-D.

DISTRIBUTION. SPECIMENS EXAMINED FROM BRAZOS, CALHOUN, COLORADO, DALLAS, DEWITT, ELLIS, FAYETTE, GRAYSON, GRIMES, HARRIS, HAYS, HENDERSON, JACKSON, LAVACA, LEE, LEON, MATAGORDA, McLENNAN, MILAM, MONTGOMERY, POLK, REFUGIO, TRAVIS, TYLER, WASHINGTON, WHARTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, BOWIE, FORT BEND, MADISON, WALLER COUNTIES.

REMARKS. ACCORDING TO DR. BEQUAERT (PERSONAL COMMUNICATION) B. DEALBATUS LIQUABILIS IS NOT SEPARABLE AS A SUBSPECIES FROM TYPICAL DEALBATUS. ALTHOUGH RECOGNIZABLE IN SOME SPECIMENS, MANY TRANSITIONAL SHELLS HAVE BEEN FOUND. THIS SPECIES IS RESTRICTED TO A GRASSLAND HABITAT. IN MANY PLACES IT OCCURS IN THE CLEARINGS BETWEEN GROUPS OF TREES, BUT THIS WRITER HAS YET TO FIND IT LIVING UNDER THEM. THE SOUTHERN LIMIT OF THE RANGE OF TYPICAL DEALBATUS APPEARS TO BE REFUGIO COUNTY. IT IS A COMMON SNAIL IN HOUSTON AND VICINITY.

BULIMULUS DEALBATUS MOOREANUS (L. PFEIFFER)

BULIMUS SCHIEDEANUS VAR. W. G. BINNEY, 1859, TERR. AIR-BREATH. MOLL. U.S., IV, P. 129; P. LXXX, FIG. 8.

BULIMUS MOOREANUS "W. G. BINNEY" PFEIFFER, 1868, MONOGR. HELIC. VIV., VI, P. 143.

BULIMULUS SCHIEDEANUS VAR. MOOREANUS W. G. BINNEY, 1878, BULL. MUS. COMP. ZOO., IV, P. 392; FIGS. 277-279.

BULIMULUS DEALBATUS MOOREANUS PILSBRY AND FERRISS, 1906, PROC. ACAD. NAT. SCI. PHIL., LVIII, P. 133; PL. VI, FIGS. 1-6.

BULIMULUS (RABDOTUS) DEALBATUS MOOREANUS PILSBRY, 1946, LAND MOLL. N. AMER., VOL. II, PT. I, P. 12; FIGS. 4G, H, I.

DISTRIBUTION. SPECIMENS EXAMINED FROM ATASCOSA, AUSTIN, BANDERA, BASTROP, BAYLOR, BEE, BELL, BEXAR, BRAZORIA, BRAZOS, BURLESON, BURNET, CALDWELL, CALHOUN, COMAL, CROCKETT, DALLAS, DE WITT, FRIO, GILLESPIE, GONZALES, HAMILTON, HAYS, KARNES, KENDALL, KERR, KIMBLE, LAVACA, LIMESTONE, MATAGORDA, MCLENNAN, MEDINA, MILAM, NAVARRO, NUECES, PECOS, REFUGIO, ROBERTSON, SAN PATRICIO, TARRANT, TRAVIS, UVALDE, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BOSQUE, COLEMAN, DENTON, FALLS GOLIAD, GUADALUPE, HILL, LAMPASAS, MASON, PALO PINTO, SOMERVELL, WILLIAMSON, WILSON COUNTIES.

REMARKS. ALTHOUGH SOME OTHER SUPPOSED SUBSPECIES OF B. DEALBATUS ARE DIFFICULT TO SEPARATE, MOOREANUS IS ONE OF THE FEW THAT SHOW HOMOGENOUS CHARACTERISTICS THROUGHOUT ITS WIDE RANGE. I HAVE TAKEN IT ALIVE FROM VICTORIA AND SAN PATRICIO COUNTIES WHERE IT WAS AESTIVATING ON FENCE POSTS. IT IS A COMMON AND CHARACTERISTIC SNAIL OF CENTRAL TEXAS, PARTICULARLY ABUNDANT IN THE HILL COUNTRY.

BULIMULUS DEALBATUS RAGSDALEI H. A. PILSBRY

BULIMULUS RAGSDALEI PILSBRY, 1890, NAUTILUS, III, PT. 2, P. 122.

BULIMULUS DEALBATUS RAGSDALEI PILSBRY, 1946, VOL. II, PT. 1, P. 11, FIGS. 5A-G.

DISTRIBUTION. SPECIMENS EXAMINED FROM ARCHER, BEE, BEXAR, BLANCO, BURNET, COOKE, DUVAL, JIM HOGG, JIM WELLS, KENEDY, KERR, KINNEY, LA SALLE, LIVE OAK, MAVERICK, McMULLEN, SAN PATRICIO, UVALDE, VAL VERDE, WEBB, YOUNG COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BAYLOR, BREWSTER, CAMERON, CROCKETT, HIDALGO, MONTAGUE, PECOS, TERRELL COUNTIES.

REMARKS. THIS SUBSPECIES HAS BEEN TAKEN ALIVE UNDER THE DEAD LEAVES OF YUCCA AND AGAVE PLANTS. THIS SUBSPECIES AND B. ALTERNATUS ARE PERHAPS THE MOST INDICATIVE OF THE ARID PORTION OF SOUTHWEST TEXAS.

EUGLANDINA (EUGLANDINA) TEXASIANA (PFEIFFER)

ACHATINA TEXASIANA PFEIFFER, 1857, NOVIT. CONCHOL., I, P. 82, PL. XXII, FIGS. 11-12.

EUGLANDINA TEXASIANA PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. I, P. 195, FIG. 95C.

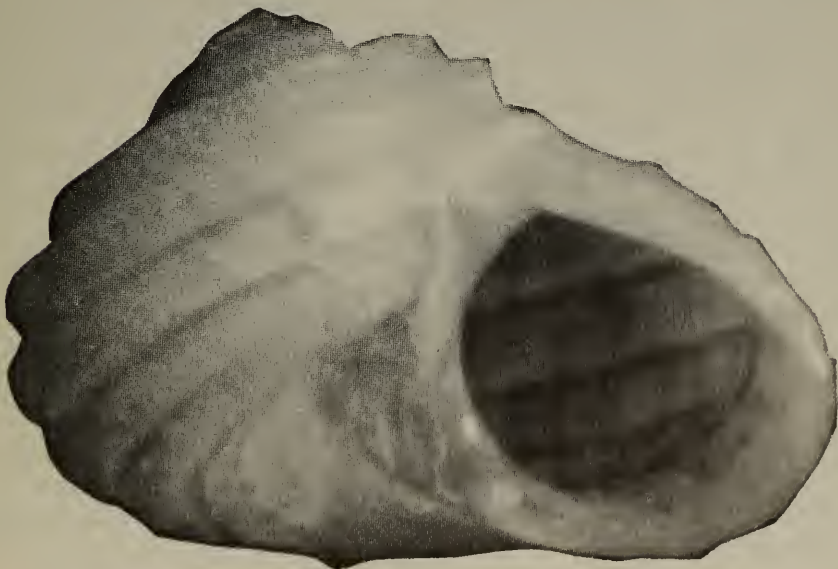
DISTRIBUTION. SPECIMENS EXAMINED FROM CAMERON AND KENEDY COUNTIES. PREVIOUS PUBLISHED RECORDS FROM HIDALGO COUNTY.

REMARKS. THIS CARNIVOROUS SNAIL IS RESTRICTED TO THE SOUTHEASTERN CORNER OF TEXAS, IN THE TAMAILIPAN PROVINCE. ITS HABITS OF BURROWING MAY ACCOUNT FOR THE APPARENT SCARCITY.

TO BE CONTINUED.....

THIS SMALL SPECIES WAS REPORTED EARLIER IN THE TEXAS CONCHOLOGIST, VOL. 6, P. 10, 1969. IT IS ONLY KNOWN FROM PORT ARANSAS AND FURTHER SOUTH BUT IS NOT UNCOMMON ON THE OFFSHORE SHELF IN THE GALVESTON-FREEPORT AREA AT DEPTHS BETWEEN 10 AND 35 FATHOMS. LIVE SPECIMENS WERE SEVERAL TIMES FOUND IN EMPTY BANKIA OR TEREDO BORINGS IN SUBMERGED WOOD.

THE TWO PHOTOGRAPHS WERE MADE BY MR. F. VAN MORKHOVEN FROM A SPECIMEN TAKEN FROM BEACHDRIFT AT PORT ARANSAS. THE SPECIMEN WAS COLORED BY A GREEN DYE TO BRING OUT SCULPTURAL DETAIL IN THE TOP VIEW PHOTOGRAPH.



PARVITURBOIDES INTERRUPTUS C. B. ADAMS, 1850, FROM BEACHDRIFT, PORT ARANSAS, TEXAS. SIZE: 1.60 MM.

## INDIAN WAMPUM BELTS

IN THE DECEMBER ISSUE WE DISCUSSED THE USE OF THE SHELL BEADS MADE FROM THE EASTERN QUAHOG, AND COMMONLY KNOWN AS 'WAMPUM' AND THEIR USE AS MONEY. THESE SHELL BEADS WERE ALSO USED IN ANOTHER MANNER OF SIGNIFICANCE IN AMERICAN INDIAN CULTURE. THIS WAS IN THE WEAVING OF WAMPUM 'BELTS' WHICH WERE THE NEAREST THING THE INDIANS HAD TO A RECORDED HISTORY.

THIS CUSTOM OF USING WOVEN BANDS OF SHELL BEADS (LATER THE GLASS BEADS OF WHITE-MAN WERE USED) AS A MEANS OF KEEPING MNEMONIC RECORDS OF TRIBAL HISTORY, LAWS, TREATIES, SPEECHES, ETC., WAS PERHAPS THE MOST REMARKABLE USE OF SHELLS MADE BY THE INDIANS.

THE BELTS WERE LONG STRINGS OF WAMPUM, WOVEN TOGETHER BY CROSS STRANDS OF FINE LEATHER THONGS, THUS CREATING A NICE BEADED FABRIC. THE PLACEMENT OF COLORED BEADS TO CREATE SYMBOLS AND DESIGNS WAS OF THE UTMOST SIGNIFICANCE, FOR EACH BELT WAS UNIQUE, AND BY ITS DESIGN INDICATED THE MESSAGE DELIVERED. THE LENGTH AND SIZE OF THE BELT INDICATED THE RELATIVE IMPORTANCE OF THE AFFAIR; THE COLORS WERE ALSO INDICATIVE OF INTENT. FOR INSTANCE, A BELT WITH A PREPONDERANCE OF BLACK BEADS (THE DARK PURPLE OF THE QUAHOG SHELL), GENERALLY CONVEYED A MESSAGE OF REPROOF OR EVIL. IF THE BLACK WERE COMBINED WITH RED, IT OFTEN MEANT A DECLARATION OF WAR. WHITE WAS THE SYMBOL OF PEACE, AND OTHER HAPPIER MESSAGES. WITH NO WRITTEN WORD, IT WAS THE EXCHANGE AND PRESERVATION OF THESE HIGHLY TREASURED BELTS, WHICH WERE EXCHANGED ON ALMOST ANY OCCASION OF NOTE, WHICH PERPETUATED THE AFFAIRS OF THE TRIBE.

THUS, SHOULD ONE TRIBE WISH TO ENLIST THE ALLIANCE OF ANOTHER TRIBE IN DECLARING WAR ON A THIRD TRIBE, A SUITABLE BELT WOULD BE FASHIONED AND WITH AN EXPLICIT (OFTEN LONG AND INVOLVED) VERBAL MESSAGE, SENT BY RUNNER TO THE SECOND TRIBE. THE RUNNER WOULD CONVEY HIS 'GIFT' AND DELIVER THE ACCOMPANYING MESSAGE IN A LONG SPEECH, BUT AT THE MOMENT OF HANDING OVER THE BELT, THE WORDS WERE USUALLY FEW, BUT OF GREAT SIGNIFICANCE, AND THEREAFTER THEY WOULD BE REPEATED AS EXACTLY AS POSSIBLE WHENEVER THE BELT WAS 'READ' BY THE ELDERS OF THE TRIBE. THUS, AS LONG AS AN AGREEMENT BETWEEN TRIBES WAS IN FORCE THE SPECIFIC BELT WAS A PART OF THE WEALTH OF THE TRIBE AND HIGHLY TREASURED. PERIODICALLY THE BELT, ALONG WITH ALL OTHERS OWNED BY THE TRIBE, WERE REMOVED FROM THE TREASURY AND CEREMONIOUSLY READ BY THE CHIEFS AND ELDEPS OF THE TRIBE. THE YOUNG BRAVES OF THE TRIBE WERE INVITED TO LISTEN TO THESE SESSIONS, AND THUS AS THE ELDERS AND CHIEFS REVIEWED IN DETAIL THE MESSAGE INDICATED BY EACH BELT, NOT ONLY WERE THEIR MEMORIES REFRESHED OF TRIBAL OBLIGATIONS AND HISTORY, BUT THE YOUNG WERE INDOCTRINATED INTO THE BUSINESS AND AFFAIRS OF THE TRIBE THEY WOULD BE RESPONSIBLE FOR IN THE FUTURE.

BESIDES THE MOST IMPORTANT WAMPUM 'BELTS', SINGLE STRANDS AND MUCH SMALLER BANDS OF WAMPUM BEADS WERE EXCHANGED BETWEEN INDIVIDUALS TO CONVEY SIMPLE MESSAGES OR AGREEMENTS OF LESS CONSEQUENCE. THEREFORE, AS THESE EXCHANGES WERE NUMEROUS AND EXPECTED FOR MOST OCCASIONS, IT WOULD SEEM THE SUPPLY OF WAMPUM BEADS WOULD BECOME A REAL PROBLEM. HOWEVER, OTHER ATTENDING CUSTOMS TOOK CARE OF THIS PROBLEM.

WHENEVER A TRIBE, OR INDIVIDUAL RECEIVED A WAMPUM MESSAGE, OR GIFT, HE WAS EXPECTED TO 'ANSWER' OR RETURN ANOTHER STRAND OR BELT OF WAMPUM OF EQUAL

SIZE. NOW AS LONG AS AN AGREEMENT WAS IN EFFECT, OR THE BELT STILL HELD SOME OTHER SIGNIFICANCE FOR THE TRIBE, IT WAS HIGHLY REGARDED AS PART OF THE TRIBAL TREASURY. HOWEVER, WHEN SUCH AN AGREEMENT WAS CONCLUDED, OR BROKEN, THAT PARTICULAR BELT WAS BROKEN, AND THE WAMPUM THUS FREED FOR USE IN OTHER BELTS.

THERE IS NO WAY OF KNOWING THE ORIGIN OR AGE OF THE MNEMONIC USE OF WAMPUM AS A CUSTOM AMONG THE INDIANS. APPARENTLY IT WENT BACK TO A VERY EARLY TIME IN THEIR CULTURE. HOWEVER, IT WAS STILL IN USE AT THE TIME THIS COUNTRY WAS FORMING ITS OWN STATE GOVERNMENTS, AND THEREFORE SEVERAL OF THE ORIGINAL COLONIES, IN MAKING TREATIES WITH THE INDIANS RECEIVED WAMPUM BELTS. SOME OF THESE HAVE BEEN PRESERVED IN HISTORICAL MUSEUMS, AND OTHER EXAMPLES OF THIS ART HAVE ALSO BEEN PRESERVED IN SOME OF THE LARGER MUSEUMS. THEREFORE, WHEN NEXT YOU VISIT SOME LARGE MUSEUM, IF YOU FIND NO SHELL DISPLAY TO HOLD YOUR ATTENTION, IT MIGHT BE WORTH WHILE TO VISIT THE AMERICAN INDIAN DISPLAYS, AND PERHAPS YOU WILL FIND THERE AN EXTRAORDINARY EXAMPLE OF INDIAN 'SHELL ART'.

TO BE CONTINUED.....

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TWO MASTERS THESES OF INTEREST TO THE TEXAS SHELL COLLECTOR BY H. ODE

IT IS UNFORTUNATE THAT THE INFORMATION CONTAINED IN MASTERS THESES OFTEN DOES NOT TRICKLE DOWN INTO THE OFFICIALLY RECOGNIZED BODY OF PUBLICATIONS. THUS OFTEN THE FACTS REPORTED AND THE WORK EXPENDED IN THESE EFFORTS ARE OVERLOOKED IN A LITERATURE SEARCH. HERE I WILL BRIEFLY REPORT ON TWO NOW ALREADY OLD MASTERS THESES, WHICH CONTAIN SOME USEFUL INFORMATION ABOUT THE TEXAS OFF-SHORE MOLLUSC FAUNA.

SAMPLES WERE OBTAINED BY DREDGING OFFSHORE EAST TEXAS IN AN INVESTIGATION SPONSORED BY THE OIL-INDUSTRY. FROM A SERIES OF STATIONS SAMPLES WERE TAKEN AND THE CONTENTS IDENTIFIED. WHETHER THIS LIMITED MATERIAL IS SUFFICIENT IN A STATISTICAL SENSE TO DELIMIT RANGES AND WHETHER IT ENABLES ONE TO DRAW VALID CONCLUSIONS WITH REGARD TO FAUNAL COMPOSITION I DOUBT. IT IS REMARKABLE THAT THE SAMPLES DISCUSSED BY BOTH HULINGS AND KENNEDY HARDLY EVER CONTAIN MANY OF THE COMMON MICROMOLLUSCS. IT IS NOT CLEAR WHETHER THIS SMALL FRACTION WAS LOST IN SAMPLE PREPARATIONS OR WAS SYSTEMATICALLY NEGLECTED.

IT MUST BE EXPECTED THAT IN REPORTS SUCH AS THESE ERRORS OF VARIOUS TYPES OCCUR. TYPOGRAPHICAL ERRORS ARE UNFORTUNATELY COMMON, BUT WILL SELDOM CAUSE CONFUSION. THERE ARE SEVERAL OBVIOUS MISIDENTIFICATIONS. THESE BLEMISHES HOWEVER ARE COMPENSATED BY THE VALUE THE WORKS HAVE IN PUTTING ON PHOTOGRAPHIC RECORD ANOTHER SEGMENT OF A LARGELY UNKNOWN FAUNA OFF THE TEXAS COAST. THE PLATES AT THE END OF BOTH THESES ARE CLEAR AND SHARP AND WILL HELP THOSE WHO ARE INTERESTED IN THE MOLLUSCAN FAUNA OF THE NORTHWEST GULF OF MEXICO.

1955 HULINGS, N. C., AN INVESTIGATION OF THE BENTHIC INVERTEBRATA FAUNA FROM THE SHALLOW WATERS OF THE TEXAS COAST. MASTERS THESIS T.C.U.

1959 KENNEDY, E. A., A COMPARISON OF THE MOLLUSCAN FAUNA ALONG A TRANSECT EXTENDING FROM THE SHORELINE TO A POINT NEAR THE EDGE OF THE CONTINENTAL SHELF OF THE TEXAS COAST. MASTERS THESIS T.C.U.

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TREATISE ON INVERTEBRATE PALEONTOLOGY, PART N, VOLUME 1 AND 2, 1969; PART I, 1964 REPRINT: DIRECTED AND EDITED BY R. C. MOORE. THE GEOLOGICAL SOCIETY OF AMERICA, INC., AND THE UNIVERSITY OF KANSAS.

IN THESE THREE BEAUTIFUL VOLUMES, RECENTLY ACQUIRED FOR OUR LIBRARY, AN UP-TO-DATE SURVEY IS GIVEN OF THE PRESENT STATE OF KNOWLEDGE OF THE PHYLUM MOLLUSCA EXCEPT THE MESOGASTROPODA AND THE NEOGASTROPODA, GROUPS WHICH WILL BE DISCUSSED IN A VOLUME TO APPEAR SOMETIME IN THE FUTURE.

THE SYSTEMATIC TREATMENT OF ALL DISCUSSED CLASSES IS PRECEDED BY A GENERAL INTRODUCTION IN WHICH A COMPLETE EXPLANATION OF MALACOLOGICAL AND CONCHOLOGICAL TERMINOLOGY CAN BE FOUND. THESE ARTICLES ARE WRITTEN BY OUTSTANDING EXPERTS AND MAKE MOST INTERESTING READING FOR THE SERIOUS SHELLCOLLECTOR. ALSO THE SYSTEMATIC PART IS AUTHORED BY HIGHLY QUALIFIED SPECIALISTS. THE DISCUSSED GROUPS, WHICH INCLUDE ALL KNOWN FOSSIL AND RECENT GENERA, ARE ALMOST ALL ILLUSTRATED BY SIMPLE AND MOSTLY QUITE CLEAR AND DISTINCTIVE FIGURE. A QUICK CHECK WHICH I MADE, SHOWED THAT THE ENUMERATION IS, AS FAR AS I MAY BE CONSIDERED A JUDGE IN THIS MATTER, QUITE COMPLETE, ALTHOUGH IT IS POSSIBLE TO FIND OMISSIONS.

QUITE A FEW CHANGES IN ARRANGEMENT AND TAXONOMY WILL BE NOTICED. FOR INSTANCE NOETIA IS NO LONGER INCLUDED IN THE FAMILY ARCIDAE, BUT PUT TOGETHER WITH ARCOPSIS IN THE FAMILY NOETIIDAE. THOSE WHO ARE FAMILIAR WITH THE ARRANGEMENT IN ABBOTT'S AMERICAN SEASHELLS CAN DISCOVER MORE SUCH DIFFERENCES, WHICH NEED NOT BE DISCUSSED HERE.

ALL THREE VOLUMES HAVE BEEN CAREFULLY PROOFREAD AND THE NUMBER OF PRINTING ERRORS IS SURPRISINGLY SMALL. IT WOULD HAVE BEEN A MIRACLE IF IN A WORK OF THIS SCOPE NO ERRORS WOULD OCCUR. WE NOTE HERE ONE WHICH IS BOTHERSOME. ON FIGURE C 5, PAGE N 255, THE CAPTION SHOULD READ ANADARINAE INSTEAD OF ARCINAE; ALSO CUNEARCA INCONGRUA IS NOT SHOWN BY FIGURES 5A, 5B, AS THE TEXT IMPLIES, BUT BY FIGURES 6A, 6B.

THERE IS NO DOUBT THAT BOTH THE PROFESSIONAL AND AMATEUR STUDENT OF RECENT FAUNAS WILL FIND THESE THREE VOLUMES A GREAT HELP IN THEIR WORK.

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TWO ARTICLES OF INTEREST TO THE GENERAL SHELLCOLLECTOR APPEARED IN "OCEANS", VOL. 3, NO. 6, 1970. ONE OF THESE, ENTITLED: DEATH FROM THE DEPTHS, BY BRUCE W. HALSTEAD AND DANA D. DANIELSON DESCRIBES VARIOUS POISONOUS CREATURES OF THE OCEAN. AMONG THE MOLLUSKS THE CONE SHELL IS MENTIONED AND, THE OCTOPUS, AN ANIMAL SELDOM CONSIDERED AS POISONOUS. A BEAUTIFUL FIGURE OF THE AUSTRALIAN OCTOPUS MACULOSUS IS ONE OF THE MANY ILLUSTRATIONS OF THE PAPER. APPARENTLY THIS OCTOPUS INJECTS ITS POISON INTO ITS PREY WHEN IT BITES.

THE OTHER ARTICLE, ENTITLED "UNTAXING TAXONOMY" DISCUSSES SOME GENERAL ASPECTS OF SCIENTIFIC NAMES AND TOUCHES UPON THE RULES OF THEIR FORMATION. THE AUTHOR, LEIGHTON R. TAYLOR, JR., TELLS US THAT A NEW SPECIES IN THE GENUS ABRA HAS NOW BEEN OFFICIALLY NAMED ABRA CADABRA. WE ARE NOW WAITING FOR A NEW SPECIES IN THE GENUS ALABA TO BE NAMED ALABA NANA.

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# CONCHOLOGIST

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MARCH, 1971

## NOTES & NEWS

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### MARCH 24 MEETING

A REAL TREAT IS IN STORE FOR MEMBERS AT THE MARCH 24 MEETING TO BE HELD AS USUAL AT 8 P.M. AT THE HOUSTON MUSEUM OF NATURAL SCIENCE. AUDREY AND WAYNE HOLIMAN OF EDINBURG WILL PRESENT A PROGRAM ON SOME OF THEIR COLLECTING TRIPS TO MEXICO. THEIR MOST RECENT ONE BEFORE CHRISTMAS TOOK THEM TO LA PAZ AND UP THE BAJA PENINSULA. THERE AUDREY COLLECTED A BEAUTIFUL OLIVA PORPHYRIA AND WAYNE HAS THE FILM TO PROVE IT. THEIR PROGRAM WILL BE ILLUSTRATED WITH SLIDES AND FILM ON THE COUNTRY TRAVELLED AND ON THE SHELLS COLLECTED. BRING YOUR FRIENDS!

### REPORT FEBRUARY MEETING

FEBRUARY BUSINESS MEETING WAS CALLED TO ORDER BY PRESIDENT ODÉ AT ABOUT 8:00 P.M. THERE WERE 21 MEMBERS PRESENT, WHICH CONSTITUTED A QUORUM.

MINUTES OF THE PREVIOUS MEETING WERE READ AND APPROVED AS READ. LETTER TO MAYOR DOYAL OF PASADENA WAS READ.

### NOMINATING COMMITTEE PRESENTED THEIR LIST OF CANDIDATES AS FOLLOWS:

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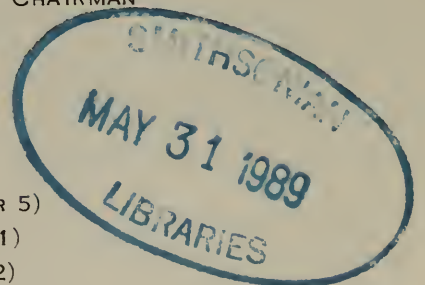
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CONTINUED ON PAGE 78.....

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY ISCHNOCHITONIDAE.

THE CHITONS ARE POORLY REPRESENTED IN THE TEXAS FAUNA AND SO FAR ONLY TWO SPECIES ARE KNOWN IN THE INSHORE FAUNA, WHICH ARE BOTH SMALL AND INCONSPICUOUS.

CHAETOPLEURA APICULATA SAY, 1839. ALTHOUGH IN OFFSHORE DREDGINGS THIS IS THE MOST COMMON CHITON ALONG THE TEXAS COAST, VERY FEW LIVE SPECIMENS HAVE BEEN COLLECTED IN THE BAYS. TWO LIVE SPECIMENS WERE TAKEN FROM OYSTERS IN SOUTH BAY, SOUTH PADRE ISLAND (COLL. SPEERS). IT HAS ALSO BEEN RECORDED LIVE FROM THE JETTY AT SOUTH PADRE ISLAND. LOOSE VALVES CAN BE COLLECTED FROM DRIFT ALONG THE VARIOUS CAUSEWAYS TO PADRE ISLAND. THE SCULPTURE ON THESE VALVES DIFFERS CONSIDERABLY FROM THAT OF THE VALVES OF THE NEXT SPECIES.

FIGURED IN: 1,4,6

PREVIOUS REFERENCES: 12,17, LISTED BY HARRY

LOCALITIES: SAN LUIS PASS (COLL. ODE), PORT ARANSAS, SOUTH PADRE ISLAND.

ISCHNOCHITON PAPILLOSUS C. B. ADAMS, 1845. THIS IS THE ONLY CHITON, WHICH CAN BE COLLECTED REGULARLY ALONG THE SOUTHERN PART OF THE TEXAS COAST. IT IS SO FAR UNKNOWN FROM GALVESTON, BUT HAS BEEN COLLECTED ON THE JETTY AT FREEPORT. FROM ROCKPORT SOUTH IT OCCURS COMMONLY ALIVE ON OYSTER SHELLS, STONES AND OTHER OBJECTS IN THE BAYS. THIS SPECIES VARIES GREATLY IN COLORATION; LAVENDER, GREEN AND BROWN SHADES HAVE BEEN COLLECTED IN TEXAS.

FIGURED IN: 1,3,4,6

PREVIOUS REFERENCES: 17,19,20

LOCALITIES: ON OYSTERSHELLS IN THE SOUTH TEXAS BAYS, FREEPORT.

FAMILY LOLIGINIDAE. THE SQUIDS ARE INHABITANTS OF THE OPEN AND OFTEN VERY DEEP SEAS. ONLY A SINGLE SMALL SPECIES IS KNOWN TO VENTURE OCCASIONALLY INTO THE TEXAS BAYS. THE LIKELIHOOD OF FINDING COMPLETE SPECIMENS OF SQUIDS ON THE BEACH IS VERY REMOTE.

LOLLIGUNCULA BREVIS BLAINVILLE, THIS SMALL SPECIES, COMMON IN THE OFFSHORE WATERS OF THE GULF OF MEXICO, HAS BEEN TAKEN IN TRAPS IN THE INLET AT PORT ARANSAS. THE BEAK-LIKE MOUTH PARTS OF THIS OR PERHAPS A RE-



LATED SPECIES ARE NOT UNCOMMON IN GULF BEACHDRIFT, ESPECIALLY IN THE SPRING, AT PORT ARANSAS.

FIGURED IN: 1

PREVIOUS REFERENCES: MANY

LOCALITIES: PORT ARANSAS

FAMILY OCTOPODIDAE. THE OCTOPUS IS PROBABLY A WIDESPREAD INHABITANT OF THE TEXAS COASTAL WATERS, BUT THE BEACHCOMBER WILL ONLY RARELY COME ACROSS ONE.

OCTOPUS VULGARIS LAMARCK, WE MENTION THIS SPECIES WITH SOME RESERVATION. A REASONABLY GOOD SIZED SPECIMEN WAS ONCE FOUND ALIVE STRANDED IN A DEPRESSION BETWEEN MUDFLATS NEAR SAN LUIS PASS (COLL. ODE), BUT WE ARE NOT QUITE SURE WHETHER THE ABOVE IDENTIFICATION IS CORRECT. FOLLOWING HURRICANE CARLA THE BAY AT SOUTH PADRE ISLAND HARBORED NUMEROUS OCTOPI AND MANY WASHED ASHORE. IN THE COURSE OF TIME WE HAVE COME ACROSS A NUMBER OF REFERENCES AND HEARD STORIES ABOUT FISHERMEN CATCHING AN OCTOPUS WHILE FISHING IN THE BAYS OR FROM THE JETTIES.

FIGURED IN: NONE AVAILABLE

PREVIOUS REFERENCES: SEVERAL

LOCALITIES: GALVESTON, SOUTH PADRE ISLAND

WE WILL ADD A NUMBER OF SPECIES TO FAMILIES ALREADY TREATED.

FAMILY CERITHIIDAE.

ALBINA CERITHIOIDES DALL, 1889. A FEW SPECIMENS OF THIS, ONE OF THE MOST ABUNDANT OFFSHORE GASTROPODS, HAVE BEEN COLLECTED FROM BEACHDRIFT AT SAN LUIS PASS, MATAGORDA AND OTHER LOCALITIES NORTH OF THE CORPUS CHRISTI AREA. SOUTH OF ST. JOSEPH ISLAND THE SPECIES BECOMES ABUNDANT IN BEACHDRIFT ALONG THE CAUSEWAYS TO MUSTANG AND PADRE ISLANDS, BUT SO FAR NO LIVE MATERIAL IS KNOWN. THE DISTINCTION BETWEEN THIS SPECIES, BITTIUM VARIUM AND JUVENILES OF C. VARIABLE IS NOT ALWAYS EASY.

FIGURED IN: 3

PREVIOUS REFERENCES: SEVERAL

LOCALITIES: GALVESTON, MATAGORDA, SOUTH OF ST. JOSEPH ISLAND.

FAMILY MYACIDAE.

SPHENIA TUMIDA LEWIS, 1968. ELSEWHERE IN THIS ISSUE A FULLER ACCOUNT OF THIS SPECIES IS GIVEN. IT IS QUITE DIFFERENT FROM SPHENIA ANTILLENIS, SO THAT CONFUSION IS EXCLUDED. THE SINGLE KNOWN SPECIMEN CAME FROM A MASS OF DARK BLUE CLAY FOUND ON FREEPORT BRYAN BEACH. THE SPECIMEN MIGHT THEREFORE BE A FOSSIL.

FIGURED IN: VOL. 6, TULANE STUDIES OF GEOLOGY AND PALEONTOLOGY, 1968, PAGES 23-32.

PREVIOUS REFERENCES: NONE

LOCALITIES: FREEPORT BRYAN BEACH.

TO BE CONTINUED.....

THE BOOK (377 PAGES) ENTITLED STUDIES IN THE STRUCTURE, PHYSIOLOGY AND ECOLOGY OF MOLLUSCS CONTAINS THE PROCEEDINGS OF A SYMPOSIUM HELD MARCH 8 AND 9, 1967 BY THE ZOOLOGICAL SOCIETY OF LONDON AND THE MALACOLOGICAL SOCIETY OF LONDON. THE BOOK WAS EDITED BY VERA FRETTER AND WAS PUBLISHED BY ACADEMIC PRESS (1968). AUTHORS AND CHAPTER HEADINGS ARE LISTED BELOW.

G. NEWMAN, G. A. KERKUT & R. J. WALKER: THE STRUCTURE OF THE BRAIN OF HELIX ASPERSA. ELECTRON MICROSCOPIC LOCALIZATION OF CHOLINESTERASE AND AMINES.

C. B. SEDDEN, R. J. WALKER & G. A. KERKUT: THE LOCALIZATION OF DOPAMINE AND 5-HYDROXYTRYPTAMINE IN NEURONES OF HELIX ASPERSA.

R. J. WALKER, A. HEDGES & G. N. WOODRUFF: THE PHARMACOLOGY OF THE NEURONES OF HELIX ASPERSA.

A. ABOLINS-KROGIS: SHELL REGENERATION IN HELIX POMATIA WITH SPECIAL REFERENCE TO THE ELEMENTARY CALCIFYING PARTICLE.

P.S.B. DIGBY: THE MECHANISMS OF CALCIFICATION IN THE MOLLUSCAN SHELL.

E. A. KAY: A REVIEW OF THE BIVALVED GASTROPODS AND A DISCUSSION OF EVOLUTION WITHIN THE SACROGLOSSA.

B. SWEDMARK: THE BIOLOGY OF THE INTERSTITIAL MOLLUSCA.

A. HURST: THE FEEDING MECHANISM AND BEHAVIOUR OF THE OPISTHOBRANCH MELIBA LEONINA.

E. R. TRUEMAN: THE BURROWING ACTIVITIES OF BIVALVES.

W.T.W. POTTS: ASPECTS OF EXCRETION IN THE MOLLUSCS.

R. H. NISBET & J. M. PLUMMER: THE FINE STRUCTURE OF CARDIAC AND OTHER MOLLUSCAN MUSCLE.

J. JOOSE, M. H. BOER & C. J. CORNELISSE: GAMETOGENESIS AND OVIPOSITION IN LYMNAEA STAGNALIS AS INFLUENCED BY  $\gamma$ -IRRADIATION AND HUNGER.

H. H. BOER, E. DOUMA & J.M.K. KOKSMA: ELECTRON MICROSCOPY STUDY OF NEUROSECRETORY CELL AND NEUROHAEMAL ORGANS IN THE POND SNAIL LYMNAEA STAGNALIS.

T. A. VLIIEGER: SPONTANEOUS ACTIVITY AND TACTILE PATHWAYS IN THE CENTRAL NERVOUS SYSTEM OF LYMNAEA STAGNALIS.

J. LEVER & R. THIJSSSEN: SORTING PHENOMENA DURING THE TRANSPORT OF SHELL VALVES ON SANDY BEACHES: STUDIES WITH USE OF ARTIFICIAL VALVES.

M. P. KERNSEY: BRITAIN'S FAUNA OF LAND MOLLUSCA AND ITS RELATION TO THE POST-GLACIAL THERMAL OPTIMUM.

J.G. EVANS: CHANGES IN THE COMPOSITION OF LAND MOLLUSCAN POPULATION IN NORTH WILTSHIRE DURING THE LAST 5000 YEARS.

J. F. PEAKE: HABITAT DISTRIBUTION OF SOLOMON ISLAND LAND MOLLUSCA.

EUGLANDINA (SINGLEYA) SINGLEYANA W. G. BINNEY

GLANDINA SINGLEYANA W. G. BINNEY, 1892, BULL. MUS. COMP. ZOO.,  
XXII, No. 4, p. 163; PL. I, FIG. 4.

EUGLANDINA SINGLEYANA PILSBRY, 1946, LAND MOLL. N. AMER. VOL. II,  
PT. 1, P. 197, FIGS. 95 A,B.

DISTRIBUTION: SPECIMENS EXAMINED FROM BANDERA, BEXAR, CALDWELL,  
COMAL, FAYETTE, GOLIAD, HAYS, KENDALL, KERR, KINNEY, TRAVIS, VAL VERDE,  
VICTORIA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ATASCOSA, FRIO, GONZALES,  
GUADALUPE, MEDINA, REAL, WILSON COUNTIES.

REMARKS: E. SINGLEYANA IS CHARACTERISTIC OF THE HILL COUNTRY OF CENTRAL  
TEXAS IN THE BALCONIAN PROVINCE. THE FEW RECORDS FROM THE NORTHEASTERN  
CORNER OF THE TAMAUlipAN PROVINCE APPEAR TO BE BASED ON RIVER DRIFT SHELLS.

HAPLOTREMA (GEOMENE) CONCAVUM (SAY)

HELIX CONCAVA SAY, 1821, JOUR. ACAD. NAT. SCI. PHIL., II, P. 159.

HAPLOTREMA CONCAVUM PILSBRY, 1946, LAND MOLL. N. AMER. VOL. II,  
PT. 1, P. 208-210, FIGS. 100 A-D AND 101 A-F (ANATOMY).

DISTRIBUTION. SPECIMENS EXAMINED FROM LIBERTY COUNTY. PREVIOUS  
PUBLISHED RECORDS FROM ELLIS AND SHELBY COUNTIES.

REMARKS. APPARENTLY THIS SNAIL REACHES ITS WESTERN-MOST LIMIT IN  
EAST TEXAS. IT IS KNOWN TO OCCUR FROM ARKANSAS TO FLORIDA AND NORTHWARD TO  
CANADA.

EUCONULUS CHERSINUS TROCHULUS (REINHARDT)

C. (ONULUS) TROCHULUS REINHARDT, 1883, SITZUNGS-BER. GES. NAT.  
FREUNDE ZU BERLIN, P. 41.

EUCONULUS CHERSINUS TROCHULUS PILSBRY, 1946, LAND MOLL. N. AMER.,  
II, PT. 1, P. 241, FIG. 119F.

DISTRIBUTION. SPECIMENS EXAMINED FROM BANDERA, BRAZORIA, BRAZOS,  
BURLESON, BURNET, CAMERON, COMAL, DALLAS, ELLIS, FAYETTE, GONZALES,  
GUADALUPE, HARDIN, HARRIS, KARNES, KERR, LAVACA, LIBERTY, MATAGORDA,  
MCLENNAN, MILAM, NUECES, POLK, REFUGIO, ROBERTSON, SAN PATRICIO, UVALDE,  
VAL VERDE, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM  
CALHOUN, HAYS, HIDALGO, JACKSON, KENDALL, LEE, LIVE OAK, MEDINA, TAYLOR,  
TRAVIS COUNTIES.

REMARKS. THIS SMALL SNAIL IS OFTEN FOUND WITHIN THE HOUSTON CITY  
LIMITS.

GUPPYA GUNDLACHII (PFEIFFER)

HELIX PUSILLA PFEIFFER, 1829, ARCH. F. NATURGESCH., V, PT. 1, P. 351.  
NOT OF LOWE, 1833.

HELIX GUNDLACHII PFEIFFER, 1840, ARCH. F. NATURGESCH., V, PT. 1, O.  
250.

GUPPYA GUNDLACHII PILSBRY, 1946, LAND MOLL. N. AMER. II, PT. 1,  
P. 244, FIG. 120A.

DISTRIBUTION. SPECIMENS EXAMINED FROM NO COUNTY. PREVIOUS PUBLISHED RECORDS FROM CAMERON AND HIDALGO COUNTIES.

REMARKS. PILSBRY (1946) GIVES THE RANGE OF THE SNAIL AS FLORIDA AND TEXAS SOUTH TO PANAMA AND VENEZUELA. THE RECORDS INDICATE THAT THIS SMALL (3MM. DIA.) SNAIL IS WIDELY DISTRIBUTED IN MEXICO AND CENTRAL AMERICA. IN EXTREME SOUTHEASTERN TEXAS IT HAS ONLY BEEN TAKEN ON THREE OCCASIONS IN RIVER OR BEACH DRIFT, AND IS AS YET A DUBIOUS MEMBER OF THE LIVING FAUNA OF THE STATE.

RETINELLA (GLYPHALUS) ROEMERI (PILSBRY AND FERRISS)

VITREA DALLIANA ROEMERI PILSBRY AND FERRISS, 1906, PROC. AC. NAT. SCI. PHILA. LVIII, P. 151, FIG. 8 (4 FIGS.)

RETINELLA (GLYPHALUS, GLYPHALOIDES) ROEMERI PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 277, FIGS. 138 AND 139 (1-3).

DISTRIBUTION. SPECIMENS EXAMINED FROM BANDERA, BASTROP, BURLESON, COMAL, EDWARDS, GONZALES, GUADALUPE, HARRIS, KARNES, KERR, KIMBLE, MCLENNAN, NUECES, REFUGIO, ROBERTSON, SAN SABA, UVALDE, VAL VERDE COUNTIES. PREVIOUS PUBLISHED RECORDS FROM HAYS, KENDALL, MEDINA, SOMERVELL COUNTIES.

REMARKS. R. ROEMERI IS NEARLY RESTRICTED TO THE BALCONIAN PROVINCE, OF WHICH IT IS A CHARACTERISTIC SNAIL. ITS SPORADIC OCCURRENCE IN THE GULF COAST AREA IS MOSTLY IN RIVER DRIFT.

IT HAS BEEN TAKEN ON OCCASION IN THE HOUSTON AREA (STUDEWOOD PARK).

RETINELLA (GLYPHYALINIA) INDENTATA PAUCILIRATA (MORELET)

HELIX PAUCILIRATA MORELET, 1851, TEST. NOVISS. INS. CUB. AMER. CENTR., II, P. 8.

RETINELLA (GLYPHYALINIA) INDENTATA PAUCILIRATA, PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 291, FIGS. 146 (2 FIGS.) AND 139 (7-8, RADULA AND GENITALIA).

DISTRIBUTION. SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BEXAR, BLANCO, BRAZORIA, BRAZOS, BREWSTER, BURLESON, BURNET, CAMERON, COMAL, CORYELL, CULBERSON, DALLAS, DEWITT, FAYETTE, FORT BEND, GONZALES, GRAYSON, GUADALUPE, HAMILTON, HARDIN, HARRIS, HAYS, HIDALGO, KARNES, KENDALL, KERR, LAVACA, LEE, LEON, LIBERTY, MATAGORDA, MCLENNAN, MEDINA, MILAM, NUECES, POLK, REFUGIO, ROBERTSON, SAN PATRICIO, SAN SABA, TARRANT, TRAVIS, TYLER, UVALDE, VAL VERDE, VICTORIA, WALLER, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, BASTROP, BELL, BROOKS, ELLIS, FRIO, GARZA, JEFF DAVIS, LUBBOCK, MAVERICK, REAL, SOMERVELL, TAYLOR, WICHITA, WILLACY, WILSON COUNTIES.

REMARKS. R. I. PAUCILIRATA OCCURS OVER MOST OF TEXAS. IT IS OFTEN COMMON AND USUALLY FOUND UNDER BARK OF FALLEN TREES.

IT IS COMMON IN THE HOUSTON AREA.

MESOMPHIX FRIABILIS (W. G. BINNEY)

HELIX FRIABILIS W. G. BINNEY, 1857, PROC. AC. NAT. SCI. PHILA., P. 187.

MESOMPHIX (OMPHALINA) FRIABILIS PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 328, FIGS. 168 (2,4,6, RADULA) AND 169 A-E.

DISTRIBUTION. SPECIMENS EXAMINED FROM AUSTIN, BRAZORIA, CALHOUN, DEWITT, FALLS, FAYETTE, GONZALES, HARRIS, HAYS, LAVACA, MATAGORDA, MILAM, REFUGIO, ROBERTSON, TRAVIS, TYLER, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BASTROP, BELL, BEXAR, BOWIE, BRAZOS, CALDWELL, DALLAS, DENTON, LAMPASAS, LEE, MCLENNAN, ORANGE, WALLER, WEBB, WHARTON, WILLIAMSON COUNTIES.

REMARKS. THIS SPECIES LIVES ABUNDANTLY IN UNDISTURBED AREAS OF THE CITY PARKS OF HOUSTON, TEXAS. IT PREFERS THE SAME TYPE HABITAT AS MESODON THYSOIDUS WITH WHICH IT FREQUENTLY OCCURS.

HAWAIIA MINUSCULA (A. BINNEY)

HELIX MINUSCULA A. BINNEY, 1840, BOSTON JOUR. NAT. HIST., III, P. 435, (1841?), PL. 22, FIG. 4.

HAWAIIA MINUSCULA PILSBRY, 1946, LAND MOLL. N. AMER., VOL. II, PT. 1, P. 420-424, FIGS. 228 A-B, 229 1-3.

DISTRIBUTION. SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BASTROP, BEXAR, BRAZORIA, BRAZOS, BREWSTER, BURLESON, BURNET, CALHOUN, CAMERON, CHAMBERS, COMAL, CROCKETT, CULBERSON, DALLAS, EDWARDS, EL PASO, FAYETTE, FORT BEND, FRIO, GALVESTON, GONZALES, GRAYSON, GUADALUPE, HAMILTON, HARDIN, HARRIS, HIDALGO, KARNES, KERR, KIMBLE, KNOX, LAVACA, LIBERTY, LIVE OAK, MADISON, MATAGORDA, MCLENNAN, MILAM, MONTGOMERY, NUECES, PECOS, PRESIDIO, REEVES, ROBERTSON, SAN PATRICIO, SAN SABA, SCHLEICHER, TERRELL, UVALDE, VAL VERDE VICTORIA, WASHINGTON, WEBB, ZAPATA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ARCHER, ARMSTRONG, BORDEN, BRISCOE, BROOKS, CASTRO, CRANE, CROSBY, DALLAM, DAWSON, FLOYD, GARZA, GLASSCOCK, HARTLEY, HAYS, HOWARD, KENDALL, LEE, LUBBOCK, LYNN, MARTIN, MAVERICK, MEDINA, RANDALL, REAL, ROBERTS, SHERMAN, SOMERVELL, STONEWALL, TARRANT, TAYLOR, WARD, WICHITA, WILLACY, WINKLER COUNTIES.

REMARKS. H. MINUSCULA IS AT PRESENT NEARLY WORLD-WIDE IN DISTRIBUTION IN TROPICAL AND WARM TEMPERATE AREAS. MUCH OF THIS IS DUE TO TRANSPORT BY MAN. IT IS OFTEN FOUND IN GREEN HOUSES IN WESTERN EUROPE.

IT IS A COMMON SNAIL IN THE HOUSTON CITY AREA.

VENTRIDENS DEMISSUS (A. BINNEY)

HELIX DEMISSUS A. BINNEY, 1843, BOSTON JOURN. NAT. HIST., IV, PT. 3, P. 361; PL. 16, FIG. 1.

ZONITES BRITTSII PILSBRY, 1892, NAUTILUS, V, P. 99.

VENTRIDENS DEMISSUS BRITTSII, PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 460, FIGS. 249.

DISTRIBUTION. SPECIMENS EXAMINED FROM BOWIE, POLK, TYLER COUNTIES. PREVIOUS PUBLISHED RECORDS FROM HARDIN COUNTY.

REMARKS. LIKE V. INTERTEXTUS, THIS SPECIES ENTERS TEXAS ONLY IN THE AUSTRORIPARIAN PROVINCE, WHERE IT REACHES ITS EXTREME SOUTHWESTERN RANGE IN HARDIN COUNTY. UNLIKE INTERTEXTUS IN TEXAS, IT IS ABUNDANT WHERE IT IS FOUND. IT IS COMMON IN GRASSY CLEARINGS NEAR TOWN BLUFF, TYLER COUNTY. ACCORDING TO DR. BEQUAERT (PERSONAL COMMUNICATION), Z. BRITTSII IS NOT SEPARABLE, EVEN AS A SUBSPECIES, FROM TYPICAL DEMISSUS.

VENTRIDENS INTERTEXTUS (A. BINNEY)

HELIX INTERTEXTA A. BINNEY, 1841, BOSTON JOURN. NAT. HIST., III, PT. 4, P. 413, PL. XX, FIG. 2.

VENTRIDENS INTERTEXTUS PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 468, FIGS. 254A-C.

DISTRIBUTION. SPECIMENS EXAMINED FROM HARDIN COUNTY. PREVIOUS PUBLISHED RECORDS. NONE.

REMARKS. THE "BIG THICKET", IN THE AUSTRORIPARIAN PROVINCE, OF EAST TEXAS REPRESENTS THE SOUTHWESTERN EDGE OF THE RANGE OF THIS SPECIES. FURTHER COLLECTING NORTH AND EAST OF HARDIN COUNTY WILL PERHAPS REVEAL IT IN LARGER QUANTITIES.

ZONITOIDES ARBOREUS (SAY)

HELIX ARBOREUS SAY, 1816, NICHOLSON'S BRIT. ENCY., 1ST. AM. ED., II, ART. CONCHOLOGY.

ZONITOIDES ARBOREUS PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 480, FIGS. 258F (GENITALIA), 260 (6-8, GENITALIA), 261 (3 FIGS.) AND FIGS. 262A-C.

DISTRIBUTION. SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BASTROP, BRAZORIA, BRAZOS, BURLESON, COMAL, DALLAS, FAYETTE, GONZALES, GRAYSON, GUADALUPE, HARDIN, HARRIS, HARRISON, HAYS, JEFFERSON, KARNES, KERR, LAVACA, LEE, LEON, LIBERTY, MATAGORDA, MCLENNAN, MILAM, NAVARRO, NEWTON, NUECES, POLK, REFUGIO, ROBERTSON, SAN PATRICIO, TYLER, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, BELL, BEXAR, COOKE, CROSBY, ELLIS, FALLS, GAINES, GALVESTON, GARZA, KENDALL, SOMERVELL, SWISHER, TAYLOR, TITUS, TRAVIS COUNTIES.

REMARKS. THIS SPECIES NOW OCCURS IN EVERY STATE IN THE UNITED STATES EXCEPT NEVADA, BUT MUCH OF ITS PRESENT RANGE IS DUE TO TRANSPORT BY MAN. ORIGINALLY STRICTLY NORTH AMERICAN, IT HAS BEEN INTRODUCED TO MANY AREAS OF THE WORLD. IN TEXAS IT IS NOT KNOWN FROM THE DRIER WESTERN AND SOUTHWESTERN AREAS. IN THE PANHANDLE IT IS KNOWN ONLY FROM FOSSIL SHELLS. IT OCCURS UNDER BARK OF LOGS AND IN LEAF MOLD IN DAMP PLACES.

IT IS A COMMON SNAIL IN THE HOUSTON CITY AREA.

STRIATURA MERIDIONALIS (H. A. PILSBRY AND J. H. FERRISS)

VITREA MILIUM MERIDIONALIS PILSBRY AND FERRISS, 1906, PROC. ACAD. NAT. SCI. PHIL., LVIII, P. 152.

STRIATURA MERIDIONALIS PILSBRY, 1946, LAND MOLL. N. AMER., II, PT. 1, P. 493, FIGS. 270 (3 FIGS.), FIGS. 271A-C.

DISTRIBUTION. SPECIMENS EXAMINED FROM BANDERA, BASTROP, BREWSTER, BURLESON, FAYETTE, GUADALUPE, HARRIS, LAVACA, LIBERTY, MCLENNAN, MILAM, NUECES, ROBERTSON, UVALDE, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM COMAL, FORT BEND, HAYS, MEDINA, SOMERVELL COUNTIES.

REMARKS. THE AUTHOR HAD DIFFICULTY IN SEPARATING THIS SPECIES FROM SMALL ZONITOIDES. PERHAPS THE MINUTE SIZE (1.75 MM. DIA.) HAS PREVENTED MORE SPECIMENS FROM BEING COLLECTED AND IDENTIFIED.

IT WAS COLLECTED ON ONE OCCASION WITHIN THE HOUSTON CITY LIMITS (STUDEWOOD PARK).

TO BE CONTINUED. . . .

THOUGH REPORTED IN PAST LITERATURE AS OCCURRING IN TEXAS, THE LITTLE CLAM, GEMMA GEMMA TOTTEN, HASN'T BEEN FOUND ALIVE BY COLLECTORS IN RECENT YEARS. ON FEBRUARY 11, 1971, I REVISITED A LITTLE SANDY SPIT INTO THE INTRACOASTAL CANAL AT PORT ARANSAS, BECAUSE I ONCE COLLECTED SOME VERY NICE POLINICES THERE, AS WELL AS SOME INTERESTING SAYELLAS AND HENRYAS ALIVE. THIS IS A MUDDY PLACE, AND AT LOW TIDE THE SAND BARS EXTEND OUT INTO THE CANAL WHERE THICK GRASS GROWS. ABOUT THE ONLY WAY I CAN COLLECT SOME OF THE MINUTE SHELLS IS TO PICK UP EVERY TINY TRAIL WITH A SPOON OR TROWEL AND PLACE THE WHOLE BIT OF SAND IN A SIEVE AND SWISH THIS THROUGH WATER. I SELDOM REALLY KNOW JUST WHAT I HAVE UNTIL I GET HOME AND CAN VIEW THE MATERIAL UNDER A MICROSCOPE. THIS TIME, MY REWARD WAS FOUR LIVE GEMMA GEMMA. THE REMAINDER OF THE SMALL SHELLS CONSISTED OF TELLINA TAMPAENSIS CONRAD, CERITHIUM VARIABILE C. B. ADAMS, AND LYONSIA HYALINA FLORIDANA CONRAD, TO NAME A FEW.

GEMMA GEMMA BELONGS TO THE SUBFAMILY GEMMINAE OF THE FAMILY VENERIDAE. MRS. WINNIE RICE'S PRELIMINARY CHECK LIST OF THE MOLLUSCA OF TEXAS (OCTOBER, 1960) DOES MENTION THAT THIS SPECIES IS DEPOSITED IN THE MAIN COLLECTION OF THE INSTITUTE OF MARINE SCIENCE AT PORT ARANSAS.

THE DAY BEFORE, ON FEBRUARY 10, I PROWLED THE BACK BAY AREA OF PACKERY CHANNEL, THE INSIDE AREA AT THE END OF MUSTANG ISLAND NEAREST NORTH PADRE ISLAND. THE TIDE WAS EXTREMELY LOW AFTER THE ECLIPSE AND THE SAND POINT FAR INSIDE FROM THE MUSTANG ISLAND PAVED ROAD WAS COMPLETELY EMPTY OF WATER. THE GRASSES ARE BEGINNING TO BE PROLIFIC AGAIN IN THIS AREA. HERE, LAST YEAR, SOME OF THE CORPUS MEMBERS FOUND SMARAGDIA VIRIDIS ALIVE AND ALSO SOMEWHERE IN THE VICINITY THEY FOUND SOME TELLIDORA CRISTATA. I DID NOT FIND EITHER OF THESE MUCH-DESIRED SHELLS, BUT I DID FIND MY FIRST LIVE HAMINOEA SUCCINEA CONRAD 1846. I THOUGHT THE LITTLE BUBBLE-LIKE SHELLS HAD RED SPIRAL LINES ON THEM, BUT DR. HELMER ODÉ HAS CONVINCED ME THE SPIRAL LINES ARE JUST EXHIBITING SOME CLAY AND DIRT. THE SHELLS WERE FOUND IN TINY TRAILS NEAR THE WATER. UNDER A LENS, THE ANIMALS ARE YELLOWISH-GREEN WITH BLACK SPOTTING OR SPECKLES. MRS. LEOLA GLASS ONCE COLLECTED THESE ALIVE AT SAN LUIS PASS, GALVESTON ISLAND, ON THE BAY SIDE. WE SOMETIMES FIND THIS TRANSLUCENT LITTLE PAPER BUBBLE IN DRIFT, BUT IT HAS NOT BEEN TAKEN ALIVE TOO OFTEN.

OTHER SHELLS FROM THE SAND SPIT CONSISTED OF MANY LIVE TELLINA VERSICOLOR DEKAY. THEY OCCURRED IN SPIT-LIKE TRAILS, AND AT THIS LOW-TIDE TIME, YOU COULD OBSERVE THE GLISTENING OF THE SHELLS AT ONE END. THE ONLY WAY TO COLLECT THESE WITHOUT DAMAGING THE FRAGILE LITTLE SHELLS IS TO COLLECT THE WHOLE TRAIL IN A SIEVE AND GENTLY WASH OUT THE SAND AT THE WATER'S EDGE. EVERY ONE OF THESE WERE DEEP PINK RAYED. I CLEAN THEM WHEN I GET HOME BY SOAKING THEM IN WATER A FEW HOURS AND GENTLY PICKING OUT THE MEAT UNDER A LENS. THERE WERE ALSO PLENTY OF TELLINA IRIS SAY AVAILABLE, BUT THIS SHELL I GET AT SAN LUIS IN TRAILS. I HAVE BEEN ABLE TO COLLECT TELLINA VERSICOLOR ALIVE IN TRAILS AT SAN LUIS ONLY RARELY. IT DOES FREQUENTLY WASH UP ON SEA WEED.

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- - CORRECTION - -

INCLUDED WITH THIS ISSUE , YOU WILL FIND A RE-RUN OF PAGES 59-60 AND 65-66 FROM THE FEBRUARY ISSUE . THROUGH ERROR , THE PHOTO OF THE PARVITURBOIDES INTERRUPTUS WAS INVERTED BY THE PRINTER . PLEASE REPLACE THE INCORRECT PAGES WITH THIS COPY .

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SHELLING NOTE

BY H. ODE

DURING A RECENT TRIP TO THE BEACH A LARGE NUMBER OF LIVE SOLENA VIRIDIS WERE COLLECTED IN THE TIDELINE . THIS FOR TEXAS UNUSUAL SPECIES HAS BEEN COLLECTED PREVIOUSLY IN SMALL NUMBERS AT SAN LUIS PASS , GALVESTON ISLAND , BUT ON MARCH 7 , 1971 , HUNDREDS OF LIVE SPECIMENS WASHED ASHORE ALONG HIGH ISLAND BEACH , MOST OF WHICH WERE JUVENILES . APPARENTLY THE EAST TEXAS COAST IS THE MOST WESTWARD AREA OF OCCURRENCE FOR THIS SPECIES , BECAUSE IT HAS NEVER BEEN FOUND WEST OF GALVESTON . IT HAS BEEN REPORTED BY PARKER FOR THE LOUISIANA COAST .

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.....CONTINUED FROM PAGE 69

A LETTER TO THE SOCIETY FROM LEOLA GLASS WAS READ BY DR. ODE .

THE GROUP DISCUSSED SHELL CRAFT AND OTHER CRAFT SALES AT LENGTH , BRINGING UP LEGAL , FINANCIAL AND MORAL ISSUES , ALONG WITH PUBLICITY ASPECT OF CRAFT DISPLAYS .

FOLLOWING MOTION WAS MADE BY JOHN EDSTROM , SECONDED BY SAM MIRON :

"CRAFT ITEMS MADE BY MEMBERS WILL BE TURNED OVER TO THE CLUB , ON CONSIGNMENT , WITH AN INDICATION OF THE COST IN WRITING . ITEMS TO BE FURNISHED ONLY BY MEMBERS , NOT COMMERCIAL SUPPLIERS . AFTER SALES , EXPENSES WILL BE PAID TO SUPPLIERS . PROCEEDS TO SOCIETY WILL BE USED TO DEFRAY EXPENSES OF CLUB PUBLICATIONS ."

FOREGOING MOTION WAS CARRIED BY A VOTE OF 13 FOR -- -- ONE AGAINST .

A SPONTANEOUS DISCUSSION OF A PROPOSED SHELL SHOW OCCURRED ON THE FLOOR . THIRTEEN MEMBERS VOTED BY STANDING TO HAVE SUCH A SHOW THIS YEAR .

CONNIE BOONE DISCUSSED PROGRAM FOR THE MARCH MEETING .

VARIOUS MEMBERS DISCUSSED THE BY-LAWS AND WHAT CHANGES MAY BE NEEDED . PRESIDENT ODE ASKED MEMBERS TO MAKE SUGGESTIONS FOR BY-LAW CHANGES TO BE TAKEN UP LATER .

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SEVEN YEARS AGO I COLLECTED ON FREEPORT BRYAN BEACH SOME SHELLS WHICH WASHED UP ON THE BEACH ENCASED IN A BIG LUMP OF DARK BLUE CLAY. THE COMPOSITION OF THE MOLLUSCFAUNA OF THE CLAY DEFINITELY INDICATED A BAY-ENVIRONMENT, BECAUSE AFTER WASHING, THE CLAY YIELDED A NUMBER OF DEAD HINGED SPECIMENS OF MACOMA MITCHELLI DALL. THIS TELLINID BIVALVE IS RARELY FOUND ON THE OUTER BEACHES OF THE TEXAS COAST, BUT IS MORE COMMON IN THE BRACKISH WATER UPPER PORTIONS OF THE COASTAL BAYS, WHERE IT LIVES. NO LIVE MOLLUSCS WERE PRESENT IN THE CLAY.

A SINGLE RATHER INFLATED SMALL VALVE OF A SPECIES UNKNOWN TO ME WAS FOUND IN THE DEBRIS WASHED OUT OF THE CLAY AND UNTIL RECENTLY REMAINED A PUZZLE. IT RESEMBLES SOMEWHAT A CUSPIDARIA, BUT ON THE WHOLE IT SHOWED A SUFFICIENT NUMBER OF DIFFERENCES, WHICH MADE SUCH AN IDENTIFICATION IMPLAUSIBLE. MOREOVER THE OTHER SPECIES OF SHELLS INDICATED A BAY ENVIRONMENT RATHER THAN THE DEEPER WATER HABITAT WHICH IS COMMON FOR MEMBERS OF THE CUSPIDARIIDAE. I ALSO THOUGHT OF A POSSIBLE RELATIONSHIP WITH HIATELLA, BUT AGAIN THERE WERE MANY ARGUMENTS AGAINST SUCH AN OPINION. SO THE MATTER RESTED UNTIL RECENTLY.

IN VOL. 6, PP. 23-32, 1968 OF THE TULANE STUDIES IN GEOLOGY AND PALEONTOLOGY, E. LEWIS HAS PUBLISHED THE DESCRIPTION AND FIGURES OF A NEW SPECIES OF SPHENIA, WHICH WAS OBTAINED FROM A PLEISTOCENE DEPOSIT IN FLAGLER COUNTY IN FLORIDA. BOTH DESCRIPTION AND FIGURES LEAVE LITTLE DOUBT THAT THE SHELL PICKED UP ON BRYAN BEACH IS IDENTICAL WITH THE NEW SPECIES DESCRIBED FROM FLORIDA AND NAMED SPHENIA TUMIDA. THE FLORIDA SPECIMENS WERE COLLECTED FROM A BED OF BLUE, HIGHLY FOSSILIFEROUS, ARGILLACEOUS MEDIUM SAND, WHICH CONSTITUTES PART OF THE PAMLICO FORMATION. THE FAUNA IN IT CONTAINS MANY ELEMENTS OF A HYPER-SALINE SHALLOW BAY ENVIRONMENT AND HARDLY ANY ELEMENTS INDICATING LOWER SALINITIES. PERHAPS TELLINA TEXANA IS ONE OF THOSE. LEWIS POSTULATED FOR THE FLORIDA SHELLS "A HIGH SALINITY, SHALLOW WATER BAY-ENVIRONMENT WITH A PREDOMINANTLY SAND OR SAND MUD SUBSTRATE, CONSIDERABLE WAVE ACTION, WEAK CURRENTS, AND A MINIMUM WATER TEMPERATURE OF 50° F. TO 60° F."

FOR A DESCRIPTION AND ADDITIONAL INFORMATION ON SPHENIA TUMIDA WE REFER THE READER TO THE PAPER OF LEWIS CITED ABOVE, BUT WE WILL NOTE HERE SOME ADDITIONAL POINTS OF INTEREST. THE FREEPORT SPECIMEN IS IN MOST RESPECTS QUITE SIMILAR TO THE FLORIDA SPECIMENS BUT DIFFERS, AS DO SOME OTHER FLORIDA SHELLS, FROM THE HOLOTYPE AND PARATYPES. THE LATTER ARE DESCRIBED AS THIN SHELLED, FINELY STRIATED AND NOT LARGER THAN 9 MM. OUR SPECIMEN IS OF UNEQUAL THICKNESS AND ESPECIALLY AT THE MARGINS THE SHELL IS SOMEWHAT THICKENED AND NOT THIN, THE SCULPTURE IS RATHER ROUGH AND FINALLY THE SHELL IS OVER 12 MM. IN SIZE. HINGE CHARACTERS AND PALLIAL SINUS ARE AS FAR AS CAN BE SEEN -- THE SHELL IS SLIGHTLY WORN -- IN EXACT AGREEMENT WITH THE FLORIDA MATERIAL. IN HIS DISCUSSION OF OCCURRENCES OF SPHENIA TUMIDA IN FLORIDA OTHER THAN THE TYPE LOCALITY LEWIS MENTIONS SPECIMENS WHICH DIFFER SLIGHTLY FROM THE TYPES IN SEVERAL RESPECTS. IN PARTICULAR THESE VALVES ARE THICKER AND HEAVIER AND ARE CONSIDERED BY LEWIS TO BE AN ECOTYPIC VARIANT OF S. TUMIDA. THIS MATERIAL COMES CLOSEST TO THE FREEPORT BEACH SPECIMEN.

THE TEXAS SPECIMEN MUST, UNLESS EVIDENCE TO THE CONTRARY COMES TO LIGHT, BE CONSIDERED A DERIVATIVE OF A BRACKISH WATER BAY ENVIRONMENT. THE ABOVE MEN-

TIONED DIFFERENCES MAY BE DUE TO DIFFERENCES IN SALINITY; IT IS ALSO POSSIBLE THAT OUR SPECIMEN DISPLAYS GERONTIC CHARACTERISTICS. THE AGE OF THE TEXAS SPECIMEN IS UNKNOWN AND DIFFICULT TO ASCERTAIN WITHOUT FURTHER STUDY OF THE MATERIAL FROM WHICH IT WAS RECOVERED. A PLEISTOCENE AGE IS QUITE POSSIBLE. S. TUMIDA MUST BE AN UNUSUAL SPECIES BECAUSE UNTIL NOW IT HAS ESCAPED THE ATTENTION OF SHELL COLLECTORS ALONG THE SHORES OF THE NORTHERN GULF. COLLECTING ALONG THE MUD BANKS OF THE INTRACOASTAL CANAL NEAR FREEPORT AND OTHER PARTS OF THE TEXAS COAST MIGHT DISCLOSE ADDITIONAL SPECIMENS.

WE HOPE TO FIGURE THE SPECIMEN IN A FUTURE ISSUE OF THE TEXAS CONCHOLOGIST.

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MORE ON MUS

BY CONSTANCE BOONE

CYPRAEA MUS WAS GIVEN AN INAPPROPRIATE NAME BY LINNEAUS! WHILE VISITING IN CORPUS CHRISTI RECENTLY, I TALKED WITH MRS. MAGGIE ROSS, ONE OF THE THREE TEXANS WHO COLLECTED CYP. MUS ALIVE IN VENEZUELA. SHE HAPPENED TO REMARK THAT SHE OBSERVED BOYS OUT IN THE LAGOON COLLECTING THE CYPRAEA AND ASKED THEM WHAT THEY WANTED WITH THEM. IT SEEMS THAT THE MEN OF THE VILLAGE WANTED THE SHELLS BECAUSE THEY ATE THE MEAT. THIS WAS SUPPOSED TO INCREASE VIRILITY.

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TWO MINUTE SHELLS FROM GUAYMAS

BY CONSTANCE BOONE

I WAS ASKED RECENTLY WHAT SHELLS I COLLECTED ON MY TRIP TO GUAYMAS, SONORA, MEXICO, THIS LAST JANUARY, THAT I WAS ESPECIALLY PROUD TO OBTAIN. MY REPLY WAS IMMEDIATE. WHILE THE TWO SPECIES WOULD NOT APPEAL TO EVERYONE, MY PRIZE FINDS WERE OF LIVE-TAKEN ZINEZONA RIMULOIDES CARPENTER, 1865, AND LIVE-TAKEN OXYNOE PANAMENSIS PILSBRY AND OLSSON, 1943. THE REASON, I GUESS, IS THAT I HAVE DESIRED SIMILAR SPECIES FROM THE ATLANTIC AND GULF WATERS FOR A VERY LONG TIME, AND HAVE JUST RECENTLY ACQUIRED SCHISMOPE CINGULATA O.G. COSTA, 1861, FROM FLORIDA, DREDGED AND SENT TO ME BY A FRIEND. I STILL HAVEN'T GOTTEN THE OXYNOE FROM FLORIDA. EDNA MARCOTT ONCE DREW THIS ANIMAL AND SHELL FOR PUBLICATION IN SEAFARI AND THE FLORIDA COLLECTORS TALK OF GETTING THIS MOLLUSK ON ALGAE.

ZINEZONA AND SCHISMOPE ARE MINUTE SPECIES OF ABOUT ONE MILLIMETER THAT BELONG IN THE FAMILY SCISSURELLIDAE. THEY ARE SLIT-SHELLS, MINUTE MOLLUSKS THAT HAVE A BELT GROOVE AROUND THE MIDDLE WHIRL, WITH AN OPEN SLIT THEREIN TO THE EDGE, WHICH IS SUPPOSED TO CLOSE IN THE SPECIES WHEN ADULT. THE SCHISMOPE I FOUND WERE CRAWLING NEAR THE SPINES ON PINNA RUGUOSA. THE ANIMAL IS PALE STRAW COLORED. CHECK THE SCHISMOPE SPECIES DESCRIBED IN CARIBBEAN SEASHELLS AND SEE MYRA KEEN'S DRAWING IN SEA SHELLS OF TROPICAL WEST AMERICA FOR THE TWO OTHER SPECIES.

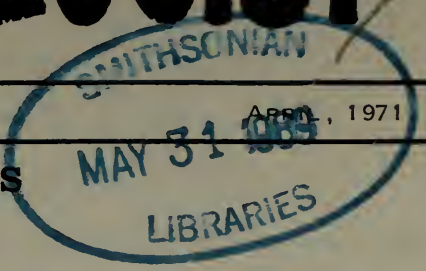
MY OXYNOE WERE FOUND CRAWLING ALONG UNDER ROCKS MUCH LIKE GARDEN SLUGS, EXCEPT THESE WERE SHERBET, LIME GREEN. THE ANIMAL IS MUCH BIGGER THAN THE LITTLE FOLDED-IN TYPE BUBBLE SHELL IT COVERS. UNDER A LENS, THE ANIMAL WAS COVERED WITH REDDISH DOTS. THEY WERE FOUND NEAR AN ALGAE BLOOM NEAR A SEWAGE DISPOSAL INTO THE BAY.

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# CONCHOLOGIST

VOLUME VII, No. 8



## NOTES & NEWS

### NEXT MEETING

#### SAFARI TO AFRICA FOR SHELLS

ANOTHER REAL TREAT IS IN STORE FOR MEMBERS AT THE APRIL MEETING. THIS TIME WE'LL HAVE A "SHELLING SAFARI TO AFRICA". MRS. C. CAMDEN ERNEST OF SAN ANTONIO WILL BE OUR GUEST SPEAKER TO TELL ABOUT TWO COLLECTING TRIPS TO AFRICA, THE MOST RECENT LAST FALL. SHE WILL BRING SHELLS TO SHOW AND HAVE A MOVIE. THE MEETING, AS USUAL, WILL BE HELD AT THE HOUSTON MUSEUM OF NATURAL SCIENCE AND WILL BEGIN AT 8 P.M. ON APRIL 28. BRING YOUR FRIENDS.

TWO YEARS AGO, ISABELL ERNEST FLEW TO AFRICA TO SHELL AND MEET WITH SOME VERY WELL KNOWN COLLECTORS. WHEN SHE CAME BACK FROM THIS TRIP, SHE GOT OFF THE PLANE AND HANDED HER HUSBAND THE FAMED CYPRAEA FULTONI SOWERBY, 1903. THIS COWRIE HAS BEEN RECOVERED ONLY FROM THE STOMACHS OF FISH. MANY OF THE COWRIES FROM AFRICA ARE KNOWN ONLY FROM BEACH SPECIMENS OR FROM DEEP WATER. MRS. ERNEST WILL BE ABLE TO DISPLAY MANY OF HER TREASURES FROM THE INDIAN OCEAN.

\* \* \* \* \*

OUR MEMBERS ARE ALSO REMINDED OF THE AUCTION OF THE TWO PRIME SPECIMENS OF THE TIGER COWRIE DONATED BY MR. E. R. CROSS OF THE HAWAIIAN MALACOLOGICAL SOCIETY.

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### 37TH ANNUAL MEETING OF THE AMERICAN MALACOLOGICAL UNION

THIS MEETING WILL BE HELD FROM JULY 15 TO 19 AT COCOA BEACH, FLORIDA. THOSE WHO PLAN TO ATTEND SHOULD MAKE RESERVATIONS NOW. SEVERAL INTERESTING FIELD TRIPS ARE PLANNED.

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SEVERAL OF OUR MEMBERS WON TROPHIES AND FIRST PLACE IN THE DIVISIONS THEY ENTERED AT THE ROCK AND MINERAL AND SHELL SHOW IN BAY CITY, MARCH 5TH AND 6TH.

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### THREE NUDIBRANCHS FROM SOUTH PADRE ISLAND.

BY H. ODÉ

FROM MR. GEORGE LINNEY I RECEIVED THREE DIFFERENT SPECIES OF LIVE COLLECTED NUDIBRANCHS FROM THE LAGUNA MADRE AND THE CAUSEWAY AT SOUTH PADRE ISLAND. UNFORTUNATELY I CANNOT IDENTIFY THEM. ONE IS A SMALL GRAYISH ANIMAL OF UNI-

.....CONTINUED ON PAGE 92

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### CORRECTION!

IN THE PREVIOUS ISSUE, THE NAME OF ONE OF THE LISTED SPECIES WAS MISSPELLED.  
ALBINA CERITHIIOIDES SHOULD BE ALABINA CERITHIIOIDES.

### FAMILY HYDROBIIDAE

LITTORIDINOPS MONROENSIS FRAUENFELD, 1863. THIS SPECIES IS OFTEN SO COMMON  
IN BEACHDRIFT IN THE GALVESTON AREA, MAINLY SAN LUIS PASS, THAT, ALTHOUGH  
IT LIVES MOSTLY IN FRESH OR ALMOST FRESH WATER, IT SHOULD BE LISTED HERE.  
THE IDENTIFICATION MADE HERE CANNOT BE CONSIDERED DEFINITE, AS WE HAVE NOT  
ANALYSED ANY LIVE MATERIAL. THIS SPECIES, AND IN ALL PROBABILITY, A NUM-  
BER OF RELATED SPECIES, CLOSELY RESEMBLING IT, OCCUR IN BEACHDRIFT ALONG  
THE ENTIRE TEXAS COAST FROM SABINE TO PORT ISABEL.

FIGURED IN: SEE BOOK OF REVIEW, TEX. CONCH., VOL. 6, P. 56.

PREVIOUS REFERENCES: LIST OF DR. H. HARRY

LOCALITIES: ALONG THE ENTIRE TEXAS COAST.

LITTORIDINOPS SP. INDET. ONE OF THESE RELATED SPECIES IS MENTIONED HERE. AT  
ROCKPORT, PORT ARANSAS AND SOUTH PADRE ISLAND A NUMBER OF SHELLS OF A  
RELATED SPECIES HAS BEEN COLLECTED. THEY ARE THICKER IN STRUCTURE, LESS  
INFLATED, AND SLIGHTLY SMALLER IN SIZE THAN L. MONROENSIS. THE SPECIES  
IS UNKNOWN TO US.

FIGURED IN: NOT AVAILABLE

PREVIOUS REFERENCES: NONE

LOCALITIES: ROCKPORT, PORT ARANSAS, SOUTH PADRE ISLAND.

CALIPYRGULA CIRCUMSTRIATA LEONARD AND HO, 1960. BEACHDRIFT AT PORT ISABEL  
AND PORT MANSFIELD USUALLY CONTAINS SOME SPECIMENS OF THIS SPECIES. NO  
LIVE SPECIMENS HAVE EVER BEEN COLLECTED AND IT IS POSSIBLE THAT THE SPECIES  
IS EXTINCT. THE SPECIES WAS DESCRIBED FROM OLD DEPOSITS ALONG THE PECOS  
RIVER, BUT IT IS UNLIKELY THAT OUR MATERIAL WAS TRANSPORTED THAT FAR. THIS  
LITTLE SHELL IS EXTREMELY VARIABLE IN SCULPTURAL DETAIL.

FIGURED IN: NAUTILUS, VOL. 73, P. 125, PL. 12, FIGS. 1-3.

PREVIOUS REFERENCES: TEXAS CONCHOLOGIST.

LOCALITIES: PORT MANSFIELD, PORT ISABEL.

FAMILY DIPLODONTIDAE.

DIPLODONTA TURGIDA VERRILL AND SMITH, 1881. IT IS POSSIBLE THAT THIS SPECIES IS NO LONGER CORRECTLY DESIGNATED BY ABOVE NAME, BUT LACKING THE PERTINENT INFORMATION WE HAVE DECIDED TO NAME IT THUS. THERE IS NO DOUBT THAT OUR SPECIMENS ARE FULLY IDENTICAL WITH THE SHELL FIGURED IN THE FAMOUS BULLETIN 39 BY DALL. THIS SPECIES IS COMMON IN OFFSHORE DREDGINGS AND IS THE LARGEST AND MOST INFLATED OF ALL TEXAS DIPLODONTAS. SO FAR ONLY COLLECTED ON A BEACH NEAR PORT O'CONNOR WHERE ABOUT 20 LIVE SPECIMENS OF VARIOUS SIZES WERE OBTAINED, AND AT SAN LUIS PASS, WHERE TWO WORN SPECIMENS WERE TAKEN.

FIGURED IN: 22

PREVIOUS REFERENCES: NONE

LOCALITIES: SAN LUIS PASS, PORT O'CONNOR.

FAMILY TELLINIDAE.

TELLINA SYBARITICA DALL, 1881. A LARGE NUMBER OF DEAD SPECIMENS WERE OBTAINED FROM DRIFT COLLECTED AT THE COAST GUARD STATION AT SOUTH PADRE ISLAND. THE SPECIES DIFFERS IN SCULPTURE AND COLORATION FROM TELLINA VERSICOLOR. THE LATTER IS WIDESPREAD AND COMMON IN BEACHDRIFT AND IS KNOWN ALIVE FROM SEVERAL LOCATIONS, BUT T. SYBARITICA, WHICH APPEARS TO LIVE SLIGHTLY DEEPER IS SO FAR A RARE BEACHSHELL. POSSIBLY INTRODUCED BY SHRIMPERS AT THIS LOCATION.

FIGURED IN: 3, 21

PREVIOUS REFERENCES: NONE

LOCALITIES: SOUTH PADRE ISLAND.

FAMILY CARDIIDAE.

LAEVICARDIUM PICTUM RAVENEL, 1861. THIS ABUNDANT OFFSHORE SPECIES HAS BEEN TAKEN ON ST. JOSEPH ISLAND AND AT PORT ISABEL. AT THE LATTER LOCATION A FEW SPECIMENS WERE RAFTED ASHORE ON A CLUMP OF WHIPCORAL. IT IS A QUITE VARIABLE SHELL, WHICH CAN VARY CONSIDERABLY IN FLATNESS. L. FISKI RICHARDS IN OUR OPINION IS MERELY A SMALL INFLATED FORM OF IT.

FIGURED IN: 3,4,21

PREVIOUS REFERENCES: 19, LISTED BY HARRY.

LOCALITIES: ST. JOSEPH ISLAND, SOUTH PADRE ISLAND.

PAPYRIDEA SEMISULCATUM GRAY, 1825. A VERY SMALL JUVENILE VALVE OF THIS RATHER RARE SPECIES WAS TAKEN FROM BEACHDRIFT COLLECTED AT THE COAST GUARD STATION AT SOUTH PADRE ISLAND. (FEBR. 1970, COLL. ODE). IT IS COMPLETELY DIFFERENT FROM VALVES OF THE SAME SIZE OF THE RELATED SPECIES P. SOLENIFORME, BUT IS EXACTLY SIMILAR TO VALVES OBTAINED NEAR MIAMI, FLORIDA. AS FAR AS WE KNOW, THIS IS THE FIRST REFERENCE TO THIS SPECIES FOR THE WESTERN GULF. HOWEVER, AN ADVENTITIOUS ORIGIN OF THIS SPECIES CANNOT BE RULED OUT, BECAUSE "EXOTIC" SHELLS ARE OCCASIONALLY COLLECTED AT THIS LOCATION.

FIGURED IN: 3,21

PREVIOUS REFERENCES: NONE

LOCALITIES: SOUTH PADRE ISLAND.

THIS MONTH'S COMMENTS MIGHT WELL BE TITLED "EXCERPTS FROM A MARSHALL ISLANDS DIARY". THEY CONCERN THINGS THAT HAPPENED DURING MY RECENT (FEBRUARY AND MARCH, 1971) TRIP TO THE MARSHALL ISLANDS. SINCE SHELLS AND SHELL-COLLECTORS ARE INVOLVED, THESE PARAGRAPHS MAY BE OF INTEREST TO THE CLUB MEMBERS.

FIRST, THERE IS ERNIE LIBBY, FORMER MEMBER OF THE HOUSTON CONCHOLOGY SOCIETY, NOW LIVING ON SAIPAN IN THE MARSHALL ISLANDS. TO HIS FRIENDS, THE MEDICAL REPORT ON ERNIE IS EXCEPTIONALLY GOOD. THE BEST EVIDENCE FOR THE SUCCESS OF HIS BILATERAL HIP REPLACEMENT LAST YEAR WAS THE SIGHT OF ERNIE SHELLING ALONG THE REEF ON RONGELAP KNEE-DEEP IN THE SWIRLING SURF. ERNIE IS NOW CONTRIBUTING HIS BOUNDLESS ENERGIES AND TALENTS TO THE ACTIVITIES OF THE NEWLY FORMED SAIPAN SHELL CLUB. THIS INCLUDES THE PUBLICATION OF THEIR CLUB JOURNAL "SHELL 'N TELL". (ERNIE SAYS HIS CLUB MEMBERS WILL BE LOOKING FOR EXCHANGE CONTACTS.)

SECOND, WE VERIFIED SOME EXCITING NEWS CONCERNING STROMBUS TAURUS. SEVERAL OF THE COLLECTIONS WE SAW ON KWAJALEIN DISPLAYED NICE SPECIMENS OF STROMBUS TAURUS. ON INQUIRY, WE FOUND THAT THESE CAME FROM THE KWAJALEIN LAGOON. HITHERTO, THIS SPECIES WAS CONSIDERED TO BE RESTRICTED TO THE RONGELAP ATOLL. (RONGELAP ATOLL IS SOME 150 MILES NORTHWEST OF THE KWAJALEIN ATOLL. APPARENTLY THE TAURUS IS FOUND AT DEPTHS OF 60 FEET TO 160 FEET AND BEYOND. IT IS POSSIBLE THEREFORE THAT WITH SCUBA GEAR ONE MIGHT LOCATE STROMBUS TAURUS IN DEEP WATERS OF OTHER ATOLLS.

THIRD, I WOULD LIKE TO MENTION ELMER LEEHMAN AND ELLIS CROSS. ELMER IS VICE-PRESIDENT OF THE HAWAIIAN MALACOLOGICAL SOCIETY AND CHAIRMAN OF THIS YEAR'S SHELL SHOW - A BIG EVENT IN HONOLULU. ELMER DROVE ME TO THE CROSS RESIDENCE. ELLIS WAS DOING SOME HARD RESEARCH ON A PLANNED ARTICLE ON PLEUROTOMARIAS BUT HE TOOK TIME OUT TO CHAT ABOUT SHELLS, SHELLING AND SHELLERS. WHEN I LEFT, ELLIS PUT A MATCHED PAIR OF GIANT TIGER COWRIES (CYPRAEA SCHILDERIANA) IN MY HANDS AND SAID THAT THEY WERE BEING DONATED FOR THE HOUSTON CONCHOLOGICAL SOCIETY SHELL AUCTION. THE PROCEEDS ARE TO BE USED TO DEFRAY PUBLICATION EXPENSES OF THE TEXAS CONCHOLOGIST. CAN YOU BEAT SUCH GENEROSITY?

I SHOULD ALSO MENTION THE SPECIMEN I SAW OF THE SPONDYLUS SPECIES. THE THING WAS FULLY 14 INCHES IN DIAMETER AND THE VALVES WERE MORE THAN AN INCH THICK. A FEW OF THESE BIVALVES HAD BEEN FOUND ATTACHED TO CABLES IN 60 FEET OF WATER ON KWAJALEIN. DEANO DEAN, THE DIVER, WHO HAD FOUND THESE SPECIMENS (AND HAD GONE TO THE TROUBLE OF LOCATING ONE FOR ME TO INSPECT) APOLOGIZED FOR SHOWING ME A SMALL ONE ONLY. HE HAD ACTUALLY COLLECTED SOME THAT WERE CONSIDERABLY LARGER! I WOULD BE INTERESTING TO SPECULATE ON THIS APPARENT GIANTISM SINCE MOST BIOLOGICAL GROWTH PHENOMENA SEEM TO HAVE BUILT-IN LIMITS.

FINALLY, IT MAY BE NEWS TO REPORT THAT THE KWAJALEIN SHELL CLUB IS BEING REORGANIZED. A HIGH LEVEL OF ENTHUSIASM WAS APPARENT AMONG THE 30 PLUS COLLECTORS WHO ATTENDED THE MEETING. SINCE ALMOST ALL KWAJALEIN COLLECTORS SEEM TO BE GOOD DIVERS, CHANCES OF EXCHANGING FOR EXOTIC SPECIMENS SHOULD BE REAL.

ANGUISPIRA ALTERNATA STRONGYLODES (PFEIFFER)

HELIX STRONGYLODES PFEIFFER, 1854, PROC. ZOOL. SOC., LONDON, P. 53.

ANGUISPIRA ALTERNATA STRONGYLODES PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 577, FIGS. 310A-B.

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BRAZORIA, BRAZOS, BURLESON, CHAMBERS, DALLAS, DEWITT, FAYETTE, FORT BEND, GALVESTON, GONZALES, HAMILTON, HARRIS, HAYS, LAVACA, MATAGORDA, MCLENNAN, NUECES, ROBERTSON, VICTORIA, WHARTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BASTROP, BELL, BOWIE, CALDWELL, COLORADO, COMAL, CORYELL, GRAYSON, GUADALUPE, JACKSON, TRAVIS, WILLACY, WILLIAMSON COUNTIES.

REMARKS: THIS SPECIES, A. ALTERNATA, WAS ONE OF THE FIRST TO BE DISCOVERED IN AMERICA. IT HAS A VARIETY OF HABITATS THAT RANGE FROM ABOREAL TO BURROWING. MOST TYPICALLY, IT HAS BEEN FOUND UNDER DEAD LOGS AND IN SHALLOW BURROWS. THE SUBSPECIES STRONGYLODES IS DIFFERENTIATED BY THE REDUCED COLOR OF THE SPOTS AND A SOMEWHAT WEAKER RIBBING. ITS DISTRIBUTION IN TEXAS IS LOCALIZED TO THE TEXAN PROVINCE.

IT SHOULD BE LOOKED FOR IN THE HOUSTON CITY AREA; THE ONLY RECORD FROM THERE BEING OPEN TO QUESTION.

ANGUISPIRA ALTERNATA CRASSA B. WALKER

ANGUISPIRA ALTERNATA CRASSA "CLAPP" B. WALKER, 1928, TERR. MOLL. ALABAMA, P. 11, FIG. 161.

ANGUISPIRA ALTERNATA CRASSA PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 579, FIGS. 313A-G.

DISTRIBUTION: SPECIMENS EXAMINED FROM HARDIN, HARRIS, JASPER COUNTIES. PREVIOUS PUBLISHED RECORDS FROM CASS, SHELBY COUNTIES.

REMARKS: THIS RACE HAS A WIDE RANGE IN THE SOUTHWESTERN STATES TO THE EAST. IT DIFFERS FROM STRONGYLODES IN HAVING A HEAVIER, MORE STRONGLY RIBBED SHELL. THE COLOR MARKINGS ARE ALSO MORE PRONOUNCED. THE "BIG THICKET" OF EAST TEXAS PROBABLY REPRESENTS ITS WESTERN RANGE. IT IS FOUND IN MORE HUMID HABITATS THAN STRONGYLODES. IT IS ONE OF THE DISTINCTIVE ELEMENTS OF THE AUSTRORIPARIAN PROVINCE.

THE NEAREST LOCALITY TO HOUSTON OF THIS FORM IS THE SAN JACINTO RIVER BOTTOMS NEAR SHELDON.

HELICODISCUS (HELICODISCUS) EIGENMANNI PILSBRY

HELICODISCUS EIGENMANNI PILSBRY, 1900, NAUTILUS, XIV, PT. 4, PG. 41.

HELICODISCUS EIGENMANNI PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 630, FIGS. 342A-C.

DISTRIBUTION: SPECIMENS EXAMINED FROM BANDERA, BRAZORIA, BRAZOS, BREWSTER, BURLESON, BURNET, CALHOUN, COMAL, DALLAS, EL PASO, HARDIN, HARRIS, FORT BEND, FAYETTE, JEFF DAVIS, KERR, KNOX, LEE, MATAGORDA, MCLENNAN, MILAM, NUECES, PECOS, POLK, REFUGIO, ROBERTSON, SAN PATRICIO, SAN SABA, TRAVIS, UVALDE, VAL VERDE COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BASTROP, BORDEN, BRISCOE, BROOKS, CAMERON, CLAY, COOKE, CROSBY,

DALLAM, ELLIS, HAYS, HIDALGO, GARZA, HOWARD, JACKSON, KENDALL, LUBBOCK, LYNN, MEDINA, RANDALL, REAL, SOMERVELL, STONEWALL, SWISHER, TERRELL, WARD COUNTIES.

REMARKS: MOST PROBABLY THIS SPECIES IS MORE GENERALLY DISTRIBUTED IN TEXAS THAN PRESENT RECORDS SHOW. IT IS FOUND MOST FREQUENTLY BENEATH BARK OF DEAD TREES, WITH A SEEMING PREFERENCE FOR THOSE STILL STANDING.

IT HAS BEEN TAKEN OCCASIONALLY IN THE HOUSTON CITY AREA.

PUNCTUM VITREUM H. B. BAKER

PUNCTUM VITREUM H. B. BAKER, 1930, OCC. PAP. MUS. ZOOLOG. MICHIGAN, No. 220, P. 9, PL. 7, FIGS. 3 TO 6.

PUNCTUM VITREUM PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 649, FIGS. 356A-D.

DISTRIBUTION: SPECIMENS EXAMINED FROM BANDERA, BRAZORIA, BREWSTER, BURLESON, COMAL, HARRIS, KARNES, LAVACA, MADISON, MCLENNAN, ROBERTSON, SOMERVELL, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ARCHER, BASTROP, BOSQUE, COLORADO, HAYS, MEDINA, UVALDE, VAL VERDE COUNTIES.

REMARKS: P. VITREUM IS PROBABLY MORE WIDELY DISTRIBUTED IN TEXAS THAN PRESENT RECORDS SHOW. OWING TO ITS MINUTE SIZE (0.8 TO 1 MM. IN DIAMETER) IT EASILY ESCAPES OBSERVATION. THERE ARE THREE RECORDS FROM HARRIS COUNTY, ONE OF THEM FROM WITHIN THE HOUSTON CITY LIMITS.

PHILOMYCUS CAROLINIANUS FLEXUOLARIS RAFINESQUE

PHILOMYCUS FLEXUOLARIS RAFINESQUE, 1820, ANNALS OF NATURE, P. 10.

PHILOMYCUS CAROLINIANUS FLEXUOLARIS PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 756, FIGS. 403C (INTERNAL ANATOMY), 405, 406A, B, C, E.

DISTRIBUTION: SPECIMENS EXAMINED FROM FORT BEND, GONZALES, HARDIN, HARRIS, LEON, MONTGOMERY, NEWTON, POLK, TYLER COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, FALLS, LIBERTY, MCLENNAN COUNTIES.

REMARKS: THIS SLUG IS UBIQUITOUS FROM SOUTHERN ONTARIO TO ALABAMA AND ENTERS THE EASTERN SECTION OF TEXAS AND OKLAHOMA. IT IS EASILY RECOGNIZED AND CAN READILY BE FOUND IN THE RIVER BOTTOMS UNDER DECAYING WOOD WHERE IT FEEDS ON FUNGUS.

IT IS COMMON IN HOUSTON AT MEMORIAL PARK.

CATINELLA AVARA (SAY)

SUCCINEA AVARA SAY, 1824, IN KEATING'S NARRATIVE OF LONG'S EXPEDITION; II, APPENDIX, P. 260.

SUCCINEA AVARA PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 837, FIG. 455C-K.

SUCCINEA VERMETA SAY, 1829, NEW HARMONY DISSEMINATOR, II, P. 230.

CATINELLA AVARA W. H. PEASE, 1871.

DISTRIBUTION: SPECIMENS EXAMINED FROM ARANSAS, BANDERA, BRAZORIA, BURLESON, COMAL, CORYELL, DALLAS, EL PASO, GILLESPIE, GONZALES, HARDIN, HARRIS, HIDALGO, KARNES, KLEBERG, LEON, LIBERTY, LIVE OAK, MILAM, NUECES, POLK, PRESIDIO, REFUGIO, ROBERTSON, TARRANT, TYLER, UVALDE, VICTORIA, WASHINGTON, WHARTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BASTROP, BEXAR, BORDEN, BRISCOE, CRANE, CROCKETT, CROSBY, DALLAM, DAWSON, ELLIS,



FALLS, FLOYD, GAINES, GARZA, GLASSCOCK, HAYS, HOWARD, JEFF DAVIS, JEFFERSON, KINNEY, LUBBOCK, LYNN, MARTIN, MCLENNAN, MEDINA, PECOS, RANDALL, REEVES, ROCKWALL, SHERMAN, SWISHER, TITUS, TRAVIS, VAL VERDE, WARD, WEBB, WILSON, WINKLER COUNTIES.

REMARKS: CATINELLA AVARA IS PERHAPS THE MOST COMMON AND WIDESPREAD AMBER SNAIL (SUCCINEID) OF NORTH AMERICA (AS FAR NORTH AS LAT. 62°); SOUTHWARD IT EXTENDS INTO NORTHERN MEXICO. IT SEEMS TO ADAPT ITSELF TO A VERY WIDE RANGE OF ECOLOGICAL CONDITIONS AND IS OFTEN SPREAD ABOUT BY MAN; IT IS FREQUENTLY FOUND IN DRY TO SEMI-ARID ENVIRONMENTS.

SUCCINEA LUTEOLA GOULD

SUCCINEA LUTEOLA A. GOULD, 1848, PROC. BOSTON SOC. NAT. HIST., III, P. 37.

SUCCINEA LUTEOLA PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 828, FIGS. 499B (GENITALIA) AND 450A-G.

DISTRIBUTION: SPECIMENS EXAMINED FROM ARANSAS, BLANCO, CAMERON, FRIO, HIDALGO, JEFF DAVIS, JIM WELLS, KENEDY, KIMBLE, KINNEY, LEE, MILAM, NUECES, PECOS, STARR, TERRELL, VICTORIA, WEBB, ZAPATA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BEXAR, BRAZORIA, COMAL, DALLAS, GALVESTON, GUADALUPE, HARRIS, KENDALL, MAVERICK, MCLENNAN, MEDINA, MITCHELL, REEVES, SAN PATRICIO, TARRANT, TRAVIS, UVALDE, WHARTON, WILLACY COUNTIES.

REMARKS: THIS SPECIES IS FOUND IN MANY HABITATS AWAY FROM WATER. THIS SNAIL IS EXTREMELY VARIABLE IN ALMOST EVERY RESPECT SUCH AS SIZE, COLOR, SHAPE AND SCULPTURE. SOME OF THE PREVIOUS PUBLISHED RECORDS MAY THEREFORE BE BASED ON MISIDENTIFICATIONS.

THERE IS ONE PUBLISHED RECORD FROM HARRIS CO. (HOUSTON), WHICH SHOULD BE CONFIRMED, AS NEITHER THE AUTHOR NOR DR. BEQUAERT COLLECTED IT THERE.

STROBILOPS (STROBILOPS) LABYRINTHICA TEXASIANA PILSBRY AND FERRISS.

STROBILOPS LABYRINTHICA TEXASIANA PILSBRY AND FERRISS, 1906, PROC. ACAD. NAT. SCI., PHILA., LVIII, P. 147.

STROBILOPS TEXASIANA PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 856, FIGS. 464 (5-11).

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BOSQUE, BRAZORIA, BRAZOS, BURLESON, BURNET, CALHOUN, COMAL, DALLAS, FAYETTE, FORT BEND, GALVESTON, GRAYSON, GUADALUPE, HAMILTON, HARDIN, HARRIS, HAYS, KARNES, KENDALL, KERR, LAVACA, LIBERTY, MATAGORDA, MCLENNAN, NUECES, REFUGIO, SAN PATRICIO, TRAVIS, VICTORIA, WASHINGTON, ZAPATA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BASTROP, BEXAR, BROOKS, CAMERON, COOKE, CROSBY, DALLAM, ELLIS, FRIO, GARZA, HIDALGO, JACKSON, JEFFERSON, LEE, LUBBOCK, SOMERVELL, TARRANT, WICHITA, WILLACY COUNTIES.

REMARKS: S. L. TEXASIANA IS GENERALLY DISTRIBUTED OVER THE EASTERN HALF OF TEXAS. OVER ONE HALF OF ALL SMALL SNAILS FOUND IN DRIFT ON THE BEACHES OF TEXAS BELONG TO THIS SPECIES. WHEREVER IT OCCURS IT IS ABUNDANT. IT IS FOUND MOST COMMONLY UNDER BARK OF ROTTING LOGS.

IT IS A COMMON SNAIL WITHIN THE HOUSTON CITY LIMITS.

STROBILOPS (DISCOSTROBILOPS) HUBBARDI (A. D. BROWN)

HELIX HUBBARDI A. D. BROWN, 1861, PROC. ACAD. NAT. SCI. PHIL., P. 335.

STROBILOPS HUBBARDI PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 865, FIGS. 468 (1-9).

DISTRIBUTION: SPECIMENS EXAMINED FROM CALHOUN, NUECES, REFUGIO COUNTIES. PREVIOUS PUBLISHED RECORDS. NONE.

REMARKS: THIS SPECIES IS KNOWN FROM NORTHEASTERN MEXICO, THE GULF COAST IN TEXAS, MISSISSIPPI, FLORIDA, GEORGIA, CUBA, JAMAICA AND THE BAHAMAS. IT WAS ORIGINALLY DESCRIBED FROM A FEW DEAD SHELLS COLLECTED AT INDIANOLA, CALHOUN COUNTY, PRESUMABLY IN BEACHDRIFT. A FEW ADDITIONAL DEAD SPECIMENS WERE COLLECTED IN 1957-1958 BY THE AUTHOR AND DR. BEQUAERT FROM BEACH DRIFT AT THE NORTH END OF PADRE ISLAND, NUECES COUNTY, AND FROM DRIFT OF THE GUADALUPE RIVER, THREE MILES NORTHEAST OF TIVOLI, REFUGIO COUNTY (THREE TO FOUR MILES ABOVE THE MOUTH OF THE RIVER IN SAN ANTONIO BAY). NO LIVING SPECIMENS HAVE BEEN COLLECTED IN TEXAS AND IT IS MOST DOUBTFUL THAT THE SPECIES IS NOW PART OF THE TEXAS FAUNA.

GASTROCOPTA (VERTIGOPSIS) PENTODON (SAY)

VERTIGO PENTODON SAY, 1821, JOURN. ACAD. NAT. SCI. PHIL., II, P. 376.

GASTROCOPTA (VERTIGOPSIS) PENTODON PILSBRY, 1948, LAND MOLL. NORTH AMER., II, PT. 2, P. 886, FIGS. 477 (2, 3 AND 5-8).

PUPA TAPPANIANA "WARD" C. B. ADAMS, IN THOMPSON'S HISTORY OF VERMONT, P. 158.

GASTROCOPTA (VERTIGOPSIS) TAPPANIANA PILSBRY, 1948, LAND MOLL. N. AMER., II, PT. 2, P. 889, FIG. 477 (9).

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BRAZORIA, BRAZOS, BURLESON, CALHOUN, CAMERON, COMAL, EL PASO, FAYETTE, FORT BEND, GALVESTON, HARRIS, JEFF DAVIS, KERR, LAVACA, LIBERTY, MADISON, MATAGORDA, MCLENNAN, MEDINA, MILAM, NUECES, REEVES, REFUGIO, ROBERTSON, SAN PATRICIO, SAN SABA, UVALDE, VAL VERDE, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ARCHER, ARMSTRONG, BASTROP, BRISCOE, BROOKS, COLORADO, CROSBY, DALLAM, ELLIS, FRIO, GAINES, GARZA, HARDEMAN, HARTLEY, HAYS, LEE, LUBBOCK, MAVERICK, RANDALL, ROBERTS, SOMERVELL, SWISHER, TAYLOR, WARD, WILLACY COUNTIES.

REMARKS: G. PENTODON IS EXTREMELY VARIABLE IN MOST SHELL CHARACTERS, SUCH AS SHAPE, SIZE, AND NUMBER OF APERTURAL TEETH; NINE DIFFERENT NAMES HAVE BEEN PROPOSED FOR 1ST VARIATIONS, NONE OF THEM WORTHY OF RECOGNITION, EVEN AS SUBSPECIES, ACCORDING TO DR. BEQUAERT (PERSONAL COMMUNICATION). IN PARTICULAR, HE STATES THAT THE MORE OBESE ("OVATE-CONIC") FORM CALLED G. TAPPANIANA BY PILSBRY (HIS FIG. 477 (9) OF 1948), IS CONNECTED BY TRANSITIONAL SPECIMENS WITH THE MORE SLENDER ("OBLONG-CONIC") FORM (PILSBRY'S FIGS. 477 (2,3, AND 7-8) OF 1948). MOREOVER, THE NAME TAPPANIANA WAS ORIGINALLY BASED ON THE MORE SLENDER FORM, AS SHOWN BY C. B. ADAMS' TYPE (SEE W. J. CLENCH, 1965, NAUTILUS, LXXVIII, P. 106), WHICH IS NEARER IN SHAPE TO PILSBRY'S FIG. 7 OF TYPICAL PENTODON, THAN TO HIS FIG. 9 OF HIS SUPPOSED TAPPANIANA.

PILSBRY POINTED OUT THAT G. PENTODON IS FOUND OVER A GREATER AREA THAN ANY OTHER NORTH AMERICAN GASTROCOPTA. IT APPEARS TO BE GENERALLY DISTRIBUTED IN TEXAS, ALTHOUGH THERE ARE AS YET FEW RECORDS FROM THE AUSTRORIPARIAN PROVINCE. IT IS TAKEN OCCASIONALLY WITHIN THE HOUSTON CITY LIMITS.

TO BE CONTINUED.....

FOR A TEXAS SHELLCOLLECTOR IT IS SOMEWHAT SURPRISING TO NOTE THAT THIS SPECIES WAS DESCRIBED ONLY AS LATE AS 1961 FROM THE CAROLINAS. THIS SMALL GASTROPOD IS NOT RARE IN BEACHDRIFT ALL ALONG THE TEXAS COAST AND IS SOMETIMES DREDGED IN CONSIDERABLE NUMBERS ALIVE IN THE INLETS AND SHALLOWER PORTIONS OF THE TEXAS OFFSHORE SHELF. THE SPECIES IS CONSIDERABLY SMALLER THAN ITS RELATED SPECIES IN THE GENUS MENESTHO IN TEXAS AND IS FAR MORE BARRELSHAPED. THE PHOTOGRAPH OF A SOMEWHAT WORN BEACH SPECIMEN COLLECTED AT SAN LUIS PASS SHOWS CLEARLY THE DIFFERENCES IN SCULPTURE BETWEEN O. DIANTHOPHILA AND OTHER SPECIES OF ODOSTOMIA IN TEXAS. IT BELONGS IN VIEW OF SHAPE AND SCULPTURE IN THE MENESTHO GROUP OF ODOSTOMIAS AND IS BEST PLACED IN THE GENUS FARGOA OF BARTSCH.

IN THE PAST UNDOUBTEDLY THE SPECIES HAS BEEN CONFUSED WITH SMALL SPECIMENS OF O. SEMINUDA, BUT THESE ARE QUITE DIFFERENT IN MANY RESPECTS. ESPECIALLY THE STRUCTURE OF THE NUCLEUS IS IN O. DIANTHOPHILA QUITE DIFFERENT FROM THAT OF O. SEMINUDA.

THE DISTRIBUTION OF THE ANIMAL INDICATES THAT IT IS A CAROLINIAN SPECIES. ABOUT ITS MODE OF LIFE LITTLE IS KNOWN. IT HAS BEEN COLLECTED ALIVE ON LIVING OYSTER-SHELLS IN CHRISTMAS BAY NEAR FREEPORT AND IN THE BAYS AROUND PORT ARANSAS, SO THAT PRESUMABLY IT PARASITIZES OTHER MOLLUSCS. THE SPECIES HAS BEEN REPORTED BEFORE IN THE TEXAS CONCHOLOGIST.

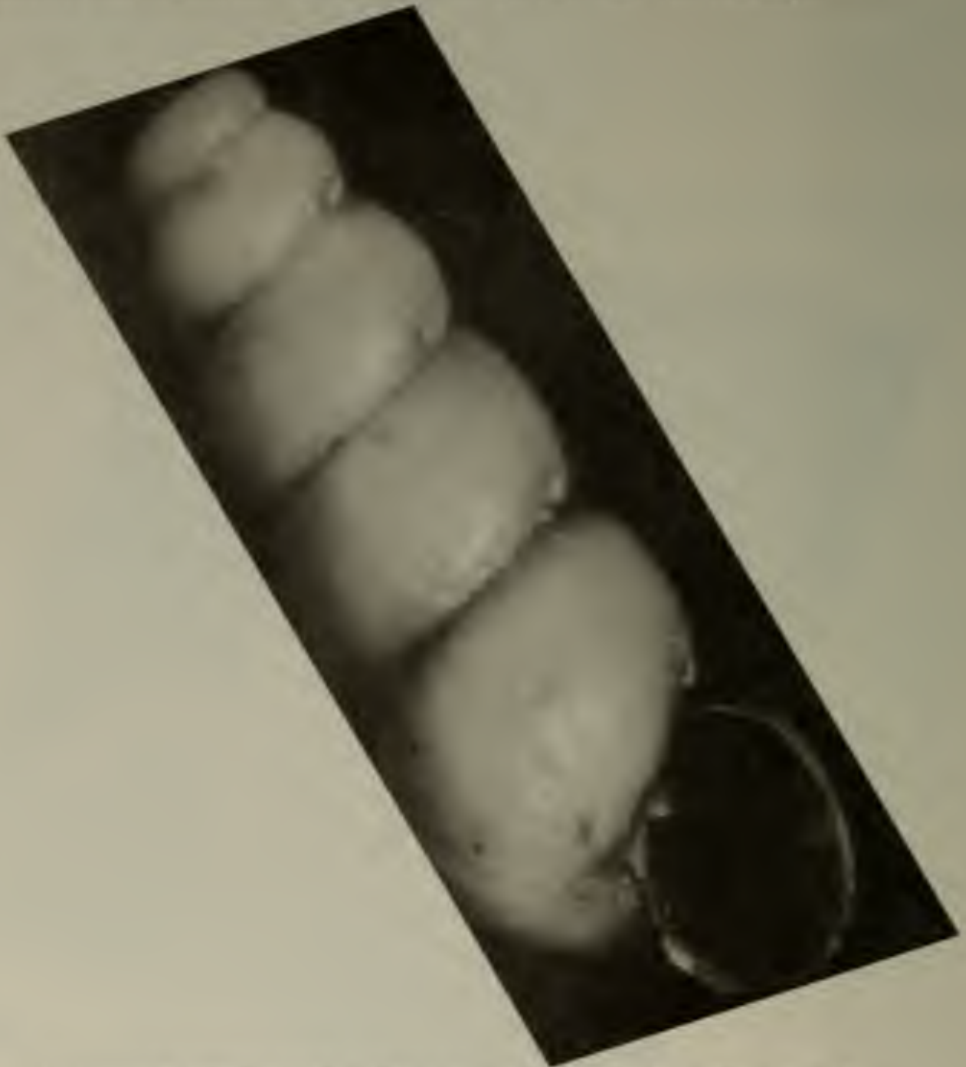
SOURCES: 1961. ODOSTOMIA DIANTHOPHILA WELLS AND WELLS, NAUTILUS, VOL. 74, (4), P. 149-157.



ODOSTOMIA DIANTHOPHILA, COLLECTED FROM BEACHDRIFT AT SAN LUIS PASS.  
SIZE: 1.71 MM. PHOTOGRAPH BY F. VAN MORKHOVEN.

THIS VERY SMALL SPECIES IS APPARENTLY WIDESPREAD ALONG THE TEXAS COAST. SELDOM FOUND IN BEACHDRIFT ALONG THE OUTER BEACHES, IT IS NOT UNUSUAL IN DRIFT ALONG THE INLETS AND RECENTLY WAS DREDGED IN CONSIDERABLE NUMBERS IN THE CHANNELS OF CHRISTMAS BAY. MRS. CONNIE BOONE HAS COLLECTED LIVE SPECIMENS CRAWLING ON THE MUDFLATS NEAR PORT ARANSAS.

THE SYSTEMATIC POSITION OF THE GENUS HENRYA IS IN MY OPINION UNSETTLED. BARTSCH PLACED IT IN THE FAMILY ACLIDIDAE, BUT THIS POSITION SEEMS, IN VIEW OF MANY STRUCTURAL DETAILS EXHIBITED BY THESE SHELLS, HIGHLY DOUBTFUL. AT A FIRST GLANCE THE SMALL SHELLS OF HENRYA APPEAR EXTREMELY CLOSE TO JUVENILES OF TRUNCATELLA AND I WOULD SUGGEST THAT THE GENUS SHOULD BE PLACED CLOSE TO THAT GENUS. THE THREE SPECIES SO FAR KNOWN, HAVE ALL BEEN COLLECTED IN COASTAL ENVIRONMENTS: FLORIDA, YUCATAN AND THE BAHAMAS. FROM A STUDY OF THE ORIGINAL PAPER BY BARTSCH IT IS NOT QUITE CLEAR WHAT THE DIFFERENCE BETWEEN THE THREE DESCRIBED SPECIES: H. GOLDMANI, H. MORRISONI AND H. HENRYI ARE. IN THE TEXAS MATERIAL WHICH I HAVE SEEN, ALL THREE FORMS SEEM TO OCCUR, SO THAT IT SEEMS POSSIBLE THAT ONLY A SINGLE SOMEWHAT VARIABLE SPECIES IS INVOLVED LIVING ON MOST OF THE COASTLINE OF THE GULF OF MEXICO AND THE BAHAMAS.



H. GOLDMANI FROM BEACHDRIFT COLLECTED AT SAN LUIS PASS.

SIZE: 1.40 MM. PHOTOGRAPH BY MR. F. VAN MORKHOVEN.



HENRYA SPEC INDET. FROM BEACHDRIFT COLLECTED AT SAN LUIS PASS.  
SIZE: 1.65 MM. PHOTOGRAPH TAKEN BY MR. F. VAN MORKHOVEN.

THE FIGURE SHOWS A BEACH SPECIMEN FROM SAN LUIS PASS, GALVESTON ISLAND, 1.40 MM. IN LENGTH. THE NUCLEUS IS VERY MUCH THE SAME IN STRUCTURE AS THAT OF TRUNCATELLA AND AT LEAST A RELATIONSHIP WITH THE PYRAMIDELLIDS APPEARS EXCLUDED.

IN TEXAS ANOTHER, APPARENTLY UNDESCRIBED FORM, HEAVILY RIBBED, HAS BEEN FOUND, WHICH IS CONSPICUOUSLY DIFFERENT IN SHAPE. UNTIL RECENTLY ONLY A FEW BEACHWORN SPECIMENS FROM SAN LUIS PASS, GALVESTON ISLAND, HAD BEEN COLLECTED, BUT A FEW WEEKS AGO SEVERAL FRESHER SPECIMENS WERE DREDGED CLOSE TO THE ENTRANCE OF CHRISTMAS BAY. A FIGURE OF A SOMEWHAT WORN AND DAMAGED BEACH SPECIMEN IS SHOWN IN THE PHOTOGRAPH, TAKEN BY MR. F. VAN MORKHOVEN.

BOTH SPECIES HAVE BEEN REPORTED FOR TEXAS IN THE TEXAS CONCHOLOGIST: VOL. 6 (4), P. 34, 35.

SOURCES: 1947. BARTSCH, P., SMITH. MISC. COLL., VOL. 106, (20), P. 13, 14, PL. 3, FIGS. 1, 2, 3. (ALL THREE SPECIES).

CONTINUED FROM PAGE 81 . . . .

FORM COLOR AND ABOUT 1 CM. IN LENGTH WHEN CRAWLING , WITH LONG PAPILLAE ON ITS BACK. THE SECOND ONE IS ABOUT AN INCH IN LENGTH WHEN CRAWLING. ITS BODY HAS A SOFT PINK COLOR AND IS COVERED BY DENSE AND LONG PĀPILLAE OF MUCH DARKER COLOR. BOTH THESE SPECIES GIVE ME THE IMPRESSION TO BELONG SOMEWHERE IN THE SUPER-FAMILY AEOLIDIACEA. THE THIRD SPECIES , OVER AN INCH IN LENGTH , IS A MUCH SMOOTHER ANIMAL OF YELLOWISH BROWN COLOR WITH DARKER SPOTS. AT A GUESS THIS MIGHT BE DISCODORIS HEDGPETHI MARCUS AND MARCUS 1959, BECAUSE THE ANIMAL RESEMBLES SOMEWHAT THE FIGURE OF A RELATED SPECIES. SINCE ALL 3 ANIMALS WERE DEAD WHEN I VIEWED THEM , BUT STILL IN GOOD CONDITION , THEY WERE PRESERVED FOR FUTURE REFERENCE.

\* \* \* \* \*

#### REPORT MARCH MEETING

MINUTES OF PREVIOUS MEETING WERE READ AND APPROVED AS READ.

MRS. VAN ERP GAVE THE TREASURER'S REPORT. OUR BANK BALANCE WAS \$1,413.01.

LLOYD MEISTER DISCUSSED THE SHELL FAIR PLANS. HE REPORTED THAT MEMBERS SHOULD CONTACT HIM ABOUT DISPLAY SPACE NEEDS AS SOON AS POSSIBLE. DISPLAYS WILL BE SET UP WEDNESDAY EVENING MAY 5TH , WITH THE FAIR TO RUN THROUGH THURSDAY , FRIDAY AND SATURDAY.

MRS. MIRON ASKED MEMBERS TO TURN IN THE SHELLS THEY ARE GIVING FOR PACKAGE SHELL SALES. THEY NEED TIME FOR PACKAGING AND PRICING.

DR. SUTOW PRESENTED THE CLUB WITH 2 BEAUTIFUL TIGER COWRIES THAT WERE DONATED BY MR. E. R. CROSS OF THE HAWAIIAN MALACOLOGICAL SOCIETY. THESE LOVELY SHELLS ARE TO BE AUCTIONED TO MEMBERS IN APRIL MEETING. WE ARE SENDING A LETTER OF THANKS TO MR. E. R. CROSS. OUR MEMBERS WERE IMPRESSED WITH THESE SHELLS.

DR. ODÉ REPORTED A JOINT OUTING WITH THE HOUSTON UNDERWATER SOCIETY AT HIGH ISLAND , SUNDAY , MARCH 28. HE URGED US ALL TO COLLECT SHELLS FOR THE SHELL FAIR AT THIS AND ALL OTHER OPPORTUNITIES.

MR. MIRON DISCUSSED WITH OTHER MEMBERS THE POSSIBILITY OF RAISING SUBSCRIPTION PRICE TO THE TEXAS CONCHOLOGIST. "NOT NOW!" , THEY SAID.

CONNIE BOONE INTRODUCED WAYNE AND AUDREY HOLIMAN OF EDINBURG , WHO SHOWED SLIDES AND FILMS OF THEIR SHELLING EXPEDITION TRIP TO MEXICO AND BAJA , CALIFORNIA. EXCELLENT PICTURES AND INTERESTING COMMENTARY , ESPECIALLY OF LIVE SPECIMEN SHELLS AND WATER BIRDS.

THE MEMBERS ENJOYED THE EVENING VERY MUCH. OUR THANKS TO MR. AND MRS. HOLIMAN.

# CONCHOLOGIST

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VOLUME VII, NUMBER 9

MAY 31 1989

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## NOTES & NEWS

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MAY 26 MEETING ON AUSTRALIAN COLLECTING

MISS JANEVA PORTER OF THE GALVESTON SHELL CLUB WILL PRESENT A PROGRAM ON A RECENT TRIP TO COLLECT SHELLS ON CORAL REEFS AND ISLANDS IN THE PACIFIC AT THE MAY 26 MEETING TO BE HELD AT 8 P.M. AT THE HOUSTON MUSEUM OF NATURAL SCIENCE.

LAST FALL MISS PORTER AND HER MOTHER TRAVELLED TO AUSTRALIA, NEW ZEALAND AND FIJI. SHE WAS ABLE TO CATCH A REALLY LOW TIDE ON A FABULOUS CORAL REEF. SHE HAS PROMISED TO BRING SHELLS AND SLIDES TO SHOW, AND THE PROGRAM WILL BE INFORMATIVE AND DIFFERENT FOR OUR MEMBERS. SO PLAN TO ATTEND AND BRING YOUR FRIENDS.

REPORT APRIL MEETING

BY FRITZ LANG

MEETING WAS CALLED TO ORDER AT 8:00 P.M. BY DR. HELMER ODÉ, CHAIRMAN.

MRS. VAN ERP GABE TREASURER'S REPORT. OUR BANK BALANCE WAS \$1,220.72.

MR. LLOYD MEISTER REPORTED ON THE SHELL FAIR AND MRS. MIRON CALLED FOR HELP IN PACKAGING AND SELLING OF MATERIAL IN THE SHELL STORE.

FERN HEINKE REPORTED ON SHELL CRAFT AND INVITATIONS.

CHAIRMAN ODÉ APPOINTED MR. DEXTER AND MR. EDSTROM AS ELECTION COMMITTEE TO COUNT VOTES.

THE TWO TIGER COWRIES WERE AUCTIONED BY FAY DRYDEN.

DR. SUTOW REPORTED THE SANTA BARBARA SHELL SHOW TO BE ON JULY 31 AND AUGUST 1. "WE ARE ALL INVITED," HE SAID. (EDITOR: FURTHER INFORMATION CAN BE OBTAINED FROM DR. W. SUTOW.)

CONNIE BOONE AWARDED THE SHELLS TO THE LUCKY NUMBERS IN THE DRAWING.

CONNIE BOONE INTRODUCED MRS. C. CAMDEN ERNEST OF SAN ANTONIO WITH HER PROGRAM OF THE EVENING. "SHELLING SAFARI TO AFRICA."

MRS. ERNEST GAVE A VERY LIVELY AND INTERESTING TALK ON HER EXPERIENCES AND COLLECTING METHODS. THE PEOPLE AND PLACES WERE ALSO VIVIDLY DESCRIBED. OUR THANKS TO MRS. C. CAMDEN ERNEST.

CONTINUED ON PAGE 100.....

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY LUCINIDAE.

LUCINA SOMBRERENSIS DALL, 1886. A SINGLE SPECIMEN OF THIS OFFSHORE COMMON SPECIES WAS TAKEN IN BEACHDRIFT AT SOUTH PADRE ISLAND IN 1965 (COLL. ODÉ). IT WAS PROBABLY RAFTED ASHORE BY WHIPCORAL. SO FAR AS WE KNOW THE SPECIES HAS NEVER BEFORE BEEN REPORTED FROM THE BEACH.

FIGURED IN: 1

PREVIOUS REFERENCES: ONLY REPORTED FOR OFFSHORE

LOCALITIES: SOUTH PADRE ISLAND

### FAMILY LIMIDAE.

LIMA LOCKLINI MCGINTY, 1955. ELSEWHERE IN THIS ISSUE WE HAVE GIVEN SOME PARTICULARS ABOUT THIS SPECIES, WHICH IS APPARENTLY ONE OF THE SMALLEST LIMAS KNOWN OFFSHORE IT IS NOT TOO UNCOMMON, AND SO FAR AS KNOWN TO US, IT HAS NEVER BEFORE BEEN REPORTED FROM THE BEACH.

FIGURED IN: PROC. ACAD. NAT. SCI., PHILA., P. 84, PL. 2, FIGS. 12, 12A.

PREVIOUS REFERENCES: NONE

LOCALITIES: SARGENT.

### FAMILY VITRINELLIDAE.

AOROTREMA SP. RECENTLY THE MUSEUM OF NATURAL SCIENCE RECEIVED SOME SAMPLES OF DREDGED MATERIAL FROM WEST BAY (COLD PASS). AMONG THE SEVERAL INTERESTING SPECIES NEW TO ME FOR THE IMMEDIATE TEXAS COAST WAS A SINGLE SPECIMEN OF AN AOROTREMA, WHICH SO FAR I CANNOT IDENTIFY. IN DEEPER WATER OFFSHORE THE SAME SPECIES HAS BEEN COLLECTED AT SEVERAL LOCATIONS.

FIGURED IN: NONE AVAILABLE

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON WEST BAY.

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### SHELL SHOW

THE SANTA BARBARA MALACOLOGICAL SOCIETY, INC. WILL HOLD ITS 1971 WEST COAST SHELL SHOW AND AUCTION THIS YEAR ON JULY 30, 31 AND AUGUST 1 IN THE VETERANS MEMORIAL BUILDING IN SANTA BARBARA. MEMBERS OF OTHER SHELL CLUBS ARE INVITED TO COMPETE FOR TWO TROPHY PRIZES. FURTHER INFORMATION CAN BE OBTAINED FROM DR. W. W. SUTOW OF OUR CLUB.



THERE HAS APPEARED A NEW, DIFFERENT, RECOMMENDED PUBLICATION ENTITLED MOLLUSCAN DIGEST (THE INTERNATIONAL PUBLICATION FOR MALACOLOGICAL RESEARCH). ACTUALLY THIS IS NOT A DIGEST BUT RATHER A BIBLIOGRAPHIC INDEX OF TITLES OF CURRENT ARTICLES RELATED TO MALACOLOGY. THE REFERENCES ARE LISTED BY AUTHORS (FIRST AUTHORS) IN ALPHABETICAL ORDER.

THE PUBLICATION APPEARS MONTHLY (FIRST ISSUED JANUARY 1, 1971) AND THE SUBSCRIPTION PRICE IS \$4.00 PER YEAR. THE EDITORS ARE STEVEN J. LONG AND JACK BROOKSHIRE. (MR. LONG'S ADDRESS IS: 110 CUYAMA AVE., PISMO BEACH, CALIFORNIA, 93449).

\* \* \* \* \*

THE RECENT AUCTION OF CYPRAEA TIGRIS SCHILDERIANA BRINGS TO MIND THE OFTEN PONDERED QUESTION ABOUT THE LARGEST COWRIES IN THE WORLD. VAN NOSTRAND'S CATALOG (2ND EDITION) LISTS A CYPRAEA CERVUS 15.3 CM (6 1/8 INCHES) LONG, A CYPRAEA TESTUDINARIA 13.3 CM (5 1/4 INCHES), AND, A CYPRAEA TIGRIS (HAWAII) 14.7 CM (5 13/16 INCHES). R. TUCKER ABBOTT ("GIANT COWRIES", NAUTILUS, 82:32, JANUARY, 1968) REPORTS THAT HE HAS SEEN THE SHELL OF A LIVE TAKEN CYPRAEA CERVUS THAT MEASURED 17.8 CM IN LENGTH (7 INCHES). DR. ABBOTT BELIEVES THAT THIS IS "PROBABLY THE LARGEST KNOWN SPECIMEN OF ANY LIVING COWRIE." COMMANDER CHRISTIANSEN, SOME YEARS BACK, MENTIONED THAT THERE WAS A FRAGMENT OF CYPRAEA TIGRIS SCHILDERIANA 5 7/8 INCHES (14.9 CM) IN LENGTH AT THE CHILDREN'S MUSEUM IN HONOLULU. BURGESS IN HIS BOOK SPECULATES THAT WHILE CYPRAEA CERVUS MAY BE THE LONGEST COWRIE IN THE WORLD, CYPRAEA TIGRIS SCHILDERIANA MAY EXCEED IT IN VOLUME. IT APPEARS TO BE THE CONSENSUS THAT THE THIRD LARGEST COWRIE IS CYPRAEA TESTUDINARIA WHICH CAN ATTAIN A LENGTH OF 13.0 CM (5 3/16 INCHES.)

\* \* \* \* \*

HOW MANY SPECIES OF MOLLUSKS ARE THERE?

THIS IS THE TITLE OF A SHORT ARTICLE BY DR. KENNETH JAN BROSS (FROM THE MUSEUM OF COMPARATIVE ZOOLOGY, HARVARD UNIVERSITY) WHICH APPEARS IN ANNUAL REPORTS FOR 1970, THE AMERICAN MALACOLOGICAL UNION, INC. (P. 41). "FAUNAL STUDIES, MONOGRAPHIC REVIEWS, NOMENCLATURIAL HANDBOOKS AND CHECKLISTS OF NOMINA" WERE ANALYZED. BY ALLOWING FOR SYNONYMY AND ERRORS AND BY ESTIMATING THE NUMBER OF SPECIES YET TO BE NAMED, DR. BROSS ARRIVES AT THE TOTAL APPROXIMATION OF 47,000 SPECIES. THIS IS SUBDIVIDED AS FOLLOWS: APLACOPHORA, 250; POLYPLACOPHORA, 600; SCAPHOPODA, 350; CEPHALOPODA, 600; MONOPLACOPHORA, 10; BIVALVIA, 7500; GASTROPODA, 37,500. THE LAST IS ADDITIONALLY BROKEN DOWN INTO BASOMMATOPHORA, 1,000; STYLOMMATOPHORA, 15,000; PROSOBRANCHIA, 20,000; AND, OPISTHOBRANCHIA, 1,500.

\* \* \* \* \*

THOSE CLUB MEMBERS WHO ATTENDED THE 34TH ANNUAL MEETING OF AMU WHEN IT WAS HELD IN CORPUS CHRISTI IN 1968 WILL REMEMBER THE SYMPOSIUM ON RARE AND ENDANGERED MOLLUSCAN SPECIES OF NORTH AMERICA. THE PAPERS PRESENTED BY EMINENT MALACOLOGISTS AT THE SYMPOSIUM HAVE BEEN PUBLISHED IN MALACOLOGIA. A REPRINT OF THE SYMPOSIUM PROCEEDINGS CAN NOW BE OBTAINED FOR \$1.15 BY WRITING TO MRS. MARIAN S. HUBBARD, SECRETARY, AMU, 3957 MARLOW COURT, SEAFORD, NEW YORK, 11783.

THIS MEDIUM SIZE WHITE WENTLETRAP IS QUITE COMMON IN BEACHDRIFT ALONG THE TEXAS COAST, WHERE IT IS OFTEN COLLECTED DEAD IN BEACHDRIFT. IT DIFFERS FROM E. ANGULATUM IN MISSING THE HOOKS ON THE EARLY COSTAE, AND IS USUALLY IMMEDIATELY RECOGNIZED BY THE REGULAR PLACEMENT OF THE COSTAE WHICH SLOPE SOMEWHAT OVER THE WHORLS. THE SHELL IS LESS ELONGATE THAN ALL THE OTHER TEXAS WHITE WENTLETRAPS. IT HAS SEVERAL TIMES BEEN COLLECTED ALIVE IN BEACHDRIFT, BUT APPEARS TO BE MISSING IN OFFSHORE DREDGINGS.

THE PHOTOGRAPHS SHOW THREE SHELLS FROM GALVESTON BEACH, 8, 8 AND 6 MM. IN LENGTH, PHOTOGRAPHED BY MR. C. DEXTER. THE ONLY PREVIOUS REFERENCES TO THIS SPECIES ARE IN MASTERS THESIS BY HULINGS AND KENNEDY. FOR FURTHER INFORMATION THE READER MAY CONSULT THE PAPER BY CLENCH IN JOHNSONIA.



EPITONIUM ALBIDUM FROM GALVESTON WEST BEACH



EPITONIUM ALBIDUM FROM GALVESTON WEST BEACH

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SHELLS IN THE CULTURE OF THE AMERICAN INDIAN (CONCLUSION)

BY ANNE SPEERS

#### THE SHELL GORGETS OF THE INDIANS

NUMEROUS INDIAN MOUNDS HAVE YIELDED BITS AND PIECES AND SOME WHOLE SHELL GORGETS. THESE ARE SHAPED PIECES OF SHELL, GENERALLY ABOUT 3" IN DIAMETER, ROUNDED OR OVAL OR OCCASIONALLY 'SOLE' SHAPED, WHICH WERE THOUGHT TO ORIGINALLY SERVE AS SHIELD PIECES FOR THE EXPOSED THROAT OF A WARRIOR. THOUGH THE ORIGIN AND EXACT SIGNIFICANCE OF THESE PIECES IS NOT KNOWN, THEY WERE APPARENTLY HIGHLY PRIZED, AND WERE USED BY MANY DIFFERENT TRIBES, AND WITH THE BEAUTIFULLY CARVED CEREMONIAL CUPS MADE FROM THE BUSYCON, THEY WERE PROBABLY THE MOST ARTISTIC FORM OF SHELL CRAFT FOUND IN PRE-COLUMBIAN INDIAN GRAVES.

THE SIMPLEST EXAMPLES OF SHELL GORGETS WERE PLAIN PIECES OF SHELL, USUALLY WITH A HOLE OR HOLES FOR STRINGING ON A THONG, AND THE EXGES SMOOTHED. THE 'SOLE' SHAPES RESEMBLED THE SOLE OF A MOCCASIN IN SHAPE, AND IT HAS BEEN SUGGESTED THAT THIS MAY HAVE ORIGINATED BECAUSE THIS SHAPE UTILIZED THE LARGEST AREA WHICH COULD BE CARVED FROM A LARGE WHELK, WHICH WOULD STILL BE FLAT ENOUGH TO WEAR OVER THE NECK. AND TO THE PLAINS INDIAN, ANY PIECE OF SHELL WAS VALUED, THE BIGGER THE BETTER. HOWEVER, SOME EXAMPLES OF THIS SHAPE WERE FOUND WHERE THE UPPER PART OF THE 'SOLE' WAS WIDENED, SO THAT THE SHAPE BECAME THAT OF A HUMAN SKULL. ON THESE, CRUDE MASK-LIKE FACES WERE CARVED.

HOWEVER , THE MORE COMMON FORMS WERE CIRCULAR OR OVAL , AND MANY OF THESE WERE BEAUTIFULLY AND INTRICATELY CARVED . THE CARVINGS RANGED FROM SIMPLE ABSTRACT SYMBOLS , TO COMPLEX DESIGNS DEPICTING ALMOST ALL FORMS OF ANIMAL LIFE KNOWN TO THE INDIANS ; FIGURES REPRESENTING MAN ENGAGED IN BOTH DAILY TASKS AND SOLEMN CEREMONY ; OR COMBINATIONS OF ANY OF THESE .

APPARENTLY THESE GORGETS WERE ALSO WORN AS THE CENTERPIECES ON LONG STRANDS OF SHELL BEADS , OR ON LONG THONGS , HANGING AROUND THE NECK , JUST AS OUR NECK-LACES OF TODAY . MUCH RESEARCH HAS BEEN DONE TRYING TO DECIPHER ANY PARTICULAR MEANING THE VARIOUS SYMBOLS AND FIGURES MIGHT HAVE HAD . AS CERTAIN SYMBOLS AND FIGURES WERE FOUND REPEATEDLY , ARCHAEOLOGISTS FELT SUCH REPETITION COULD NOT BE MERE CHANCE . THEREFORE , IT HAS BEEN SUGGESTED THAT THESE CARVED GORGETS MAY HAVE SERVED ONE OR MORE OF SEVERAL FUNCTIONS SUCH AS : 1 . BADGES OF OFFICE WITHIN A TRIBE , OR WITHIN ONE OF THE 'SECRET' SOCIETIES OF WARRIORS . 2 . WORN AS PROTECTIVE AMULETS TO WARD OFF EVIL , OR TO BRING GOOD FORTUNE . 3 . AS A BADGE OF HONOR DENOTING SOME OUTSTANDING ACT OR DEED . 4 . AS A SYMBOL OF RANK OR WEALTH , RECOGNIZED BY ALL TRIBES .

PERHAPS ONE OF THE MORE INTERESTING FACTS CONCERNING THESE CARVINGS WAS THE AMAZING SIMILARITY IN STYLES IN THE ART WORK FOUND IN THE ARTIFACTS TAKEN FROM THE SPIRO MOUNDS IN OKLAHOMA , AND THAT THAT IS FOUND IN THE ARTIFACTS OF THE MAYAN INDIANS OF YUCATAN . THERE IS NO PROOF THAT THERE WAS ANY CONNECTION BETWEEN THESE TWO DISTANT PEOPLES , BUT THE SIMILARITIES LEAD TO MUCH SPECULATION ON THE UNKNOWN HISTORY OF THESE TRIBES .

THOUGH THE FINAL ANSWER TO THE USES OF SOME OF THE SHELL ARTIFACTS FROM THE AMERICAN INDIANS MAY NEVER BE KNOWN , IT IS RATHER FUN FOR THE SHELL COLLECTOR OF TODAY TO REFLECT ON HOW VERY ANCIENT AND WORLD WIDE THE ATTRACTION OF SHELLS HAS BEEN FOR MANKIND . AGAIN AND AGAIN WE FIND SHELLS HAVE BEEN UTILIZED AS ORNAMENTS AND/OR A MEDIUM OF EXCHANGE BY ABORIGINAL PEOPLES THE WORLD OVER . IT IS RATHER AMAZING THE AMOUNT OF KNOWLEDGE THAT CAN BE GLEANED ABOUT A PEOPLE SIMPLY BY EXAMINING THEIR USE OF SHELLS . THIS LEADS TO MUSING ABOUT OUR OWN CULTURE , AND WHAT SOME STUDENT OF THE FUTURE MIGHT DEDUCE ABOUT US FROM THE SHELLS WE LEAVE BEHIND .

WILL THE MOUNDS OF SHELL USED BY INDUSTRY FOR HIGHWAYS AND BUILDING MATERIALS , SPEAK OF OUR MACHINE AGE ? WILL THEY SEE EVIDENCE OF EFFICIENCY AND/OR WASTE IN OUR HARVESTING AND PROCESSING OF FOOD FROM THE SEA ? WILL THEY SEE IN THE EXTENSIVE MUSEUM COLLECTIONS , EVIDENCE OF TREMENDOUS TRADING AND COMMUNICATION SYSTEMS ? AND WILL THEY NOTE OUR PREOCCUPATION WITH EVOLVING LIFE , AND OUR EFFORTS TO SYSTEMATICALLY RELATE LIFE FORMS ? WILL THE SHELL-ART REFLECT OUR WIDE RANGE OF ARTISTIC CONCEPTS , AND PERHAPS ATTEST TO OUR ENJOYMENT OF A BIT OF HUMOR IN OUR LIFE ? AND WILL THE PRESENCE OF SHELL COLLECTIONS IN INDIVIDUAL HOMES TELL OF A PEOPLE INTERESTED IN THE NATURAL WORLD AROUND THEM , AND THE LEISURE TO ENJOY IT ?

THE FOLLOWING ARE THE SOURCES FOR THE INFORMATION ON THE INDIANS AND THEIR USE OF SHELLS , USED IN THIS SERIES OF PIECES APPEARING IN THE CONCHOLOGIST :

- 1 . PUBLICATIONS OF THE BUREAU OF ETHNOLOGY No. 2. 1880-81
- 2 . ANTIQUITIES OF THE SOUTHERN INDIANS , BY C. C. JONES. 1873
- 3 . BULLETIN 30 , BUREAU OF AMERICAN ETHNOLOGY: HANDBOOK OF AMERICAN INDIANS. 1912.
- 4 . "THE AMERICAN INDIAN" , CLARK WISSLER. 1922.

5. "THE ARTIFACTS OF THE PECOS", FROM PAPERS OF THE SOUTH-WESTERN EXPEDITION, No. 6; ALFRED KIDDER, 1932.
6. "ENGRAVED SHELLS FROM THE CRAIG MOUND AT SPIRO, LEFLORE COUNTY, OKLAHOMA; MIMOIR No. 1, OKLAHOMA ANTHROPOLOGICAL Soc. 1964.
7. CENTRAL STATES ARCHAEOLOGICAL JOURNAL, VOL. 16, No. 3, 1969.

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SEVERAL NEW ADDITIONS TO THE TEXAS BEACH FAUNA.

BY H. ODE

IT IS WELL KNOWN THAT THE MORE EXPERIENCE ONE GAINS IN DISTINGUISHING DIFFERENCES IN SHELL SHAPES, THE LARGER THE CHANCES BECOME OF RECOGNIZING HITHERTO OVERLOOKED SPECIES. UNFORTUNATELY WITH THE ADVANCE OF YEARS THE EYES BECOME LESS SHARP AND THE IMPRESSION IS GAINED THAT THE MIND SEES CLEARER. NOW THAT I HAVE TO WEAR BIFOCALS, WHICH BY THE WAY ARE PARTICULARLY UNSUITED TO BEACHCOLLECTING, MY TRIPS TO THE BEACH HAVE BECOME SHORTER AND LESS FREQUENT, AND ARE REPLACED BY MORE COMFORTABLE INVESTIGATION OF MATERIAL STORED AWAY FROM COLLECTING TRIPS MADE 10 TO 15 YEARS AGO. BEHIND THE MICROSCOPE I CONSOLE MYSELF WITH THE THOUGHT THAT INDEED THE MIND SEES SHARPER EVERY TIME I FIND ERRONEOUS IDENTIFICATIONS IN MY OWN MATERIAL.

IT IS WITH SEVERAL OF SUCH CORRECTIONS THAT THIS SHORT NOTE DEALS. THE OTHER DAY, WHILE PREPARING SOME MATERIAL FOR THE MUSEUM OF NATURAL SCIENCE, I MADE THE INTERESTING DISCOVERY THAT SOME UNUSUALLY LARGE "DIPLODONTA SEMIASPERAS" FROM SAN LUIS PASS WERE IN REALITY DIPLODONTA TURGIDA VERRIL AND SMITH, A RATHER COMMON OFFSHORE SPECIES, OCCASIONALLY DREDGED ALIVE. ALTHOUGH A SURPRISE, THIS DISCOVERY WAS NOT TOTALLY UNEXPECTED, BECAUSE ABOUT TWO YEARS AGO A POPULATION OF LIVE SHELLS WAS DISCOVERED BY MEMBER OF OUR SOCIETY ON A BEACH NEAR PORT O'CONNOR. THIS FIND INDICATES THAT ON OCCASION THIS SPECIES VENTURES CLOSE TO THE BEACH.

THE SECOND DISCOVERY WAS THE PRESENCE OF A CONSIDERABLE NUMBER OF TELLINA SYBARITICA IN TWO LOTS OF TELLINS COLLECTED AT THE COAST GUARD STATION AND ON THE BEACH AT SOUTH PADRE ISLAND. THE LATTER LOT WAS RAFTED ASHORE ON A LARGE MASS OF WHIPCORAL, ABOUT WHICH I ONCE REPORTED: THE OTHER LOT CAME FROM BEACH-DRIFT.

THESE TWO DISCOVERIES WERE ONLY AN INTRODUCTION TO THE REAL SHOCKER. TWO LOTS, THE ONLY ONES I EVER COLLECTED OF THE GENUS LIMA ON THE BEACH, BOTH MANY YEARS AGO AT SARGENT, PROVE THAT ONE CANNOT TAKE ANYTHING FOR GRANTED. EACH LOT CONSISTED OUT OF A SINGLE SHELL, FOUND AT DIFFERENT DATES IN THE TIDELINE. ONE OF THESE LOTS HAS BEEN REPORTED BEFORE IN THIS COLUMN "NOTES ON TEXAS BEACH SHELLS" AND IS FORMED BY A SINGLE RATHER WORN AND DEFECTIVE SPECIMEN OF A LIMA WHICH MRS. A. SPEERS AND I DESIGNATED AS LIMA PELLUCIDA. THIS SPECIES IS NOT TOO UNCOMMON ON THE OFFSHORE SHELF, BUT IN VIEW OF THE FACT THAT THERE APPEAR TO BE TWO RATHER SIMILAR BUT EASILY SEPARABLE FORMS WHICH SEEM SPECIFICALLY DISTINCT OUR DESIGNATION MUST BE CONSIDERED UNCERTAIN AND FURTHER STUDY AND COMPARISON WITH MUSEUM MATERIAL IS REQUIRED. THE SAME SHELL HAS BEEN FOUND AT PORT ARANSAS AND FURTHER SOUTH (TEX. CONCH. VOL. 2 (1)).

THE OTHER SPECIMEN FROM SARGENT I HAD CONSIDERED AS A JUVENILE SPECIMEN OF THE SAME SPECIES, AND FORGOTTEN EVEN ITS EXISTENCE IN MY COLLECTION. IN THE MEANTIME A NUMBER OF SPECIMENS OF A VERY SMALL LIMA SPECIES WERE DISCOVERED IN DREDGING

OFFSHORE GALVESTON, WHERE IT IS SURPRISINGLY COMMON. THE COLLECTION OF THE MUSEUM OF NATURAL SCIENCE IN HOUSTON POSSESSES ONLY A SMALL NUMBER OF UNBROKEN SPECIMENS, BECAUSE THIS APPARENTLY VERY FRAGILE SHELL BREAKS EASILY DURING THE DREDGING OPERATION, SO THAT OFTEN ONLY FRAGMENTS ARE HAULED UP. FORTUNATELY ITS PRODISSOCOCH IS QUITE CHARACTERISTIC AND ALSO ITS PECULIAR SKEW OUTLINE WHICH IS OFTEN PRESERVED IN FRAGMENTS FORMED BY THE HINGEPLATE PLUS UMBO. THE SPECIES WAS ORIGINALLY DESCRIBED FROM THE NORTH-EAST GULF OF MEXICO, BUT LIVES AT LEAST ALONG THE ENTIRE NORTHERN GULF SHORE, MAINLY IN MUDDY HABITATS. THE SMALL SPECIMEN FROM SARGENT PROVED TO BE NO LESS THAN A SURPRISINGLY WELL PRESERVED SPECIMEN OF LIMA LOCKLINI MCGINTY 1955, THE NAME OF THIS SMALL SHELL.

TO CLINCH MATTERS CAME THE NO LESS STUNNING DISCOVERY OF A SINGLE SOMEWHAT BLEACHED VALVE OF TELLINA PROBRINA BOSS COLLECTED AS LONG AGO AS 1957 FROM DRIFT AT SAN LUIS PASS. THE SPECIMEN WAS CONTAINED IN A LOT OF TELLINA VERSICOLOR, A SPECIES NOT UNCOMMON IN DRIFT AT THAT LOCATION AND REMAINED UNRECOGNIZED BECAUSE MOST OF ITS COLOR WAS GONE. IT IS REMARKABLE THAT IN ALL SUBSEQUENT YEARS NOT A SINGLE OTHER SPECIMEN WAS COLLECTED BY ME OR ANYBODY ELSE. THE POSSIBILITY OF THE SPECIMEN BEING A FOSSIL CANNOT BE EXCLUDED. TELLINA PROBRINA USUALLY LIVES TOGETHER WITH T. VERSICOLOR IN MUDDY OR SHELLY SAND AND IS WIDESPREAD OVER THE TEXAS SHELF. THUS IT APPEARS POSSIBLE THAT ONCE IN A WHILE POPULATIONS OF THIS SPECIES ESTABLISH THEMSELVES CLOSE TO THE INLETS OR BEACHES AND THEN REACH THE SHORELINE.

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.....CONTINUED FROM PAGE 93

DR. ODE READ THE ELECTION RESULTS. THE NEW SLATE OF OFFICERS ARE:

PRESIDENT: LLOYD MEISTER  
VICE-PRESIDENT: MRS. LAWRENCE N. DEXTER  
PROGRAM CHAIRMAN:  
TREASURER: MR. PAUL HUDSON  
VICE PRESIDENT: MR. DOUGLAS W. REYNOLDS  
FIELD TRIP CHAIRMAN:  
SECRETARY: FRITZ LANG  
BOARD OF DIRECTORS: MRS. FRED SPEERS  
DR. W. W. SUTOW  
MRS. D. A. DASHIELL  
MRS. HOLLIS Q. BOONE  
MR. JOHN EDSTROM

#### REPORT SHARPSTOWN SHELL FAIR

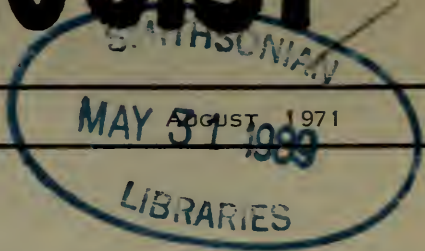
ALTHOUGH THIS YEAR OUR SHOW WAS NOT AS VARIED AND COLORFUL AS THE PREVIOUS ONE, ALL MEMBERS WHO PARTICIPATED IN IT CAN LOOK BACK ON A SUCCESSFUL EFFORT. APART FROM A NUMBER OF NEW EXHIBITS - A MICROSCOPE TO VIEW BEACHDRIFT PROVED IMMENSELY SUCCESSFUL - A NUMBER OF BEAUTIFUL AQUARIA SHOWN BY THE HOUSTON AQUARIUM CLUB CONTRIBUTED MUCH TO THE SUCCESS OF THE FAIR. THE SHELLCRAFT SHOP AND THE SHELL SHOP DREW MANY BUYERS INSURING PUBLICATION OF THE TEXAS CONCHOLOGIST FOR SOME TIME TO COME. THANKS ARE DUE TO LLOYD MEISTER WHO SPENT MANY HOURS TO MAKE THE SHOW A REALITY, TO MR. AND MRS. SAM MIRON WHO PACKAGED SHELL SPECIMENS AND FOR MANY DAYS MANNED THE STORE, AND TO ALL OUR EXHIBITORS.

V. Mollusks

Texas

# CONCHOLOGIST

VOLUME VIII, NUMBER 1



## NOTES & NEWS

### NEXT MEETING

OUR NEXT MEETING WILL BE HELD ON WEDNESDAY, AUGUST 25TH, AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCE IN HERMANN PARK. FRED WILSON WILL TELL ABOUT HIS EXPERIENCES WHILE SHELLING ON THE FLORIDA KEYS, ON SANIBEL ISLAND AND THE ANNA MARIE ISLANDS. HIS TALK WILL BE ILLUSTRATED WITH SLIDES AND POSTERS. THE SPEAKER WILL PROVIDE DOORPRIZES.

REPORT MAY MEETING, 1971. BY FRITZ LANG, SECRETARY  
MEETING WAS CALLED TO ORDER BY PRESIDENT LLOYD MEISTER AT 8:00 P.M. ABOUT 44 MEMBERS WERE PRESENT AND 4 VISITORS WERE WELCOMED.

MRS. VAN ERP GAVE THE TREASURERS REPORT. BOOKS WERE NOT YET CLOSED AFTER THE SHELL FAIR, BUT THE CLUB WAS DEFINITELY SOLVENT.

SAM MIRON REPORTED ON SHELL SALE BOOTH; GROSS RECEIPTS \$393.02, EXPENSES \$13.53. NET \$379.49.

PAUL HUDSON REPORTED \$270.20 FROM SHELL CRAFT SALES.

MR. EDSTROM REPORTED ON THE FINANCIAL STATUS OF PAST AND PRESENT SHELL FAIRS. "THIS WAS SECOND BIGGEST EVER!", HE SAID.

MRS. BOONE SPOKE OF THE BOOKS WE HAVE AT INFORMATION STAND AT THE MUSEUM. SHE SAID, "WE ARE ALL WELCOME TO USE THEM AT ANY TIME."

MR. EDSTROM MADE A MOTION THAT PAST PRESIDENTS BE GIVEN A MUG TO SHOW OUR APPRECIATION, TO BE RETROACTIVE TO JANUARY 1968. SECONDED BY FRITZ LANG.

AFTER DISCUSSION BY MEMBERS ON THE MOTION THE PRESIDENT APPOINTED A COMMITTEE OF THREE TO STUDY THE IDEA. COMMITTEE MEMBERS: FAY DRYDEN, LEOLA GLASS, AND JOHN EDSTROM. MOTION WAS TABLED UNTIL THEY REPORT IN AUGUST 1971.

LLOYD MEISTER CALLED FOR VOLUNTEERS TO WORK ON "PROJECT 24", THE NORTHWEST GULF MOLLUSK POPULATION SURVEY. WORK IS DONE IN A.M. - TUESDAY OR SUNDAYS CALL HAROLD GEIS AT 2405 DICKEY PLACE - PHONE 522-8479.

MRS. BOONE INTRODUCED JANEVA PORTER FROM GALVESTON. SHE GAVE A VERY INTERESTING TALK ON HER SHELLING TRIP TO AUSTRALIA AND THE GREAT BARRIER REEF. SHE SHOWED SOME BEAUTIFUL SLIDES AND BROUGHT WITH HER MANY PRETTY SPECIMEN SHELLS TO SHOW. OUR THANKS TO JANEVA PORTER FOR A FINE EVENING, ENJOYED BY ALL.

CONTINUED ON PAGE 8.....

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### NUDIBRANCHIA.

OCCASIONALLY SMALL NUDIBRANCHS CAN BE COLLECTED AT VARIOUS LOCATIONS ALONG THE TEXAS COAST, BUT THEIR IDENTIFICATION IS IN GENERAL VERY DIFFICULT. IN THIS ISSUE WE WILL LIST A NUMBER OF NUDIBRANCHS WHICH SO FAR HAVE BEEN REPORTED FOR THE TEXAS COAST. THESE ANIMALS ARE FAIRLY RARE IN TEXAS AND ARE NEGLECTED BY SHELLCOLLECTORS. FOR THAT REASON THE NUDIBRANCH FAUNA OF TEXAS IS POORLY KNOWN. THE FOLLOWING SPECIES HAVE BEEN REPORTED.

### FAMILY DORIDIDAE.

DISCODORIS HEDGPETHI MARCUS AND MARCUS, 1959. THIS SPECIES WAS DESCRIBED RECENTLY FROM PORT ARANSAS, TEXAS.

LOCALITIES: PORT ARANSAS.

### FAMILY CORAMBIDAE.

CORAMBELLA BARATARIAE HARRY, 1953. THIS SPECIES HAS BEEN REPORTED FROM PORT ARANSAS, WHERE IT WAS COLLECTED ON SARGASSUM WEED. IT WAS ORIGINALLY DESCRIBED FROM LOUISIANA AND HAS BEEN COLLECTED AT GRAND ISLE, LA.

LOCALITIES: PORT ARANSAS.

### FAMILY SCYLLAEIDAE.

SCYLLAEA PELAGICA LINNE, 1758. THIS IS PROBABLY THE ONLY REGULARLY COLLECTED SEASLUG OF THE TEXAS BEACHES. IT LIVES ON SARGASSUM WEED AND IS LARGE ENOUGH TO BE EASILY OBSERVED, ALTHOUGH IT IS WELL CAMOUFLAGED BY ITS COLOR. IT HAS BEEN COLLECTED ON MOST TEXAS BEACHES.

LOCALITIES: OCCASIONALLY ON SARGASSUM WEED ALONG THE ENTIRE TEXAS COAST.

### FAMILY FAVORINIDAE.

CRATENA KAORUAE MARCUS AND MARCUS, 1957. THIS SPECIES HAS BEEN REPORTED FROM THE PORT ISABEL CHANNEL AND HARBOUR ISLAND NEAR PORT ARANSAS. IT IS ALSO KNOWN FROM GRAND ISLE, LA. THESE DATA INDICATE A WIDESPREAD DISTRIBUTION ALONG THE TEXAS AND LOUISIANA COAST.

LOCALITIES: HARBOUR ISLAND, PORT ISABEL CHANNEL.



FAMILY AEOLIDIDAE.

BERGHIA COERULESCENS LAURILLARD, 1830. TWO SPECIMENS HAVE BEEN REPORTED BY MARCUS AND MARCUS FROM LYDIA ANN CHANNEL AT PORT ARANSAS.  
LOCALITIES: PORT ARANSAS.

CERBERELLA TANNA MARCUS AND MARCUS, 1959. THIS SPECIES WAS DESCRIBED FROM A SINGLE SPECIMEN COLLECTED ON THE SABINE JETTIES.  
LOCALITIES: SABINE JETTIES.

SPURILLA NEAPOLITANA DELLA CHIAJE, 1823. AT TWO OCCASIONS THIS SPECIES WAS COLLECTED AT PORT ARANSAS. LIKE ALMOST ALL TEXAS NUDIBRANCHS IT WAS IDENTIFIED BY MARCUS AND MARCUS.  
LOCALITIES: PORT ARANSAS.

FAMILY GLAUCIDAE.

GLAUCUS MARINUS DUPONT, 1763. THIS SPECIES HAS BEEN RARELY REPORTED FOR THE TEXAS COAST. IT IS PELAGIC AND HAS BEEN FOUND ON THE BEACHES AROUND PORT ARANSAS.  
LOCALITIES: PORT ARANSAS.

APLYSIACEA.

IN THIS SUPERFAMILY ARE CLASSIFIED A NUMBER OF OFTEN RATHER LARGE MOLLUSKS WHICH IN SPITE OF THEIR APPEARANCE ARE NOT TRUE NUDIBRANCHS. THEY POSSESS AN INTERNAL SHELL WHICH IS HORNY AND NOT CHALKY AND WHICH IS BUT RARELY FOUND ON OUR BEACHES AT GALVESTON, BUT OCCASIONALLY ARE COMMON IN THE BAYS AT PORT ARANSAS AND PORT ISABEL.

FAMILY APLYSLIDAE.

APLYSIA DACTYLOMELA RANG. THIS MAY BE THE SAME AS A. PROTEA RANG. THIS SPECIES HAS BEEN SEVERAL TIMES REPORTED FROM PORT ARANSAS, ROCKPORT AND THE SOUTHERN END OF THE LAGUNA MADRE. IT HAS A CIRCULAR COLOR PATTERN. SOMETIMES IN FAIRLY LARGE NUMBERS ALIVE IN THE BAYS.  
LOCALITIES: PORT ARANSAS, PORT ISABEL, ROCKPORT

APLYSIA WILLCOXI HEILPRIN. THIS LARGER SPECIES WITH A DIFFERENT COLORPATTERN HAS BEEN OBTAINED AT PORT ARANSAS AND PORT ISABEL, WHERE IT IS ON OCCASION COMMON IN THE LAGUNA MADRE.  
LOCALITIES: PORT ARANSAS, PORT ISABEL.

APLYSIA MORIO VERRILL. ON THE STRENGTH OF A WORLDWIDE STUDY OF THE GENUS BY EALES WE INCLUDE THIS SPECIES. SHE MENTIONS THIS SPECIES FOR TEXAS.  
LOCALITIES: UNKNOWN.

APLYSIA BRASILIANA RANG, 1828. ACCORDING TO EALES: THIS SPECIES IS IDENTICAL WITH APLYSIA FLORIDENSIS PILSBRY, 1895. IT HAS BEEN REPORTED ON SEVERAL OCCASIONS FROM THE SOUTH TEXAS COAST. IT IS A VERY DARK COLORED SPECIES.  
LOCALITIES: ROCKPORT, PORT ARANSAS.

APLYSIA DONCA MARCUS AND MARCUS, 1959. A SPECIMEN OF 65 MM. OBTAINED FROM A TIDEPOOL ON MUSTANG ISLAND WAS DESCRIBED AS NEW. IT WAS ALIVE AND ITS

IN SEVERAL PREVIOUS ISSUES WE HAVE REPORTED FOR TEXAS A SMALL GASTROPOD WHICH WAS RECENTLY DESCRIBED BY MORRISON FROM MATERIAL COLLECTED IN LOUISIANA. BECAUSE AT PRESENT THE TAXONOMY OF THIS SPECIES APPEARS TO BE UNSETTLED, WE WILL NOT ADD MUCH TO OUR PREVIOUS REMARKS HERE EXCEPT A FEW STATEMENTS ABOUT ITS DISTRIBUTION. THE MAIN PURPOSE OF THIS NOTE IS TO PRESENT A PHOTOGRAPH OF THIS SPECIES SO THAT OUR READERS WILL BE ABLE TO COMPARE IT WITH OTHER PREVIOUSLY FIGURED SPECIES OF HYDROBIIDS.

THIS SPECIES HAS BEEN COLLECTED ALIVE IN GALVESTON BAY AT SEABROOK AND HAS BEEN DREDGED ALIVE AT SEVERAL LOCATIONS. IT IS FURTHER KNOWN FROM BEACHDRIFT AT MATAGORDA, PORT ARANSAS AND SOUTH PADRE ISLAND. THERE IS THUS EVERY INDICATION THAT IT LIVES IN ALL OF THE TEXAS COASTAL BAYS. THE SPECIES BELONGS IN THE FAMILY HYDROBIIDAE AND PERHAPS FOR THE TIME BEING MIGHT BE DESIGNATED AS *HYDROBIA BARRETTI* MORRISON, 1965. THE PHOTOGRAPH OF A SPECIMEN MEASURING 2.96 MM. WAS MADE BY MR. F. VAN MORKHOVEN. IT WAS COLLECTED AT THE HOUSTON YACHT CLUB IN LA PORTE, TEXAS.



THE TITLE OF THE PUBLICATION DID NOT SUGGEST ANYTHING OF INTEREST TO THE SHELL COLLECTOR: "PROGRESS IN NUCLEIC ACID RESEARCH AND MOLECULAR BIOLOGY" (VOLUME 5, 1966). THE ARTICLE I WAS READING THEREIN HAD AN EVEN MORE ESOTERIC HEADING: "INTRODUCTION TO THE BIOCHEMISTRY OF D-ARABINOSYL NUCLEOSIDES: BY DR. S. S. COHEN. MY ATTENTION, HOWEVER, WAS CAUGHT BY THE DELIGHTFUL AND FASCINATING INTRODUCTIONS TO THIS OTHERWISE HEAVY READING. THE SUBJECT MATTER DEALT WITH A CLASS OF ANTICANCER DRUGS.

THESE COMPOUNDS WERE FIRST ISOLATED FROM A CARIBBEAN SPONGE BY W. BERGMANN AND R. J. FEENEY IN 1950. DR. COHEN TOOK TIME (AND SPACE) TO DOCUMENT THE HISTORY OF THIS PARTICULAR SPONGE. APPARENTLY BERGMANN AND COLLEAGUES CAREFULLY STUDIED 16 DIFFERENT SPECIES OF SPONGES FROM THE CARIBBEAN AREA AND ONLY CRYPTOTHETHYA CRYPTA YIELDED THE ARABINONUCLEOSIDES. THE FIRST DESCRIPTION OF THE SPONGE (PUBLISHED IN AMERICAN MUSEUM NOVITATES 1431:20, 1949, BY M. W. DE LAUBENFELS) WAS REPRODUCED.

ONE OF THE SYNTHETIC DERIVATIVES OF THIS GROUP OF CHEMICAL COMPOUNDS IS 1-B-D-ARABINOFURANOSYLCYTOSINE (COMMONLY KNOWN AS CYTOSINE ARABINOSIDE OR ARA-C AND SOLD COMMERCIALY AS "CYTOSAR".) THIS IS ONE OF THE NEWLY DEVELOPED DRUGS USED WIDELY TODAY IN THE TREATMENT OF SEVERAL TYPES OF HUMAN CANCER.

oooOooo

IS ANYONE INTERESTED IN ACQUIRING A FIRST-QUALITY SHELL COLLECTION IN ONE FELL SWOOP? JOE VARNADO OF BEAUMONT IS PUTTING UP FOR SALE HIS ENTIRE COLLECTION. AT ONE TIME JOE WAS A VERY ACTIVE MEMBER OF THE GULF SHELL CLUB. HE HAS WON A NUMBER OF MAJOR PRIZES AT SHELL SHOWS INCLUDING THE ACADEMY TROPHY AND SHELL OF THE SHOW AWARD. JOE HAS SOME NICE RARITIES AND AN EXTENSIVE SELECTION OF GOOD SPECIMENS FROM DREDGED MATERIAL (OFF THE WEST COAST OF FLORIDA). JOE'S ADDRESS IS: 1975 GLASSHOUSE ST., BEAUMONT, TEXAS 77703.

oooOooo

ERNIE LIBBY OF THE SAIPAN SHELL CLUB SENDS ALONG A SUGGESTION. HE THINKS (AND I AGREE) THAT IT WOULD BE MOST INTERESTING TO EXCHANGE BOXES OF SHELLS BETWEEN THEIR CLUB AND OURS. THE IDEA IS TO PUT TOGETHER IN A PACKAGE SPECIMEN QUALITY LOCAL SHELLS (WITH COLLECTION DATA) IN 250 OR 500 QUANTITY LOTS AND EXCHANGE. THESE SHELLS CAN BE SOLD (OR AUCTIONED) AT CLUB MEETINGS OR SHELL FAIRS. IF EACH MEMBER OF THE CLUB DONATES FOUR OR FIVE SPECIMENS OF THE LOCALLY COMMON SHELLS, THE EXCHANGE SHOULD BE VERY EASY TO WORK OUT.

ERNIE HAS ALSO SENT ALONG A TAPE RECORDING OF THE TALK GIVEN TO THE SAIPAN SHELL CLUB BY WALLY GIBBONS. WALLY IS ONE OF THE LUCKY PEOPLE WHO MADE, IN THE SOLOMONS, THE FABULOUS FIND OF THE GLORY-OF-THE-SEA CONES. THE TAPE IS AVAILABLE FOR ANYONE WHO WOULD WANT TO HEAR ABOUT THIS HISTORICAL EVENT.

oooOooo

HAVING RECENTLY RECEIVED DR. J. P. E. MORRISON'S PAPER ON WESTERN ATLANTIC DONAX, PUBLISHED IN THE PROCEEDINGS OF THE BIOLOGICAL SOCIETY OF WASHINGTON (VOL. 83, NO. 48, FEB., 1971), IT WAS GREAT FUN TO GO OUT ONE MORNING AT COCOA BEACH TO THE WIDE ATLANTIC BEACH AND WATCH DR. MORRISON SHOW THE TWO ZONES FOR THE TWO POPULATIONS OF DONAX LIVING THERE. DONAX ROEMERI PROTRACTA CONRAD 1849 WAS FOUND STRANDED IN THE SANDS HIGH UP ON THE BEACH AS THE TIDE WAS LOW. DR. MORRISON WADED OUT BEYOND THE FIRST WAVE ZONE TO THE THREE-FOOT WATER AREA AND SIEVED UP SPECIMENS OF DONAX PARVULA PHILIPPI 1849. THIS SMALLER SPECIES LIVED QUITE SEPARATELY FROM THE LARGER D. ROEMERI PROTRACTA THAT DAY. DR. MORRISON'S PAPER EXPLAINS THE USE OF THE NAMES LISTED HERE. IT ALSO REVIEWS ALL OTHER WESTERN ATLANTIC DONAX. TEXAS BEACHES SEEM TO HAVE THREE SPECIES. THE LARGER ONE WE FIND AT HIGH TIDE LINE IN THE SAND AT LOW TIDE IS PROPERLY CALLED DONAX ROEMERI ROEMERI PHILIPPI 1849, ACCORDING TO DR. MORRISON. THE SMALLER, FATTER ONE WE HAVE PREVIOUSLY CALLED DONAX TEXASIANA PHILIPPI 1847. THE THIRD SPECIES IS ANOTHER SMALL ONE BUT NOT RECOGNIZED AS DIFFERENT UNTIL DR. MORRISON ISOLATED IT AND MADE IT A NEW SPECIES, NAME FOR HIS WIFE, DONAX DOROTHEAE MORRISON 1971. MEMBERS OF THE SHELL CLUB INTERESTED IN STUDYING THE DIFFERENCES IN THE DONAX SPECIES MAY SEE DR. MORRISON'S MONOGRAPH IN OUR LIBRARY, AS HE HAS SENT A COPY FOR OUR USE.

## REVIEW

J. P. E. MORRISON ON THE GENUS DONAX IN THE WESTERN ATLANTIC BY H. ODÉ

IN THE FEBRUARY ISSUE OF THE PROCEEDINGS OF THE BIOLOGICAL SOCIETY OF WASHINGTON, J. P. E. MORRISON HAS PUBLISHED A COMPREHENSIVE ACCOUNT OF THE WESTERN ATLANTIC SPECIES OF DONAX, WHICH SHOULD BE OF INTEREST TO TEXAS SHELL COLLECTORS. THERE ALWAYS HAS BEEN CONSIDERABLE UNCERTAINTY ABOUT THE IDENTITY OF TEXAS DONAX SPECIES AND IN PREVIOUS PUBLICATIONS IT WAS QUITE DIFFICULT OR IMPOSSIBLE TO FIND OUT WHAT SPECIES WAS REFERRED TO. OFTEN ALL TEXAS DONAX WERE LUMPED TOGETHER UNDER THE NAME D. VARIABILIS SAY, A NAME WHICH MORRISON DISCOVERED TO BE PREOCCUPIED.

OF THESE TWO COMMON TEXAS SPECIES THE LARGER AND MORE COLORFUL ONE CARRIES THE NAME DONAX ROEMERI ROEMERI PHILIPPI, WHILE THE NAME OF THE SMALLER AND MORE TUMID ONE HAD BEEN ESTABLISHED AS DONAX TEXASIANA PHILIPPI. IN THE TEX. CONCH., VOL. 3, (2) BOTH SPECIES WERE REPORTED AS DONAX VARIABILIS ROEMERI PHILIPPI AND DONAX TUMIDUS PHILIPPI RESPECTIVELY. IT MAY BE NOTED THAT THE NAME OF THE COMMON FLORIDA SPECIES, WHICH WENT BY THE NAME OF DONAX VARIABILIS SAY, HAS BECOME DONAX ROEMERI PROTRACTA CONRAD. ANOTHER INTERESTING RESULT OF THIS STUDY IS THAT CAREFUL INTERPRETATION OF BIOLOGICAL DATA HAS SHOWN THAT D. FOSSOR SAY IS A VALID SPECIES AND IS NOT, AS HAS BEEN ASSUMED, A COLD WATER FORM OF D. ROEMERI PROTRACTA.

ON THE CAROLINIAN COAST AND THE EASTERN BEACHES OF FLORIDA D. ROEMERI PROTRACTA CAN BE FOUND ADMIXED WITH D. PARVULA PHILIPPI. BOTH THESE SPECIES HAVE BEEN CLEARLY ILLUSTRATED IN THE SEPTEMBER 1970 ISSUE OF SEAFARI. THIS MIXTURE OF TWO SPECIES ON BEACHES IN THE WESTERN ATLANTIC HAS BEEN NOTED IN MANY INSTANCES BY MORRISON. IT APPEARS THAT BOTH SPECIES IN SUCH A PAIR HAVE SLIGHTLY DIFFERENT DEPTH RANGES. IT MAY BE NOTED HERE THAT ON THE TEXAS BEACH OCCAS-

IONALLY MATURE SPECIMENS OF BOTH D. ROEMERI ROEMERI AND DONAX TEXASIANA CAN BE FOUND LIVING TOGETHER IN ABOUT EQUAL PROPORTIONS IN THE INTERTIDAL ZONE ALONG THE BEACH.

TO MAKE THINGS INTERESTING FOR THE TEXAS COLLECTOR A THIRD SPECIES OCCURS ON THE EXTREME EASTERN PART OF THE TEXAS COAST. DONAX DOROTHEAE MORRISON 1971 IS A NEW SPECIES WHICH DIFFERS IN SOME DETAILS FROM D. TEXASIANA AND APPEARS TO REPLACE THIS SPECIES ON THE LOUISIANA COAST.

MORRISON APPARENTLY CONSIDERS THE GENDER OF DONAX TO BE FEMININE, WHICH IT IS NOT (*ὁ σωφῆς* A REED, A FLUTE) AND THUS THE ENDINGS OF SOME OF THE TRIVIAL NAMES SHOULD BE CHANGED TO -US INSTEAD OF -A. GLANCING AT THE VARIOUS SYNONYMIES PRESENTED IN THE PAPER A QUESTION CONCERNING THE TAXON DONAX OBESUS ORBIGNY 1846 ARISES. MORRISON DOES NOT EXPLAIN WHICH SPECIES ORBIGNY HAD IN MIND.

APART FROM THE GULF OF MEXICO SPECIES ALSO THE SPECIES IN THE CARIBBEAN PROVINCE AND OF THE ATLANTIC COAST OF SOUTH AMERICA ARE DISCUSSED. ALL IN ALL MORRISON DESCRIBES AND FIGURES 11 SPECIES OF WHICH 2 ARE NEW. THIS STUDY IS A MOST WELCOME CONTRIBUTION TO OUR UNDERSTANDING OF A DIFFICULT GENUS.

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A HAIKU IS A SEVENTEEN SYLLABLE SENTENCE (IN JAPANESE) MAKING A POEM. MORRIS K. JACOBSON READ SOME OF THESE GEMS SELECTED BY HENRY CHRIST AT A.M.U. SINCE THEY WERE MIMEOGRAPHED AND PRESENTED TO THE MEMBERS ATTENDING, SOME ARE OFFERED HERE FOR YOUR ENJOYMENT.

"THE MUD SNAIL CRAWLS TWO OR THREE FEET---AND THE DAY IS OVER."  
BY GOMEI

"THE AXE BITES INTO THE TREE, BUT THE SNAIL IS CALM AND SERENE."  
BY BAISHITSU

"A SNAIL, ONE HORN SHORT, ONE LONG---WHAT TROUBLES HIM?"  
BY BUSON.

"WHEN DID IT COME HERE CLOSE BY ME, THIS SNAIL?"  
BY ISSA

"CRYSTAL SNAIL, INCHING THROUGH LIFE WITH AN AIR OF CAUTIOUS OPTIMISM."  
BY STEUBEN GLASS

"HEY THERE, MR. SNAIL, GET OUT OF MY WAY, Y'HEAR? DAMMIT, I'LL SLUG YA."  
BY HENRY CHRIST.

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A.M.U. MEETING

DR. ARTHUR S. MERRILL WAS ELECTED PRESIDENT OF THE AMERICAN MALACOLOGICAL UNION AT THE JULY MEETING AT COCOA BEACH, FLORIDA. ELEVEN TEXANS ATTENDED THE MEETING. THE 1972 SESSION WILL BE HELD AT THE GALVEZ HOTEL IN GALVESTON, TEXAS, JULY 10 THROUGH JULY 14. MANY A.M.U. MEMBERS ARE LOOKING FORWARD TO COMING BACK TO TEXAS, SO TEXAS SHELL CLUB MEMBERS SHOULD BE READY TO ASSIST MRS. LAKE FOWLER OF THE GALVESTON SHELL CLUB WITH PLANS TO MAKE THIS MEETING AS MEMORABLE AS THE ONE AT CORPUS IN 1968.

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DR. DAVID H. STANSBERY PRESIDED OVER THE THIRTY-SEVENTH ANNUAL MEETING OF A.M.U. AT COCOA BEACH IN JULY. PAPERS RANGED FROM THE USE OF DECORATIVE IMAGES OF SHELLS ON AMERICAN FURNITURE TO MOLLUSCAN AQUACULTURE AND TO THE FABULOUS USE OF CINEMICROSCOPY IN LIFE HISTORY STUDIES. DR. HAROLD D. MURRAY OF TRINITY UNIVERSITY OF SAN ANTONIO, TEXAS, REPORTED ON THE FRESHWATER MUSSELS OF LAKE L.B.J. WHICH WAS DRAINED IN SEPTEMBER 1970, MAKING IT POSSIBLE TO REVIEW THE UNIONIDS IN THIS LAKE, THE FIRST STUDY OF THE AREA SINCE 1935. ELEVEN SPECIES OF THE FAMILY UNIONIDAE AND ONE SPECIES OF THE FAMILY CORBICULIDAE WERE COLLECTED. W. LLOYD PRATT OF THE FORT WORTH MUSEUM OF SCIENCE AND HISTORY PRESENTED A DISCUSSION AND SLIDES OF LAND SNAILS OF THE CHISOS MOUNTAINS, BIG BEND NATIONAL PARK.

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.....CONTINUED FROM PAGE 3

COLOR WAS GIVEN AS "SMOKY BLACK".

LOCALITIES: MUSTANG ISLAND.

BURSATELLA PLEI RANG, 1828. THIS IS A SLUG WITH NUMEROUS RAGGED FILAMENTS, FROM WHICH IT DERIVES THE NAME "RAGGED SEAHARE". IT HAS ON OCCASION BEEN COLLECTED ALIVE ALONG THE SOUTHERN TEXAS COAST, MOSTLY AROUND PORT ARANSAS AND PORT ISABEL.

LOCALITIES: PORT ARANSAS AND PORT ISABEL.

FAMILY PLEUROBRANCHIDAE.

PLEUROBRANCHAEA HEDGPETHI ABBOTT, 1952. THIS SPECIES WAS REPORTED BY MARCUS AND MARCUS FROM THE PORT ISABEL CHANNEL. IT WAS ALSO OBTAINED AT PORT ARANSAS IN SHALLOW WATER OVER MUDDY BOTTOM. WE ARE NOT SURE OF ITS FAMILIAL AGFINITY.

LOCALITIES: PORT ARANSAS, PORT ISABEL.

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# CONCHOLOGIST

VOLUME VIII, No. 2

SMITHSONIAN

SEPTEMBER 197

MAY 31 1989

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## NOTES & NEWS

REPORT AUGUST MEETING

BY FRITZ LANG, SECRETARY

MEETING WAS CALLED TO ORDER ABOUT 8:15 P.M. BY PRESIDENT LLOYD MEISTER, WITH ABOUT 28 PERSONS PRESENT. MINUTES OF PREVIOUS MEETING WERE READ AND APPROVED.

PAUL HUDSON PRESENTED HIS FINANCIAL REPORT. AFTER TRANSFERS, COLLECTIONS AND BILLS, THERE WAS BALANCE OF \$1,953.26 REMAINING.

JOHN EDSTROM REPORTED FOR THE PEWTER MUG COMMITTEE. THE COMMITTEE HAD PURCHASED THE PEWTER MUGS FOR PAST PRESIDENTS. MOTION WAS MADE BY SAM MIRON, SECONDED BY FRED WILSON TO ACCEPT COMMITTEE ACTION. MOTION CARRIED.

DR. HELMER ODÉ SUGGESTED THAT THE SHELL CLUB MEMBERS CONTRIBUTE ITEMS TO BE PUBLISHED IN THE TEXAS CONCHOLOGIST. MRS. CONNIE BOONE VOLUNTEERED TO HELP CONTRIBUTORS COMPOSE AND PUBLISH THEIR MATERIAL. CALL HER AT 668-8252.

CONNIE BOONE INTRODUCED MR. AND MRS. JAMES F. BENDER FROM PORT ARTHUR AND MR. AND MRS. ULRICH OF HOUSTON. ALSO VISITING WERE MRS. WILSON, KATY WILLIAMS, AND DOROTHY JOHNSON. THEY WERE WELCOMED BY MEMBERS.

MRS. BOONE MADE A MOTION THAT HOUSTON CONCHOLOGY SOCIETY DONATE \$250.00 TO MUSEUM OF NATURAL SCIENCE TO HELP DEFRAY THE COST OF SHELL DISPLAYS. SAM MIRON SECONDED THE MOTION, AND IT CARRIED.

DR. ODÉ AND OTHERS DISCUSSED THE PUBLICATION OF THE BEACH NOTES, WHICH WILL COST AROUND \$600.00 ABOUT MARCH OF 1972. COPIES ARE TO BE SOLD TO OFFSET PUBLISHING COSTS.

CHARLIE DOH ANNOUNCED THE COMING OF THE THIRD ANNUAL UNDERWATER CLUB SHOW, TO BE HELD ON SEPTEMBER 25.

PRESIDENT LLOYD MEISTER PRESENTED THE PEWTER MUGS TO PAST PRESIDENTS, MR. LAURENCE DEXTER AND DR. HELMER ODÉ, ON BEHALF OF THE CLUB.

MRS. DEXTER PRESENTED FRED WILSON, WHO ENTERTAINED AND INFORMED US ON FLORIDA MARINE LIFE. HE PRESENTED BEAUTIFUL SLIDES OF FLORIDA MOLLUSKS WITH INTERESTING COMMENT. FRED HELD A DRAWING, AND PRESENTED US WITH 15 LOVELY SHELLS AS DOOR PRIZES.

.....CONTINUED ON PAGE 20

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be purchased for 30¢ per copy at this time.

## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### FAMILY CERITHIOPSIDAE

THREE SPECIES OF THIS INTERESTING FAMILY OF SMALL GASTROPODS CAN BE FOUND ON TEXAS BEACHES. MANY MORE SPECIES LIVE IN OFFSHORE WATERS, ESPECIALLY ON THE CORAL REEFS.

CERITHIOPSIS GREENI C. B. ADAMS, 1839. THIS SHELL IS OFTEN FOUND IN BEACH-DRIFT ALL ALONG THE TEXAS COAST. IT LIVES IN MOST OF THE COASTAL BAYS FROM GALVESTON, WHERE IT IS UNUSUAL, TO THE LAGUNA MADRE AT SOUTH PADRE ISLAND. LIVE SHELLS ARE DARK GLOSSY BROWN. IT IS POSSIBLE THAT SOME FOSSIL MATERIAL COLLECTED ALONG THE PORT ARANSAS CAUSEWAY IS DIFFERENT.

FIGURED IN: 1, 4, 5, 6

PREVIOUS REFERENCES: 11, 12, 13, 19

LOCALITIES: LIVING IN THE COASTAL BAYS

CERITHIOPSIS EMERSONI C. B. ADAMS, 1838. THIS SOMEWHAT LARGER SPECIES IS FAR LESS COMMON THAN C. GREENI. DEAD SHELLS HAVE BEEN COLLECTED RARELY AT SAN LUIS PASS, BUT ARE MORE COMMON FARTHER TO THE SOUTHWEST. SOME VERY FRESH MATERIAL HAS BEEN COLLECTED AT PALACIOS (COLL. ODÉ).

FIGURED IN: 1, 3, 4, 5, 6, 7

PREVIOUS REFERENCES: 12, 18, 19

LOCALITIES: GALVESTON, PALACIOS, PORT ARANSAS, SOUTH PADRE ISLAND.

SEILA ADAMSI H. C. LEA, 1845. THIS QUITE CHARACTERISTIC SPECIES IS NOT UNCOMMONLY FOUND ALIVE ON CLUMPS OF OYSTER SHELLS IN THE SOUTH TEXAS BAYS. LIVE MATERIAL IS VERY RARE AT GALVESTON, BUT DEAD SHELLS ARE FAIRLY USUAL IN BEACHDRIFT. COASTAL MATERIAL IS VERY DARK BROWN IN COLOR, BUT OFFSHORE MATERIAL IS VERY MUCH LIGHTER IN COLOR.

FIGURED IN: 1, 3, 4, 5, 6

PREVIOUS REFERENCES: MANY

LOCALITIES: ALONG ENTIRE TEXAS COAST IN BEACHDRIFT; ALIVE IN BAYS.

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THIS COMMON BEACHSHELL HAS NOT OFTEN BEEN FIGURED IN THE LITERATURE USED BY SHELL COLLECTORS. FOR THIS REASON WE PUBLISH HERE A PHOTOGRAPH OF TWO SPECIMENS IN TYPICAL BEACH WORN CONDITION. THEY STILL MUST BE CONSIDERED TO BE OF FAIRLY GOOD QUALITY BECAUSE BOTH SPECIMENS STILL SHOW REMNANTS OF THE TYPICAL GRANULOSE SURFACE SCULPTURE (SIZE 6 1/2 MM.) THE SPECIES WAS DISCUSSED IN THE TEXAS CONCHOLOGIST, VOL. 7, PAGE 11. IT LIVES APPARENTLY IN THE INLET AREAS, WHERE IT HAS BEEN COLLECTED A FEW TIMES ALIVE. OFFSHORE TEXAS IT IS REPLACED BY K. ATROSTYLA DALL.

AS SOURCES ARE MENTIONED HERE:

- 1889 MANGILIA CERINELLA DALL; BLAKE REPORT, PT. 2, P. 112.
- 1955 KURTZIELLA CERINELLA (DALL), PERRY AND SCHWENGEL, MAR. SHELLS W. COAST FLORIDA, P. 185, PL. 38, FIG. 267.

PREVIOUS REFERENCES TO TEXAS ARE SURPRISINGLY FEW:

- 1889 J. A. SINGLEY, TEXAS MOLLUSCA GEOL. SURV. TEX., 4TH ANN. REPT., AUSTIN, TEXAS
- 1893 J. A. SINGLEY, LIST OF MOLLUSCA COLLECTED IN TEXAS IN 1891, BULL. U. S. FISH COMM. FOR 1892, PP 123-125.
- 1934 C. W. JOHNSON, PROC. BOST. SOC. NAT. HIST., VOL. 40(1).
- 1952 T. E. PULLEY, TEX. JOUR. SCI., VOL. 4(2).
- 1960 W. H. RICE, A PRELIMINARY CHECKLIST OF THE MOLLUSCA OF TEXAS. INST. MAR. SCI., UNIV. TEXAS, PORT ARANSAS, TEXAS



WE BEGIN THIS COLUMN WITH A HEAVY HEART.

GEORGE C. MAJOR OF LITTLE ROCK, ARKANSAS, DIED ON AUGUST 19, 1971. HE HAD SPENT A WEEK'S VACATION WITH US IN HOUSTON AND WAS JUST BOARDING THE PLANE FOR HIS RETURN HOME WHEN HE SUFFERED A SUDDEN AND FATAL HEART ATTACK.

GEORGE WAS TRULY AN ARDENT CONCHOLOGIST, SPENDING EVERY MOMENT OF HIS FREE TIME ON SHELLS AND ON HIS SHELL MUSEUM. EVEN DURING HIS LAST WEEK OF LIFE HE HAD MADE SOME EXCITING NEW ACQUISITIONS FOR THE MUSEUM.

GEORGE HAS BEEN A LONG-STANDING AND FIRM SUPPORTER OF THE HOUSTON CONCHOLOGICAL SOCIETY EVEN THOUGH HE LIVED HUNDREDS OF MILES AWAY. ONE OF HIS PROUD POSSESSIONS WAS A COMPLETE FILE OF THE TEXAS CONCHOLOGIST. HE ALWAYS DONATED SUBSTANTIAL NUMBERS OF SHELLS AND SHELLCRAFT FOR SALE AT OUR SHELL FAIRS. IN 1970 HE BROUGHT HIS EXTENSIVE SHELLS ON STAMP COLLECTION WHICH HE SHOWED.

HE LEAVES MARY MAJOR, HIS WIFE AND LOYAL COMPANION IN HIS SHELLING ACTIVITIES AND A SON, GEORGE, JR., ANOTHER CONCHOLOGICAL DEVOTEE. BOTH INTEND TO CARRY ON WITH THE SHELL MUSEUM WHICH WILL STAND AS A TRIBUTE AND A MEMORIAL TO GEORGE'S INTENSE LOVE FOR SHELLS AND SHELL-COLLECTING.

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REFERENCE WAS MADE IN THIS COLUMN RECENTLY ABOUT THE DISCUSSION BY K. J. BOSS CONCERNING THE NUMBER OF LIVING SPECIES OF MOLLUSCA. THIS REPORT HAS NOW BEEN PUBLISHED AS OCCASIONAL PAPERS ON MOLLUSKS No. 40 (3:81-135) DATED MAY 14, 1971. THIS MONOGRAPH ENTITLED "CRITICAL ESTIMATE OF THE NUMBER OF RECENT MOLLUSCA" HAS BEEN ADDED TO OUR LIBRARY.

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ERNIE LIBBY PASSES ON SOME COMMENTS ABOUT CLEANING SHELLS, PARTICULARLY THE LIVE CAUGHT ONES. OUR AMBASSADOR TO THE SOUTH SEAS SAYS THE TECHNIQUE WORKS WELL. THE LIVE SHELLS ARE FROZEN. THE SHELLS ARE THEN THAWED AND REFROZEN. WHEN THAWED ONCE MORE, THE ANIMALS CAN BE FLUSHED OUT WITH A GOOD STREAM OF WATER. THIS METHOD (I THINK) IS THE ONE USED BY PEOPLE IN HAWAII. ERNIE SAYS TO USE CLOROX OR PUREX AT FULL STRENGTH. SOAK THE SHELLS (EVEN FOR HOURS) AND THE CALCAREOUS DEPOSITS CAN BE BRUSHED OFF. ERNIE DOES SUGGEST SILICONE PROTECTION OF SHINY SURFACES IF PROLONGED IMMERSION IS ANTICIPATED.

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JOE VARNADO'S OFFER IS NOW OFF. HE HAS RECONSIDERED AND HAS DECIDED TO HANG ON TO HIS COLLECTION. HE DOES HAVE A NUMBER OF EXTRA SPECIMENS WHICH HE WILL SELL OR TRADE.

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FROM TIME TO TIME REPORTS OF THE CORAL-EATING SEA STARS, ACANTHASTER PLANCHI, APPEAR IN THE SCIENTIFIC LITERATURE. ONE WAS PUBLISHED BY BRANHAM, REED,

.....CONTINUED ON PAGE 20

GASTROCOPTA (ALBINULA) CONTRACTA (SAY)

PUPA CONTRACTA SAY, 1822, JOURN. ACAD. NAT. SCI. PHILA., II, PT. 2, P. 374.

GASTROCOPTA (ALBINULA) CONTRACTA, PILSBRY, 1948, LAND MOLL. N. AMER., II, PT. 2, P. 880, FIGS. 474 (9-12).

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BASTROP, BEXAR, BRAZORIA, BRAZOS, BURLESON, BURNET, CALHOUN, CAMERON, COMAL, CULBERSON, DALLAS, EDWARDS, FAYETTE, FORT BEND, FRIO, GALVESTON, GONZALES, GRAYSON, GUADALUPE, HAMILTON, HARDIN, HARRIS, HAYS, JEFF DAVIS, KENDALL, KERR, LAVACA, LIBERTY, MASON, MATAGORDA, MCLENNAN, MEDINA, MILAM, MONTGOMERY, NUECES, REFUGIO, ROBERTSON, SAN PATRICIO, SAN SABA, TRAVIS, UVALDE, VAL VERDE, VICTORIA, WASHINGTON, ZAPATA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ANDERSON, BROOKS, CLAY, COOKE, ELLIS, HIDALGO, JACKSON, JEFFERSON, KINNEY, LEE, MAVERICK, SOMERVELL, TARRANT, WICHITA, WILLACY, WOOD COUNTIES.

REMARKS: THE ENTIRE DISTRIBUTION OF THIS LITTLE SNAIL IS PECULIAR IN TWO RESPECTS. FIRST IS THE DISTRIBUTION FROM SOUTH DAKOTA TO THE ATLANTIC SEABOARD AND SOUTHWARD THROUGH MEXICO AND CUBA; SECONDLY, ITS ABSENCE FROM THE WEST COAST. ALTHOUGH MINUTE, IT IS ONE OF THE EASIEST OF THE PUPILLIDS TO RECOGNIZE.

IT IS COMMONLY FOUND WITHIN THE HOUSTON CITY LIMITS. THE FEW RECORDS FROM THE TAMAUlipAN PROVINCE ARE BASED ON DRIFT SHELLS ONLY.

GASTROCOPTA (GASTROCOPTA) CRISTATA (PILSBRY AND VANATTA)

PUPA HORDEACEA "GABB", W. G. BINNEY, 1878, BULL.

MUS. COMP. ZOO., IV, P. 205, FIG. 109 (BAD);

NOT PUPA HORDEACEA GABB, 1866.

GASTROCOPTA CRISTATA PILSBRY, 1948, LAND MOLL. N. AMER., II, PT. 2, P. 911, FIG. 493 (6, 8-12).

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BRAZORIA, BRAZOS, BREWSTER, BURLESON, CAMERON, EL PASO, FAYETTE, GALVESTON, JEFF DAVIS, KNOX, MCLENNAN, NUECES, PRESIDIO, REEVES, ROBERTSON, SAN SABA, TERRELL, VAL VERDE COUNTIES. PREVIOUS PUBLISHED RECORDS FROM COMAL, HIDALGO, TAYLOR, UVALDE, WEBB COUNTIES.

REMARKS: G. CRISTATA AND G. PROCERA ARE CLOSELY RELATED AND HAVE OFTEN BEEN CONFUSED. FOR THIS REASON MANY OF THE PUBLISHED TEXAS RECORDS OF CRISTATA CANNOT BE TRUSTED UNTIL THEY ARE VERIFIED WITH THE SPECIMENS. THE DISTRIBUTION HERE GIVEN IS BASED ON TWO SETS OF RECORDS: (A) RECORDS OF SPECIMENS SEEN BY DR. BEQUAERT, (B) RECORDS FROM ADDITIONAL COUNTIES LISTED BY H. A. PILSBRY IN 1900 AND LATER. IN THE TAMAUlipAN PROVINCE IT IS KNOWN FROM DRIFT SHELLS ONLY.

GASTROCOPTA (GASTROCOPTA) PELLUCIDA HORDEACELLA (PILSBRY)

PUPA HORDEACELLA PILSBRY, 1890, PROC. ACAD. NAT. SCI., PHILA., P. 44, PL. I, FIGS. G-K.

GASTROCOPTA PELLUCIDA HORDEACELLA PILSBRY, 1948, LAND MOLL. N. AMER., II, PT. 2, P. 913, FIGS. 494A-E AND 495 (1-27).

DISTRIBUTION: SPECIMENS EXAMINED FROM ARANSAS, AUSTIN, BANDERA, BASTROP, BEXAR, BRAZORIA, BRAZOS, BREWSTER, BURLESON, BURNET, CALHOUN, COMAL, CROCKETT, CULBERSON, DALLAS, EDWARDS, EL PASO, FAYETTE, GALVESTON, GONZALES, GUADALUPE, HAMILTON, HARRIS, HAYS, HIDALGO, JEFF DAVIS, KENEDY, KERR, KIMBLE, LAVACA, LEE, LIVE OAK, MATAGORDA, MCLENNAN, MEDINA, MILAM, MONTGOMERY, NUECES, PECOS, PRESIDIO, REEVES, REFUGIO, ROBERTSON, SAN PATRICIO, SAN SABA, TERRELL, TRAVIS, TYLER, UVALDE, VAL VERDE, VICTORIA, WASHINGTON, ZAPATA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ARCHER, BRISCOE, BROOKS, COLORADO, DALLAM, FORT BEND, FRIO, HOWARD, KENDALL, MAVERICK, OLDHAM, POTTER, RANDALL, SOMERVELL, STONEWALL, TAYLOR, WICHITA, WILLACY COUNTIES.

REMARKS: WITH PROPER COLLECTING, THIS SPECIES SHOULD SHOW ABOUT THE SAME DISTRIBUTION IN TEXAS AS G. CONTRACTA. PILSBRY SAYS THAT IT OCCURS IN TEXAS, "ALMOST ANYWHERE SNAILS LIVE".

IT IS COMMON IN THE HOUSTON CITY AREA.

GASTROCOPTA (GASTROCOPTA) PROCERA (GOULD)

PUPA PROCERA GOULD, 1840, BOSTON M. NAT. HIST., III, PT. 3, P. 401, PL. III, FIG. 12.

GASTROCOPTA (GASTROCOPTA) PROCERA PILSBRY, 1948, LAND MOLL. N. AMER., II, PT. 2, P. 908, FIG. 492 (6).

BIFIDARIA DUPLICATA STERKI, 1912, NAUTILUS, XXV, PT. 10, P. 116, (TYPE LOCALITY: PALUXY CREEK NEAR GLEN ROSE, TEXAS).

BIFIDARIA MACCLUNGI HANNA AND JOHNSTON, 1913, KANSAS UNIV. SCI. BULL., VII, P. 119, PL. XVIII, FIGS. 1-2.

BIFIDARIA RIOGRANDENSIS PILSBRY AND VANATTA, 1900, PROC. ACAD. NAT. SCI. PHIL., P. 596 (TYPE LOCALITY: DRIFT OF RIO GRANDE AT HIDALGO, TEXAS).

GASTROCOPTA PROCERA FORM RIPARIA PILSBRY, 1916, MAN. OF CONCH., 24, P. 65, PL. 12, FIG. 6, (TYPE LOCALITY: GALVESTON, TEXAS).

GASTROCOPTA PROCERA STERKIANA PILSBRY, 1917, MAN. OF CONCH., 24, P. 127 (NEW NAME FOR BIFIDARIA DUPLICATA STERKI, 1912, WITH SAME TYPE LOCALITY.)

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BEXAR, BRAZORIA, BRAZOS, BREWSTER, BROWN, BURLESON, BURNET, CALHOUN, CAMERON, COMAL, CONCHO, CROCKETT, DALLAS, EDWARDS, FAYETTE, GALVESTON, GILLESPIE, GRAYSON, GUADALUPE, HAMILTON, HARRIS, HIDALGO, KARNES, KENDALL, KERR, KIMBLE, LAVACA, LEON, MATAGORDA, MCLENNAN, MEDIAN, MILAM, NUECES, PECOS, PRESIDIO, RANDALL, REEVES, REFUGIO, ROBERTSON, SAN PATRICIO, SAN SABA, SOMERVELL, TERRELL, UVALDE, VAL VERDE, VICTORIA, WASHINGTON, ZAPATA, ZAVALA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ARCHER, BASTROP, BRISCOE, BROOKS, CRANE, CROSBY, DALLAM,

FRIO, GARZA, HAYS, LEE, LUBBOCK, MAVERICK, MEDINA, STONEWALL, TAYLOR, TRAVIS, WEBB COUNTIES.

REMARKS: ACCORDING TO DR. BEQUAERT (PERSONAL COMMUNICATION), B. DUPLICATA, B. MACCULUNGI, B. RIOGRANDENSIS, G. PROCERA FORM RIPARIA, AND G. PROCERA STERKIANA WERE ALL BASED ON INDIVIDUAL VARIANTS OF PROCERA, WHICH CANNOT BE SEPARATED CONSISTENTLY FROM TYPICAL PROCERA. SINCE THESE NAMES HAVE ALL BEEN USED FOR PUBLISHED RECORDS OF TEXAS SPECIMENS, THEY ARE HERE LISTED AS SYNONYMS.

G. PROCERA OCCURS OVER MUCH OF TEXAS WHERE IT IS OFTEN ONE OF THE COMMON SPECIES IN RIVER AND BEACHDRIFT. MOST OF THE GAPS NOW ON THE MAP MAY BE DUE TO INSUFFICIENT COLLECTING; HOWEVER, THE LACK OF RECORD FROM THE AUSTRORIPARIAN PROVINCE OF EAST TEXAS, WHERE THE AUTHOR AND DR. BEQUAERT COLLECTED EXTENSIVELY, IS NOTEWORTHY AND CAN ONLY BE EXPLAINED BY THE PRESENCE IN THE AREA OF SOME ADVERSE ECOLOGICAL FACTOR.

THE SPECIES IS NOT RARE WITHIN THE HOUSTON CITY LIMITS.

PUPOIDES ALBILABRIS (C. B. ADAMS)

P (UPA) ALBILABRIS "WARDS LETTER". C. B. ADAMS, 1841, AMER. JOUR. SCI., XL, P. 271, (SUBSTITUTE FOR CYCLOSTOMA MARGINATA SAY.)

PUPOIDES ALBILABRIS PILSBRY, 1948, LAND MOLL. N. AMER. II, PT. 2, P. 921, FIG. 499 (1-7).

DISTRIBUTION: SPECIMENS EXAMINED FROM BANDERA, BEXAR, BRAZORIA, BRAZOS, BREWSTER, BURLESON, BURNET, CALHOUN, CAMERON, COMAL, CROCKETT, DALLAS, EDWARDS, EL PASO, FAYETTE, FRIO, GALVESTON, GONZALES, GRAYSON, GUADALUPE, HARRIS, HAYS, JEFF DAVIS, KARNES, KENDALL, KERR, LAVACA, LEON, LIBERTY, LIVE OAK, MATAGORDA, MCLENNAN, MILAM, MONTGOMERY, NUECES, PRESIDIO, REEVES, REFUGIO, ROBERTSON, SAN SABA, SAN PATRICIO, TARRANT, TRAVIS, TYLER, UVALDE, VAL VERDE, VICTORIA, WALLER, WASHINGTON, WEBB, ZAPATA, ZAVALA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM ARCHER, ARMSTRONG, BASTROP, BELL, BORDEN, BRISCOE, BROOKS, COOKE, CRANE, CROSBY, DALLAM, DAWSON, ELLIS, FLOYD, GARZA, GLASSCOCK, HARDEMAN, HARTLEY, HIDALGO, HOWARD, KINNEY, LEE, LUBBOCK, LYNN, MARTIN, MAVERICK, MEDINA, PECOS, POTTER, RANDALL, ROBERTS, SOMERVELL, STONEWALL, SWISHER, TAYLOR, TERRELL, WICHITA, WILLACY COUNTIES.

REMARKS: THE RANGE OF THIS SPECIES OUTSIDE OF TEXAS IS FROM CANADA TO GULF OF MEXICO, WEST TO THE DAKOTAS AND ARIZONA AND SOUTH TO NORTHERN MEXICO AND THE WEST INDIES. IT IS THEREFORE, NOT SURPRISING TO NOTE THAT IT IS GENERALLY DISTRIBUTED IN TEXAS.

IT IS FREQUENTLY FOUND WITHIN THE HOUSTON CITY LIMITS.

VERTIGO (ANGUSTULA) MILIUM (A. GOULD)

PUPA MILIUM A. GOULD, 1840, BOSTON JOUR. NAT. HIST., III, PT. 3, P. 402; PL. III, FIG. 23.

VERTIGO MILIUM PILSBRY, 1948, LAND MOLL. N. AMER., II, PT. 2, P. 944, FIG. 509A-E.

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BRAZORIA, BRAZOS, BURLESON, COMAL, FAYETTE, GALVESTON, HARDIN, HARRIS, KERR, LIBER-

TY, MATAGORDA, McLENNAN, NUECES, ROBERTSON, SAN PATRICIO, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BASTROP, BRISCOE, CRANE, CROSBY, HAYS, LUBBOCK, MEDINA, OLDHAM, SOMERVELL COUNTIES.

REMARKS: V. MILIUM IS THE MOST COMMON SPECIES OF VERTIGO IN THE EASTERN HALF OF TEXAS, PARTICULARLY IN THE TEXAN BIOTIC PROVINCE.

IT IS NOT RARE WITHIN THE HOUSTON CITY LIMITS.

VERTIGO (VERTIGO) OVATA (SAY)

"P." (PROBABLY FOR "PUPA") OVATA SAY, 1822, JOURN. AC. NAT. SCI. PHIL., II, PT. 2, P. 375.

VERTIGO (VERTIGO) OVATA PILSBRY, 1948, LAND MOLL. N. AMER., II, PT. 2, P. 952, FIGS. 513 (1-4 AND 7).

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BRAZORIA, BRAZOS, BURLESON, COMAL, CULBERSON, EL PASO, FAYETTE, GALVESTON, HARRIS, HARRISON, LIBERTY, NUECES, PRESIDIO, REFUGIO, ROBERTSON, SAN PATRICIO, VICTORIA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BRISCOE, COLORADO, CRANE, CROSBY, DALLAM, FORT BEND, GARZA, HARTLEY, LUBBOCK, RANDALL, ROBERTS, SWISHER, TAYLOR, UVALDE, VAL VERDE COUNTIES.

REMARKS: V. OVATA OCCURS IN NORTH AMERICA FROM LABRADOR TO SOUTHERN ALASKA IN THE NORTH, AND SOUTHWARD TO THE MEXICAN BORDER, AS WELL AS IN THE GREATER ANTILLES. IN TEXAS ITS OCCURRENCE IS SPOTTY AND MOSTLY BASED ON FOSSILS OR ON WASHED-UP DEAD SPECIMENS. IN 1956-1960, HOWEVER, IT WAS FOUND ALIVE AT SEVERAL LOCALITIES IN EAST TEXAS (INCLUDING THE HOUSTON AREA.)

VERTIGO (VERTIGO) RUGOSULA V. STERKI

VERTIGO RUGOSULA STERKI, 1890, PROC. ACAD. NAT. SCI. PHIL., P. 34

VERTIGO (VERTIGO) RUGOSULA PILSBRY, 1948, II, PT. 2, P. 948, FIG. 510 (1-3).

DISTRIBUTION: SPECIMENS EXAMINED FROM BANDERA, FAYETTE, GALVESTON, HARRIS, LAVACA, LIBERTY, NUECES, POLK, SAN PATRICIO, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM COLORADO, COMAL, JACKSON, LEE, SOMERVELL COUNTIES.

REMARKS: THIS SPECIES SHOULD BE REGARDED AS AUSTRORIPARIAN, IF ONE CONSIDERS ITS GENERAL RANGE AS KNOWN OUTSIDE TEXAS. WEST OF THIS AREA THE FEW RECORDS FROM THE TEXAS PROVINCE ARE MOSTLY BASED ON DRIFT SHELLS.

IT IS OCCASIONALLY FOUND WITHIN THE HOUSTON CITY LIMITS.

TO BE CONTINUED. ....

THE SCIENCE OF CONCHOLOGY IS BASICALLY CONCERNED WITH THE STUDY OF SHELLS. MANY PROBLEMS CONFRONT THE CONCHOLOGIST IN HIS PURSUIT OF KNOWLEDGE OF THIS COMPLEX ANIMAL GROUP. AMONG THEM ARE THE PREPARATION, CLEANING AND PRESERVATION OF SHELL SPECIMENS. THE QUALITY OF SUCH WORK MUST BE OF THE HIGHEST CALIBER IF USED ON SHELLS NEEDED FOR SCIENTIFIC STUDY.

SHELL PREPARATION, BY PROPER CLEANING METHODS, IS OFTEN NEGLECTED BY SHELL COLLECTORS AS WELL AS CONCHOLOGISTS. THIS IS BECAUSE OF THE DIFFICULTY AND TIME REQUIRED IN SHELL CLEANING. THE FOLLOWING IS AN ATTEMPT TO ASSIST THOSE WHO ARE FACED WITH THE PROBLEM OF PROPERLY CLEANING SHELLS.

HIGH QUALITY, TOGETHER WITH MINIMUM EXPENSE AND A REASONABLE TIME EXPENDITURE ON METHODS HAVE BEEN FUNDAMENTAL CONSIDERATIONS IN THIS STUDY. THESE THREE FACTORS ARE ESSENTIAL TO THE SUCCESS OF ANY METHOD OF SHELL CLEANING.

THE PURPOSE OF CLEANING SHELLS IS TWOFOLD. FIRST, THE SCIENTIFIC STUDY; SECOND, FOR ORNAMENTAL DISPLAY. IF THE FIRST PURPOSE IS ACCOMPLISHED, THE SECOND CAN BE ACHIEVED BY SLIGHT ALTERATIONS, BUT NOT VICE VERSA, SO WE MUST MAINTAIN PRECISE METHODOLOGY SO THAT THE RESULTS WILL BE ACCEPTABLE TO SCIENTISTS AND INSTITUTIONS. THE IMPORTANCE OF PROPER SHELL CLEANING AND PRESERVATION IS UNIVERSALLY RECOGNIZED.

IT IS IMPORTANT FOR AN INDIVIDUAL TO HAVE A GENERAL KNOWLEDGE OF THE EXTERNAL STRUCTURE BOTH NORMAL AND ABNORMAL, (I.E. - - SCAR GROWTH, ETC.) OF THE SHELLS HE IS PLANNING TO PREPARE. SPECIFICALLY, THE DELICATE STRUCTURES, SUCH AS THE PERIOSTRACUM AND SCULPTURE, AND SPINES NEED TO BE PROTECTED. NATURAL OR DEVELOPED MANUAL DEXTERITY IS VERY HELPFUL. THE INITIAL PROBLEM CONFRONTING ANY COLLECTOR IS THE COMPLETE REMOVAL OF THE MEATY PORTION OF THE ANIMAL FROM THE SHELL. IN THE CASE OF LIVE MOLLUSKS THIS IS GENERALLY DONE BY PUTTING THE ANIMAL IN SALT OR FRESH WATER AT ROOM TEMPERATURE AND BRINGING SLOWLY TO A BOIL FOR A FEW MINUTES, THEN GRADUALLY ALLOWING IT TO RETURN TO AMBIENT TEMPERATURE, THUS AVOIDING RAPID EXPANSION AND CONTRACTION WHICH MAY INJURE SOME SHELLS. THE MOLLUSK, WHEN BARELY COOL ENOUGH TO HANDLE, IS THEN REMOVED BY INSERTING A CURVED HEMOSTAT OR SHARP SCREW-LIKE WIRE OR INSTRUMENT THAT CAN BE SECURED TO THE MUSCLE AT ITS MOST INWARD POSITION IF POSSIBLE, THEN EXTRACTED WITH GENTLE BUT FIRM FORCE. SOMETIMES THE LIVER AND PART OF THE ATTACHMENT MUSCLE REMAINS AND MUST BE REMOVED OR EMBALMED WITH A WEAK SOLUTION OF FORMALDEHYDE OR DEHYDRATED IN ALCOHOL. REMOVAL IS PREFERRED. THE INSERTION OF A LONG FLEXIBLE NEEDLE DIRECTLY TO THE REMAINING SOFT TISSUE AND INJECTING SODIUM HYDROXIDE 10% (NAOH) OR POTASSIUM HYDROXIDE 10% (KOH) WILL COMPLETELY SATURATE THE SOFT TISSUE AND DISINTEGRATE IT BY DISSOLVING THE CONNECTIVE TISSUE. THIS TREATMENT IS FOLLOWED BY VIGOROUS IRRIGATION TO WASH OUT THE RESIDUAL UNWANTED MATERIAL. THESE CHEMICALS DO NOT INJURE THE SHELL OR ANY CALCIFIED MATTER, BUT ACT ONLY UPON ORGANIC SOFT TISSUE, SO THE ENTIRE SHELL MAY BE IMMERSSED IF NECESSARY.

BACTERIAL, EMBRYONIC FLY (LARVAE) AND ANT REMOVAL SYSTEMS ARE EQUALLY TOO LENGTHY AND IMPRACTICAL, THOUGH THE END RESULTS MAY BE EXCELLENT. IT SHOULD BE MENTIONED AT THIS POINT THAT IT IS IMPORTANT TO MAINTAIN THE OPERCULUM, OR

DOOR, WITH THE SHELL BECAUSE IT IS ACTUALLY PART OF THE SHELL AND IS ESSENTIAL FOR SCIENTIFIC STUDY. THIS MAY BE DONE BY WRAPPING IT IN GAUZE, THEN PUTTING IT SUFFICIENTLY INTO THE SHELL TO AVOID LOSS DURING EXTERNAL CLEANING PROCEDURE, OR BY PROPERLY IDENTIFYING IT AND SET IT ASIDE. ANOTHER SAFE AND SURE METHOD TO PREVENT LOSS OR SEPARATION IS TO SECURE THE SHELL WITH ITS OPERCULUM IN A GAUZE SACK WHEN NOT ACTUALLY IN HAND FOR FURTHER TREATMENT.

MOST OF THE ABOVE SYSTEMS OF MOLLUSK REMOVAL ARE ALREADY WELL KNOWN AND ACCEPTED AND ARE WELL WITHIN THE SPECIFICATIONS THAT FOLLOW. VERY LITTLE NEW INFORMATION HAS BEEN ADDED BUT IT IS NECESSARY TO BRIEFLY MENTION IT HERE SO THE ENTIRE CLEANING PROCEDURE WILL BE CLEAR.

WE ARE NOW APPROACHING THE MOST INTRICATE ASPECT OF SHELL CLEANING WHICH HAS CONCERNED COLLECTORS AND SCIENTISTS SINCE THE FIRST SHELL MADE ITS WAY TO A MUSEUM. THIS IS THE REMOVAL OF ALL FOREIGN MATTER FROM THE EXTERNAL OR EXPOSED SECTIONS OF THE SHELLS WITHOUT DESTROYING, MUTILATING OR ALTERING ANY PART OR PARTS OF THE ANIMAL'S EXTERNAL STRUCTURE. TO FURTHER EXPLAIN THE COMPLEXITY OF ACHIEVING THE DESIRED RESULTS, IT MUST BE REALIZED THAT THE TEXTURE OF THE FOREIGN MATTER ADHERING TO THE BODY OF THE SHELL IS SOMETIMES, IF NOT USUALLY, AS DENSE AS THE CELLULAR STRUCTURE OF THE SHELL ITSELF. ETHYL ACETATE WILL DISSOLVE THE ALGAE WITH ABSOLUTELY NO HARM TO THE SHELLS, AND WILL WEAKEN THE SUPPORT AND ATTACHMENTS OF THE CALCAREOUS SKELETONS, EVEN THOUGH THE FLUID DOES NOT ATTACK THEM DIRECTLY. BUTYL ACETATE MAY BE SUBSTITUTED, IF NECESSARY, BUT IT HAS A MORE OFFENSIVE, PENETRATING ODOR, SIMILAR TO A HIGH CONCENTRATION OF BANANA OIL. THESE CHEMICALS CAN BE PURCHASED FOR APPROXIMATELY \$4.00 PER GALLON AT ANY MAJOR CHEMICAL COMPANY LISTED IN THE YELLOW PAGES OF YOUR TELEPHONE DIRECTORY. FURTHER ENCOURAGING RESULTS ARE OBTAINED WITH THE USE OF AN ULTRA-SONIC VIBRATOR, WHICH WORKS WITH THE CHEMICAL AND HELPS BREAK DOWN UNDERMINED FOREIGN MATTER. THIS INSTRUMENT IS EXPENSIVE AND, WHILE DESIRABLE FOR QUICK RESULTS, IS NOT ESSENTIAL. THE CHOICE OF ETHYL ACETATE WAS NO ACCIDENT. A CAREFUL STUDY OF SOLVENTS WAS MADE, SEVERAL WERE SELECTED AND TESTED, AND ETHYL ACETATE WAS FOUND TO BE THE MOST PRACTICAL. IT DOES NOT, FOR EXAMPLE, ATTACK CALCIUM CARBONATE ( $\text{CaCO}_3$ ), THE SHELLS BASIC STRUCTURE, AS ACIDS DO. ETHYL ACETATE IS NOT AN ACID BUT AN ESTER AND THE TWO MUST NOT BE CONFUSED EVEN THOUGH ACID IS USED IN THE CHEMICAL PREPARATION OF ETHYL ACETATE.

THE NEXT NECESSARY ADJUNCT IS BABY OIL, WHICH IS A MIXTURE OF LANOLIN AND MINERAL OIL. THIS IS MY CHOICE OVER OTHER OILS AND GLYCERIN. UPON SUBMERSION OR TREATING THE SHELL WITH THIS OIL, THE NATURAL COLOR IS BROUGHT OUT VIVIDLY AND ALMOST IMMEDIATELY. WHEN A SHELL IS DEHYDRATED THE LUSTER MAY BE LOST AND THE COLOR OBSCURED; OIL RETURNS THE SHELL'S APPEARANCE NEARLY TO ITS LIVING BEAUTY. EVEN CLEANED SHELLS ON DISPLAY AND IN COLLECTIONS SHOULD BE TREATED WITH THIS OIL ROUTINELY, NOT ONLY TO ENHANCE THEIR NATURAL BEAUTY BUT FOR STRUCTURAL MAINTENANCE TO INSURE LONGEVITY AND REDUCE THE NATURAL TENDENCY OF THE PIGMENTS TO BREAK DOWN AND FADE IN TIME.

AFTER THE INITIAL USE OF ETHYL ACETATE IN THE CLEANING PROCESS, THE SHELL IS IMMEDIATELY IMMERSUED IN BABY OIL, ALLOWING THE OIL TO INVAD E THE SHELL AND THE OIL TO BECOME A SEPARATING MEDIUM BETWEEN THE SHELL AND THE CALCIFIED FOREIGN MATTER. THE PROCESS IS SPEEDED WITH THE ULTRA-SONIC VIBRATOR WHEN POSSIBLE. THE PENETRATION OF THE OIL INTO THE PORES OF THE UNDESIED CALCIFIED RESIDUALS ALSO OCCURS, WHICH WEAKENS THE CELLULAR STRUCTURE OF THE FOREIGN MATTER. BRUSHING WITH SOAP EASILY REMOVES THE LOOSE MATERIAL. A THOROUGH



AFTER A.M.U. , MILDRED TATE AND I HEADED ACROSS FLORIDA FROM COCOA BEACH TO SHELL ON THE GULF SHORES. WE PLANNED TO CHECK OUT SOME NEW AREAS TO ROUND OUT SHELLING EXPERIENCES. I HAD NEVER BEEN TO CEDAR KEY. MILDRED HAD BEEN THERE ONCE BUT WISHED TO RETURN AS SHE HAD NOT SHELLED VERY LONG THERE AND THOUGHT THE PLACE VERY INTERESTING.

CEDAR KEY IS MADE UP OF A NUMBER OF KEYS WHICH ARE JOINED TOGETHER BY BRIDGES NOW. IN THE EARLY DAYS OF FLORIDA , THIS WAS THE SITE OF THE FIRST EAST-WEST RAILROAD IN THE STATE AND THE HOME OF SEVERAL THRIVING INDUSTRIES RELATED TO MARINE FAUNA AND PALMETTO FRONDS. NOW IT IS A SLEEPY LITTLE PLACE WHERE TOURISTS COME TO RELAX , FISH AND SHELL. IT IS OFF HWY 98 , SOME 100 MILES NORTH OF THE TAMPA AREA. IT IS SOME 180 MILES AROUND THE BEND AND SOUTH OF APALACHICOLA .

WE STAYED AT FARAWAY INN , A SMALL MOTEL FACING GOOSE COVE. NEITHER OF US KNEW IT BEFOREHAND , BUT A SO-CALLED SAND SPRIT UNCOVERS HERE AT THE COVE FOR A GOOD HALF MILE AT VERY LOW TIDE. WE WERE TOLD THAT THIS HAPPENS ABOUT ONCE A MONTH , BUT I THINK THIS JUST MEANS TO WATCH THE FULL MOON TIMES AND YOUR TIDE TABLES. NO ONE REALLY KNEW MUCH ABOUT THE SHELLS.

WE COULDN'T WAIT FOR LOW TIDE AND HEADED FOR THE BEACH. THE BEACH IS NOT VERY INVITING AT HIGH TIDE. THERE WERE DRAINAGE PIPES FLOWING WASTE WATERS INTO THIS AREA. THE WATER WAS DIRTY BROWN. SO WE PICKED UP A FEW NASSARIUS AND WANDERED UP AND DOWN. FINALLY , I STOPPED AT SOME WET SAND AREAS NEAR AN OYSTER REEF THAT WAS BEGINNING TO BE EXPOSED. I BEGAN TO FIND TINY TRAILS AND THERE I STAYED. I DIDN'T LOOK UP OR DOWN. ALL I SAW WAS THOSE TINY TRAILS ! MILDRED WENT ON WAY DOWN THE COVE.

ABOUT TWO HOURS LATER , MILDRED CAME BACK TO WHERE I WAS STILL PICKING UP TINY SHELLS. SHE WANTED TO KNOW WHAT ON EARTH I WAS COLLECTING SO THAT I DID NOT SEE WHAT WAS EXPOSED BACK OF ME. SHE WAS EXCITED OVER HER FINDS OF MELONGENAS , BUSYCONS , FASCIOLARIAS AND A FEW OTHER SHELLS. BUT THERE IN BACK OF ME , WHEN I DID STRAIGHTEN UP TO LOOK , WAS THAT HUGE EXPANSE OF DRY SAND ON THE SAND SPRIT. OTHER SHELLERS WERE OUT ON THIS BAR , AND MILDRED REALLY COULDN'T UNDERSTAND WHY I HAD NOT GONE OUT THERE. NEEDLESS TO SAY , I DID HEAD OUT THERE IMMEDIATELY. BUT IT WAS ALMOST DARK , AND I ONLY FOUND A FEW LARGER SHELLS. EVERYWHERE I STEPPED I TROD ON FOUR-INCH LIVE SAND DOLLARS POPPING UP. THERE WERE MANY TINY TRAILS OF TEREBRAS AND TURRIDIS. IT BEGAN TO RAIN; I HAD TO LEAVE IN THE DARK. MOSQUITOES ATE ME ALIVE GETTING BACK TO THE CABIN.

WE STAYED ONE MORE DAY , BUT THE TIDE WAS LATER AND WE NEVER DID GET TO STAY ON THE EXPOSED BAR LONG ENOUGH. I WANT TO SEE THIS AGAIN. HOWEVER , THE TIDE DID GO DOWN ENOUGH FOR ME TO COLLECT THE BUSYCONS AND MELONGENAS WHICH WERE ABUNDANT AROUND THE OYSTER REEFS. SOME OF THE BUSYCONS WERE THE PECULIAR "BUMPLESS WONDERS" (CARLOS CARDEZA'S DESIGNATION). THE SHELLS WERE NOT ESPECIALLY CLEAN SPECIMENS , BUT THE DIFFERENT FORMS WERE INTERESTING.

IN CASE YOU ARE WONDERING ABOUT THE TERMINOLOGY OF THE USE OF THE NAME SAND SPRIT , THIS IS THE WAY IT WAS DESIGNATED ON A MAP OF CEDAR KEYS.

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PROBING OF THE REMAINING MATERIAL IS DONE WITH A SHARP PICKING INSTRUMENT , THE OLD STAND-BY , WHICH PROBABLY WILL NEVER BE REPLACED . PICKING BECOMES SO SIMPLIFIED BY THE ABOVE PROCEDURE THAT ONE MUST USE RESTRAINT IN APPLYING THE NECESSARY FORCE . IF SOME OF THE SPECIMENS SUBJECTED TO THIS TREATMENT HAVE RESIDUAL DEBRIS REMAINING IN CREVICES OR BETWEEN RIBS OR SPINES , THE SAME PROCESS MAY BE REPEATED OR AN ALTERNATIVE METHOD APPLIED .

THE SHELL MAY BE IMMERSSED IN A MIXTURE OF ETHYL ACETATE AND BABY OIL FOR SEVERAL DAYS . THE ETHYL ACETATE SERVES AS A VEHICLE FOR THE OIL TO REACH THE MORE OBSCURE AND MORE DENSE AREAS . OF COURSE , PICKING IS NECESSARY BETWEEN IMMERSIONS AND BRUSHINGS . THE SHELL MAY ALSO BE SECURED IN A LARGE SCREEN WIRE STRAINER UNDER A STRONG RUNNING WATER FAUCET FOR SEVERAL MINUTES , CHANGING ITS POSITION OCCASIONALLY TO INSURE DISTRIBUTION . FAUCET ATTACHMENTS CAN BE ACQUIRED FROM HARDWARE STORES TO NARROW THE WATER STREAM THEREBY RESULTING IN A MORE PRESSURE TO A SPECIFIED AREA . THE SAME PRINCIPLE IS USED WITH A DENTAL "WATER PICK" , ATTACHABLE TO A FAUCET AND WILL BE EFFECTIVE TO ANY AREA OF ANY SHELL .

IN CONCLUSION , IT HAS BEEN NECESSARY TO RELATE THESE METHODS IN A SOMEWHAT GENERALIZED MANNER WITH EMPHASIS ON THE MORE DIFFICULT SHELLS TO CLEAN . INDIVIDUAL JUDGMENT IS AN ABSOLUTE NECESSITY WHEN A SPECIFIC METHOD IS APPLIED TO A SPECIFIC SHELL . EACH SHELL HAS ITS OWN UNIQUE CHARACTERISTICS , AND THE DIFFERENCES SHOULD BE RESPECTED AND TREATMENT VARIED ACCORDINGLY .

IT SHOULD BE CLEARLY UNDERSTOOD THAT THE PURPOSE OF THIS PAPER IS TO ASSIST AND ENCOURAGE ALL SHELL COLLECTORS TO GO ONE STEP FURTHER AND PRESERVE THEIR SPECIMENS PROPERLY .

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CONTINUED FROM PAGE 12

BAILEY AND CAPERON IN THE JUNE 11 , 1971 ISSUE OF SCIENCE (172:1155-1157) AND HAS THE TITLE "CORAL-EATING SEA STARS ACANTHASTER PLANCI IN HAWAII" .

THEY CONCLUDE , AFTER OBSERVING A COLONY OF THE STARFISH SOME TWO KILOMETERS LONG , THAT THE "CORAL IN THE AREA WAS PREDOMINANTLY ALIVE , AND THE PROPORTION OF DEAD CORAL DID NOT INCREASE APPRECIABLY DURING OUR PERIOD OF OBSERVATION" . (THE SURVEY LASTED FROM OCTOBER 1969 TO MAY , 1970) .

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...CONTINUED FROM PAGE 9

#### SEPTEMBER MEETING

OUR NEXT MEETING WILL BE HELD ON SEPTEMBER 22ND AT 8 P.M. AT THE MUSEUM OF NATURAL SCIENCES IN HERMANN PARK . MR. DENNY BOWMAN , DIVING OFFICER OF THE MARINE BIOLOGICAL INSTITUTE AT GALVESTON WILL PRESENT A TALK ENTITLED "CARIBBEAN REEF CREATURES" . HIS TALK WILL BE ILLUSTRATED BY COLOR PHOTOGRAPHS .

Texas CONCHOLOGIST

SECTIONAL LIBRARY  
DIVISION OF MOLLUSKS

OCTOBER, 1971

VOLUME VIII, No. 3

MAY 31 1989  
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NOTES & NEWS

NEXT MEETING - ON IDENTIFICATION

OUR NEXT MEETING WILL BE HELD ON WEDNESDAY, OCTOBER 27, AT 8 P.M. IN THE MUSEUM OF NATURAL SCIENCE IN HERMANN PARK. IT WILL BE A WORKSHOP - AN EXPERIMENT IN TEAM TEACHING PLANNED ESPECIALLY FOR THOSE WHO WANT HELP IN LEARNING TO IDENTIFY SHELLS. BRING SHELLBOOKS AND LENSES AND SHELLS YOU WANT TO IDENTIFY.

MINUTES OF SEPTEMBER MEETING

BY FRITZ LANG, SECRETARY

PRESIDENT LLOYD MEISTER CALLED THE MEETING TO ORDER SEPTEMBER 22 AT 8:15 P.M. ABOUT 30 PERSONS, INCLUDING SEVEN VISITORS, WERE PRESENT.

TREASURER PAUL HUDSON REPORTED A NEW BALANCE OF \$1680.10, WHICH INCLUDES THE LIBRARY FUND.

DR. HELMER ODÉ EXPLAINED THAT THE SEPTEMBER ISSUE OF THE TEXAS CONCHOLOGIST WAS LATE BECAUSE THE PRINTER WAS OUT OF TOWN.

A FIELD TRIP TO THE GALVESTON JETTY WAS ANNOUNCED FOR OCTOBER 3.

MR. MEISTER ASKED FOR VOLUNTEER HOST COUPLES TO WELCOME MEMBERS AND VISITORS TO THE MEETINGS. MR. AND MRS. SAM MIRON ACCEPTED THE JOB, AND MR. AND MRS. JAMES HUDSON ALSO VOLUNTEERED.

THE PRESIDENT ASKED FOR A SHOW OF HANDS IN FAVOR OF A SHELL FAIR THIS YEAR, AND QUITE A NUMBER OF MEMBERS INDICATED THEIR FAVOR. RUTH GOODSON VOLUNTEERED TO BE CHAIRMAN OF THE SHELL FAIR. PRESIDENT MEISTER URGED MEMBERS TO DISPLAY AND TO HELP WITH MAKING THE FAIR A SUCCESS.

MRS. HOLLIS Q. BOONE REPORTED THAT NEW BOOKS AND PAMPHLETS HAVE BEEN ACQUIRED FOR THE LIBRARY. LISTS OF SHELLS FOR SALE WERE DISTRIBUTED.

ANNE SPEERS ASKED MEMBERS TO SEND HER LIVE LAND SNAILS FOR HER COLLECTION FOR EXPERIMENTAL BREEDING.

DR. ODÉ REPORTED ON CHANGES OF THE TEXAS CONCHOLOGIST STAFF AND PLANS TO CHANGE FORMAT AND FREQUENCY OF ISSUES NEXT YEAR.

MRS. L. DEXTER PRESENTED DENNY BOWMAN WHO SPOKE ON CARIBBEAN REEF CREATURES AND SHOWED SLIDES OF EXCELLENT QUALITY. HIS TALK WAS INTERESTING AND INFORMATIVE, AND WE ENJOYED IT VERY MUCH. OUR THANKS TO DENNY.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### SUPERFAMILY PYRAMIDELLACEA

#### 1) INTRODUCTION

TO REPORT THIS VERY DIFFICULT GROUP OF GASTROPODS WE MUST CHANGE OUR CUSTOMARY FORMAT OF SIMPLE ENUMERATION SOMEWHAT. WE KNOW SO LITTLE WITH CERTAINTY ABOUT THIS GROUP THAT IN ORDER TO PRESENT AN ACCOUNT OF THESE SHELLS FOR THE TEXAS BEACH IT WILL BE NECESSARY TO EXPLAIN THE MAIN FACTORS ON WHICH WE BASED OUR CLASSIFICATION. THUS, BEFORE A LISTING OF THE SEVERAL SPECIES IS PRESENTED, A BRIEF DISCUSSION OF THE IMPORTANT CHARACTERISTICS OF THIS COMPLEX OF SHELLS MUST BE PRESENTED.

THE PRELIMINARY NATURE OF OUR IDENTIFICATIONS IS STRONGLY EMPHASIZED. EXCEPT FOR A FEW WELL-KNOWN AND WELL-DEFINED SPECIES FOR WHICH THE MARGIN OF DOUBT IS RATHER SMALL, MOST OF OUR IDENTIFICATIONS WERE MADE BY A STUDY OF AVAILABLE LITERATURE. WITHOUT CAREFUL COMPARISON WITH TYPE MATERIAL OUR DISCUSSION CANNOT PRETEND TO BE VERY PROFOUND. IT REPRESENTS ONLY AN EFFORT TO SYSTEMATIZE THE BEWILDERING VARIETY OF MATERIAL FROM THE TEXAS BEACH INTO A PRELIMINARY SCHEME.

IT IS FAIRLY EASY TO OBTAIN A GREAT NUMBER OF SPECIES FROM BEACHDRIFT AND FROM OFFSHORE DREDGE SAMPLES. OUT OF A TOTAL OF ABOUT 11,000 LOTS OBTAINED BY DREDGING ALONG THE TEXAS COAST AND PLACED IN THE HOUSTON MUSEUM OF NATURAL SCIENCE, OVER 800 WERE PYRAMIDELLIDS. THIS SHOWS THAT SPECIES IN THIS FAMILY ARE COMMON AND WIDESPREAD IN THE FAUNA OF THE GULF OF MEXICO AND MAY EVEN SURPASS THE TURRIDAE AND MARGELIIDAE IN NUMBERS. FOR THE INSHORE FAUNA WE HAVE ABOUT 45 SPECIES TO REPORT, BUT IN THE OFFSHORE FAUNA THEIR NUMBER MAY BE AS HIGH AS ONE HUNDRED, BUT THESE ADDITIONAL SPECIES CANNOT BE DISCUSSED AT THIS TIME.

THE UNCERTAINTY ABOUT THE IDENTITY OF THIS MATERIAL ARISES FROM TWO CAUSES: THE FIRST IS THAT MOST BEACH MATERIAL IS, UNLESS COLLECTED ALIVE, IN DEPLORABLE CONDITION. THE SECOND CAUSE IS THE LACK OF A SYSTEMATIC SOURCE OF INFORMATION FOR THE WESTERN ATLANTIC PYRAMIDELLID FAUNA. WE HAVE ASSEMBLED OUR INFORMATION FROM MANY DIVERSE SOURCES WHICH ARE OFTEN CONTRADICTORY, OR UNCLEAR, SOME OF WHICH WE WILL LIST LATER.

THE EXTREME VARIABILITY OF MANY SPECIES HAS CAUSED US MUCH CONFUSION. FOR INSTANCE, IN THE LITERATURE FOR THE WESTERN ATLANTIC NO LESS THAN 200 DIFFERENT TAXA IN THE GENUS TURBONILLA ARE MENTIONED. MANY OF THESE ARE UNDOUBTEDLY SYNONYMOUS BUT THE BURDEN OF PROVING SYNONYMY HAS PREVENTED WORKERS OF TAKING AN INTEREST IN THIS FASCINATING GROUP OF SHELLS. CURIOUSLY ENOUGH THIS NEGLECT IS THE CAUSE THAT A FEW TEXAS FORMS APPEAR TO BE UNDESCRIBED.

THE VARIABILITY OF MANY SPECIES OF PYRAMIDELLIDS IS ASTONISHING. WHETHER ALL THESE VARIATIONS SHOULD BE DESCRIBED AS "DIFFERENT" SPECIES SEEMS DOUBTFUL, BUT WITHOUT A MUCH DEEPER STUDY OF THE PROBLEMS THAN WE ARE ABLE TO MAKE WE MUST LET THE MATTER REST AND WE WILL CONFINE OURSELVES TO REPORTING A FEW FACTS FOR TEXAS, IN THE HOPE THAT OUR OBSERVATIONS ABOUT DISTRIBUTION AND ENVIRONMENTS MAY CONTRIBUTE TO A SOLUTION OF THE PROBLEMS.

UNFORTUNATELY LITTLE IS KNOWN ABOUT THE MODE OF LIFE OF THESE GASTROPODS. IT IS PROBABLE, BUT NOT CERTAIN, THAT MOST SPECIES LIVE AS ECTO PARASITES OF OTHER ORGANISMS, MAINLY BIVALVES, GASTROPODS AND WORMS. WHETHER A PARTICULAR SPECIES IS RESTRICTED TO A SINGLE SPECIFIC HOST OR NOT IS VIRTUALLY UNKNOWN. A FINAL JUSTIFICATION OF THE SPECIES CONCEPT WITHIN THIS GROUP CAN ONLY BE GIVEN AFTER MORE DETAILED STUDIES ABOUT THE BIOLOGY OF THESE ANIMALS HAVE BEEN MADE. THAT THE PYRAMIDELLACEA ARE RELATED TO THE TECTIBRANCH MOLLUSKS HAS BEEN SHOWN BY ANATOMICAL WORK. AS FAR AS SHELL CHARACTERS ARE CONCERNED THIS RELATIONSHIP IS SHOWN BY THE PECULIAR STRUCTURE OF THE NUCLEUS, WHICH IS SINISTRAL. IT HAS AN AXIS WHICH OFTEN FORMS AN ANGLE OF CLOSE TO NINETY DEGREES WITH THE AXIS OF THE POST NUCLEAR WHORLS. DALL HAS COMMENTED (T.W.I.S., 1892, P. 319): "THE SINISTROSITY OF THE NUCLEUS IN GASTROPODS IS OF LESS SYSTEMATIC VALUE THAN FORMERLY SUPPOSED. MANY SPECIES OF CALLIOSTOMA HAVE A REVERSED NUCLEUS WITHOUT DIFFERING IN OTHER RESPECTS FROM THEIR CONGENERS." IN SOME GENERA THE NUCLEUS IS PERCHED ON TOP OF THE SHELL: TURBONILLA, MATHILDA; IN OTHERS IT IS IMMERSSED IN THE LATER WHORLS SO THAT THE SHELL STARTS AS IT WERE WITH A NARROW TUBE RISING OUT OF THE SHELL ITSELF. IN OTHER TECTIBRANCH MOLLUSKS THE IMMERSION OF THE NUCLEUS HAS PROCEEDED MUCH FARTHER, SO THAT IN GENERA AS BULLA, THE MATURE SHELL CONSISTS ENTIRELY OUT OF THE LAST WHORL. IN GENERA SUCH AS ACTEON (IMMERSSED NUCLEUS) AND RETUSA (PERCHED NUCLEUS) THIS PROCESS IS NOT YET COMPLETED, BUT THE ENLARGEMENT OF THE LAST WHORL IS ALREADY APPRECIABLE. STILL THESE TWO GENERA REMIND ONE OF THE SHAPE OF SOME PYRAMIDELLIDS. ANOTHER IMPORTANT POINT OF SIMILARITY BETWEEN THEM AND THE PYRAMIDELLIDS IS THE PRESENCE OF ONE OR MORE COLUMELLAR FOLDS.

THE USE OF ONLY A FEW GENERIC NAMES -- ALTHOUGH A LARGE NUMBER OF SUBGENERA HAS BEEN DEFINED ON THE BASIS OF SHELL CHARACTERS -- HAS TENDED TO OBSCURE RELATIONSHIPS WITHIN THIS GROUP. FOR PRACTICAL REASONS WE HAVE SUBDIVIDED THE TEXAS MATERIAL INTO FOUR MAIN DIVISIONS WHICH CORRESPOND TO A LARGE EXTENT WITH THOSE OF DALL AND BARTSCH. IN SOME OF THESE WE EMPLOY MORE THAN ONE GENERIC NAME. THESE WE CANNOT JUSTIFY, BUT THEY WERE CHOSEN FROM THE LITERATURE IN ORDER TO BRING OUT THE RELATIONSHIPS WHICH WE THINK EXIST IN OUR TEXAS MATERIAL.

TO BE CONTINUED.....

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AN ARTICLE ON "NEOLITHIC TRADE ROUTES RE-ALIGNED BY OXYGEN ISOTOPE ANALYSES" BY N. SHACKLETON AND C. RENFREW HAS BEEN PUBLISHED IN THE DEC. 12, 1970 ISSUE OF NATURE (VOL. 228, PP. 1062-1065). COMMENTS ON THIS ARTICLE APPEARED IN THE SCIENCES, 11:23-24, SEPT. 1971, UNDER THE TITLE "THE SHELL GAME".

THE STUDY CONCERNS THE OXYGEN ISOTOPE ANALYSIS OF SHELLS OF SPONDYLUS GAEDEROPUS LINNE DUG FROM NEOLITHIC SITES IN THE BALKANS AND CENTRAL EUROPE. THE REPORT IS INTERESTING FROM TWO STANDPOINTS. FIRST, THE TECHNIQUE INVOLVED IS THE ANALYSIS OF OXYGEN ISOTOPIC COMPOSITION OF THE CALCIUM CARBONATE CONTAINED IN THE SHELLS. IT IS PRESUMED THAT THE "MOLLUSC DEPOSITS THE CALCIUM CARBONATE OF ITS SHELL IN ISOTOPIC EQUILIBRIUM WITH THE WATER IT INHABITS". FROM THE ANALYSIS, THEREFORE, IT IS POSSIBLE TO IDENTIFY THE NATURE OF THE WATERS FROM WHICH THE SHELLS CAME. THUS, IT BECOMES POSSIBLE TO DIFFERENTIATE AMONG SHELLS ORIGINATING FROM DIFFERENT SOURCES (E.G., BODIES OF WATER SUCH AS THE BLACK SEA AND THE MEDITERRANEAN SEA) OR FROM THE SAME SOURCE AT DIFFERENT TIMES.

THE SECOND INTERESTING FACET OF THIS REPORT CONCERNS THE ARCHAEOLOGICAL INTERPRETATIONS THAT WERE DRAWN FROM IDENTIFICATION OF SOURCES AND AGES OF THE SHELLS. AFTER ANALYZING THE SPONDYLUS SHELLS, THE AUTHORS SPECULATE THAT

- A) A PREHISTORIC TRADE (4000 B.C. TO 2500 B. C.) EXISTED IN BEADS AND BANGLES MADE FROM THIS ATTRACTIVE SHELL.;
- B) THE SOURCE OF THE SPONDYLUS USED WAS THE AEGEAN SEA AND NOT THE BLACK SEA.;
- C) THE SPONDYLUS TRADE MECHANISM WAS PROBABLY A PRESTIGE CHAIN EXCHANGE CHARACTERIZED BY "RECIPROCAL TRANSFER OF GOODS BETWEEN HIGH-STATUS PERSONS AND FREQUENTLY HANDED ON IN SUBSEQUENT EXCHANGES."

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THE ROLE OF BURROWING MOLLUSKS AS A BIOEROSIVE FORCE IN SHAPING THE SUBMARINE TOPOGRAPHY IS DISCUSSED IN THE ARTICLE ENTITLED "SUBMARINE CANYON EROSION: CONTRIBUTION OF MARINE ROCK BURROWERS" (PUBLISHED IN SCIENCE, 173:1127-1129, SEPT. 17, 1971) BY J. E. WARME, T. B. SCANLAND AND N. F. MARSHALL.

THE AUTHORS REPORT THE RESULTS OF STUDIES CARRIED OUT ON ROCKS OBTAINED FROM THE RIM AND UPPER WALLS OF SCRIPPS SUBMARINE CANYON, OFFSHORE UNDER THE PACIFIC OCEAN NEAR LA JOLLA, CALIFORNIA. IT IS CONCLUDED THAT EROSION BY INVERTEBRATE ANIMALS IS MORE IMPORTANT THAN EROSION BY MECHANICAL AND CHEMICAL PROCESSES IN MANY AREAS. BIVALVE MOLLUSKS, INCLUDING BOTH PHOLADIDS AND BURROWING MYTILIDS, APPEARED TO BE THE MOST ABUNDANT EXCAVATORS. AMONG THE MOLLUSCAN BURROWERS WERE PARAPHOLAS CALIFORNICA, NETTASTOMELLA ROSTRATA, ADULA CALIFORNIENSIS, AND LITHOPHAGA PLUMULA. IT IS ESTIMATED THAT THE AVERAGE ATTRITION OF ROCK SURFACES IS FROM 2 TO 10 MM PER YEAR.

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GASTROCOPTA (GASTROCOPTA) RUPICOLA (SAY)

PUPA RUPICOLA SAY, 1821, Jour. Acad. Nat. Sci. Phil. II, Pt. 1, p. 163.

GASTROCOPTA RUPICOLA PILSBRY, 1948, Land Moll. N. Amer., II, Pt. 2, p. 905, FIG. 491A,B,C.

DISTRIBUTION: SPECIMENS EXAMINED FROM BRAZORIA, CALHOUN, COMAL, GALVESTON, HARRIS, LIBERTY, VICTORIA COUNTIES. PREVIOUS PUBLISHED RECORDS. NONE.

REMARKS: PILSBRY STATES THAT THIS SPECIES OCCURS FROM SOUTH CAROLINA TO FLORIDA AND WEST ALONG THE GULF COASTAL PLAIN TO GALVESTON, TEXAS. IT IS RESTRICTED TO THE AUSTRORIPARIAN PROVINCE, WHERE IT SHOULD BE CONSIDERED A CHARACTERISTIC MEMBER OF THE FAUNA.

IT HAS BEEN COLLECTED AT ONE STATION IN HOUSTON.

VERTIGO (VERTILLARIA) OSCARIANA STERKI

VERTIGO OSCARIANA STERKI, 1890, Proc. Ac. Nat. Sci. Phil., XLII, p. 33.

VERTIGO (VERTILLARIA) OSCARIANA PILSBRY, 1948, Land Moll. N. Amer., II, Pt. 2, p. 946, FIGS. 509 A AND 510 (8, 10, AND 11).

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, HARRIS, MATAGORDA, McLENNAN, NUECES, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM COLORADO, COMAL COUNTIES.

REMARKS: V. OSCARIANA IS A CHARACTERISTIC SNAIL OF THE AUSTRORIPARIAN BIOTIC PROVINCE, BEING KNOWN ONLY FROM WEST VIRGINIA, TENNESSEE, ARKANSAS, TEXAS, LOUISIANA, ALABAMA, AND FLORIDA. IN TEXAS, WHERE IT REACHES ITS WESTERN LIMIT, IT OCCURS BEYOND THE AUSTRORIPARIAN PROVINCE AS DEAD SHELLS WASHED UP (POSSIBLY FROM PLEISTOCENE DEPOSITS) IN RIVER OR BEACH DRIFT.

LIVING SPECIMENS HAVE BEEN TAKEN WITHIN THE HOUSTON CITY LIMITS.

PUPISOMA DIOSCORIGOLA (C. B. ADAMS)

HELIX DIOSCORICOLA C. B. ADAMS, 1845, Proc. Boston Soc. Nat. Hist. II, p. 16.

PUPISOMA DIOSCORICOLA PILSBRY, 1948, Land Moll. N. Amer., II, Pt. 2, p. 1007, FIG. 538 (1-5).

DISTRIBUTION: SPECIMENS EXAMINED FROM BRAZORIA, CAMERON, FAYETTE, HARRIS, HIDALGO, LAVACA, LIBERTY, LIVE OAK, MATAGORDA, SAN PATRICIO, VICTORIA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM DALLAS, ELLIS COUNTIES.

REMARKS: ALTHOUGH THIS MINUTE SNAIL IS EASILY OVERLOOKED BY COLLECTORS, IT WOULD SEEM TO BE NEARLY RESTRICTED IN TEXAS TO THE GULF COAST PLAIN AREA, WHERE IT HAS BEEN FOUND IN ALL THREE BIOTIC PROVINCE. THE TWO UNCHECKED RECORDS FROM THE NORTHERN PART OF THE STATE MAY BE BASED ON WASHED-UP

FOSSILS, IF NOT ON MISIDENTIFICATIONS; THEY ARE NOT RELIABLE EVIDENCE THAT THE SPECIES LIVES THERE NOW. P. DIOSCORICOLA IS ESSENTIALLY A SNAIL OF TROPICAL AND SUBTROPICAL AMERICA AND THE WEST INDIES. IT ENTERS THE UNITED STATES ONLY IN SOUTHERN FLORIDA AND EASTERN TEXAS.

IT HAS BEEN TAKEN ON ONE OCCASION WITHIN THE HOUSTON CITY LIMITS (IN MEMORIAL PARK).

CARYCHIUM EXILE H. C. LEA

CARYCHIUM EXILE H. C. LEA, 1842, AMER. JOUR. SCI. AND ARTS, XLII, P. 109, PL. 1, FIG. 5.

CARYCHIUM EXILE PILSBRY, 1948, LAND MOLL. N. AMER. II, PT. 2, P. 1058, FIGS. 561 C, 566 A, AND 566 D.

DISTRIBUTION: SPECIMENS EXAMINED FROM AUSTIN, BANDERA, BRAZORIA, BRAZOS, BURLESON, COMAL, DALLAS, DEWITT, EL PASO, FAYETTE, FORT BEND, GONZALES, GUADALUPE, HARDIN, HARRIS, HAYS, KARNES, KERR, LAVACA, LIBERTY, MADISON, MATAGORDA, MCLENNAN, MILAN, NUECES, POLK, REFUGIO, ROBERTSON, SAN SABA, TRAVIS, UVALDE, VAL VERDE, VICTORIA, WASHINGTON COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BASTROP, COLORADO, CROSBY, FRIO, LUBBOCK, MEDINA, RANDALL, SOMERVELL COUNTIES.

REMARKS: C. EXILE OCCURS OVER MOST OF THE EASTERN UNITED STATES AND CANADA. IN THE SOUTH IT REACHES ITS WESTERN LIMITS (AS A RECENT, LIVING SNAIL) IN CENTRAL TEXAS, EXTENDING FROM THERE INTO MEXICO AND CENTRAL AMERICA. IT APPEARS TO BE EXTINCT NOW IN THE PANHANDLE AND WEST TEXAS, THE FEW RECORDS FROM THERE BEING BASED ON PLEISTOCENE FOSSILS.

IT IS A COMMON SNAIL IN THE HOUSTON AREA.

HELICINA (OLIGYRA) ORBICULATA TROPICA PFEIFFER

HELICINA TROPICA PFEIFFER, 1850, SYST. CONCH. CAB., I, ABT. 18, PT. 1, P. 37.

HELICINA ORBICULATA TROPICA, PILSBRY, 1948, LAND MOLL. N. AMER. II, PT. 2, P. 1084, FIG. 579 F-H.

DISTRIBUTION: SPECIMENS EXAMINED FROM ARANSAS, ATASCOSA, AUSTIN, BANDERA, BASTROP, BEE, BEXAR, BLANCO, BRAZORIA, BRAZOS, BURLESON, BURNET, CALHOUN, CAMERON, CHAMBERS, COMAL, CORYELL, DALLAS, DEWITT, EDWARDS, ELLIS, FAYETTE, FORT BEND, FRANKLIN, FRIO, GALVESTON, GILLESPIE, GONZALES, GRAYSON, GRIMES, GUADALUPE, HAMILTON, HARDIN, HARRIS, HAYS, HIDALGO, JACKSON, JEFFERSON, KARNES, KENDALL, KERR, KIMBLE, KINNEY, LAVACA, LIBERTY, LIVE OAK, LLANO, MATAGORDA, MCLENNAN, MEDINA, MILAM, MONTGOMERY, NAVARRO, NUECES, POLK, REFUGIO, ROBERTSON, SAN JACINTO, SAN PATRICIO, SAN SABA, TARRANT, TRAVIS, TYLER, UVALDE, VAL VERDE, VICTORIA, WALKER, WASHINGTON, WEBB, WHARTON, ZAVALA COUNTIES. PREVIOUS PUBLISHED RECORDS FROM BELL, BOWIE, BROOKS, CALDWELL, FALLS, GOLIAD, HILL, HOUSTON, KAUFMAN, LEE, McMULLAN, MONTAGUE, REAL, SMITH, SOMERVELL, WILLACY, WILSON COUNTIES.

REMARKS: H. O. TROPICA OCCURS OVER MOST OF THE SOUTHEASTERN HALF OF TEXAS, WHERE IT IS A COMMON AND CHARACTERISTIC SNAIL IN THE AUSTRORIPARIAN, TEXAN, BALCONIAN AND TAMAULIPAN PROVINCES.



IT IS ABUNDANT IN HOUSTON. IT IS A SEMI-ARBOREAL SNAIL, OFTEN FOUND CLIMBING TREES AFTER RAINS.

## NATIVE SPECIMENS NOW ACCEPTED AS LIVING IN THE AREA

ONLY THE SPECIES INCLUDED IN THIS LIST HAVE THEIR DISTRIBUTION SHOWN ON MAPS AND WERE CONSIDERED IN DETAIL. THE OBSERVED OR REPORTED OCCURRENCE IN THE THREE BIOTIC PROVINCES COVERED BY THIS STUDY, IS SHOWN FOR EACH SPECIES BY THE ABBREVIATIONS AUSTR. (AUSTRORIPARIAN), TEX. (TEXAN), TAM. (TAMAULIPAN). THE ARRANGEMENT OF THE FAMILIES AND GENERA IS THAT OF H. A. PILSBRY'S COMPREHENSIVE MONOGRAPH "LAND MOLLUSKS OF NORTH AMERICA" (4 PARTS, PHILADELPHIA, 1939-1948). SOME DEVIATIONS FROM THE NOMENCLATURE USED BY PILSBRY, BUT ADOPTED FOR THIS REPORT, WERE SUGGESTED BY DR. BEQUAERT.

## NATIVE MOLLUSKS OF THE TEXAS COASTAL COUNTIES

### CLASS GASTROPODA

### SUBCLASS PULMONATA

### ORDER STYLOMMATOPHORA

### FAMILY POLYGYRIDAE

1. POLYGYRA (POLYGYRA) SEPTEMVOLVA FEBIGERI (T. BLAND) AUSTR., TEX., TAM.
2. POLYGYRA (DAEDALOCHILA) AURIFORMIA (T. BLAND) AUSTR., TEX., TAM.
3. POLYGYRA (LOBOSCULUM) LEPORINA (A. GOULD) AUSTR., TEX.
4. POLYGYRA (ERYMODON) MOOREANA (W. G. BINNEY) TEX.
5. POLYGYRA (ERYMODON) MOOREANA THOLUS (W. G. BINNEY) TEX.
6. POLYGYRA (ERYMODON) TEXASIANA (J. MORICAND) (TYPICAL) AUSTR., TEX., TAM.
7. POLYGYRA (ERYMODON) TEXASIANA TRIODONTOIDES (T. BLAND) AUSTR., TEX.
8. POLYGYRA (ERYMODON) TEXASIANA POLITA H. A. PILSBRY AND A. A. HINKLEY, TAM.
9. STENOSTREMA (EUCHEMOTREMA) LEAI ALICIAE (H. A. PILSBRY) AUSTR., TEX.
10. PRATICOLELLA BERLANDIERIANA (J. MORICAND) AUSTR., TEX., TAM.
11. PRATICOLELLA GRISEOLA (L. PFEIFFER) TAM. (INTRODUCED? AUSTR., TEX.)
12. MESODON (MESODON) THYROIDUS (T. SAY) AUSTR., TEX.
13. TRIODOPSIS (TRIODOPSIS) VULTUOSA (A. GOULD) AUSTR.

### FAMILY SAGDIDAE

14. THYSANOPHORA (THYSANOPHORA) HORNII (W. M. GABB) TAM.

### FAMILY BULIMULIDAE

15. BULIMULUS (RABDOTUS) ALTERNATUS (T. SAY) TAM.
16. BULIMULUS (RABDOTUS) DEALBATUS (T. SAY) (TYPICAL) AUSTR., TEX.
17. BULIMULUS (RABDOTUS) DEALBATUS MOOREANUS (L. PFEIFFER) TEX.
18. BULIMULUS (RABDOTUS) DEALBATUS RAGSDALEI H. A. PILSBRY, TAM.

### FAMILY OLEACINIDAE

19. EUGLANDINA (EUGLANDINA) TEXASIANA (L. PFEIFFER) TAM.

20. EUGLANDINA (SINGLEYA) SINGLEYANA (W. G. BINNEY) TEX., (TAM. ?, IN DRIFT ONLY).

FAMILY HAPLOTREMATIDAE

21. HAPLOTREMA CONCAVUM (T. SAY) AUSTR.

FAMILY ZONITIDAE

22. EUCONULUS CHERSINUS TROCHULUS (O. REINHARDT) AUSTR., TEX., TAM.  
23. GUPPYA GUNDLACHII (L. PFEIFFER) TAM.  
24. RETINELLA (GLYPHYALUS) ROEMERI (H. A. PILSBRY AND J. H. FERRISS) TEX.  
25. RETINELLA (GLYPHYALINIA) INDENTATA (PAUCILLRATA) (A. MORELET) AUSTR., TEX., TAM.  
26. MESOMPHIX (OMPHALINA) FRIABILIS (W. G. BINNEY) AUSTR., TEX.  
27. HAWAIIA MINUSCULA (A. BINNEY) AUSTR., TEX., TAM.  
28. VENTRIDENS DEMISSUS (A. BINNEY) AUSTR.  
29. VENTRIDENS INTERTEXTUS (A. BINNEY) AUSTR.  
30. ZONITOIDES (ZONITOIDES) ARBOREUS (T. SAY) AUSTR., TEX.  
31. STRIATURA (STRIATURA) MERIDIONALIS (H. A. PILSBRY AND J. H. FERRISS) AUSTR.

FAMILY ENDODONTIDAE

32. ANGUISPIRA ALTERNATA STRONGYLODES (L. PFEIFFER) TEX.  
33. ANGUISPIRA ALTERNATA CRASSA B. WALKER, AUSTR.  
34. HELICODISCUS (HELICODISCUS) EIGENMANNI H. A. PILSBRY, AUSTR., TEX., TAM.  
35. PUNCTUM VITREUM H. B. BAKER, TEX.

FAMILY PHILOMYSIDAE

36. PHILOMYCUS CAROLINIANUS FLEXUOLARIS C. S. RAFINESQUE, AUSTR., TEX.

FAMILY SUCCINEIDAE

37. CATINELLA AVARA (T. SAY) AUSTR., TEX., TAM.  
38. SUCCINEA LUTEOLA A. GOULD, TEX., TAM.  
39. STROBILOPS LABYRINTHICA TEXASIANA (H. A. PILSBRY AND J. H. FERRISS) AUSTR., TEX., TAM.  
40. STROBILOPS (DISCOSTROBILOPS) HUBBARDI (A. D. BROWN) (TEX. ?)

FAMILY PUPILLIDAE

41. GASTROCOPTA (ALBINULA) CONTRACTA (T. SAY) AUSTR., TEX.  
42. GASTROCOPTA (VERTIGOPSIS) PENTODON (T. SAY) AUSTR., TEX., TAM.  
43. GASTROCOPTA (GASTROCOPTA) CRISTATA (H. A. PILSBRY AND E. G. VANATTA) TEX.  
44. GASTROCOPTA (GASTROCOPTA) PELLUCIDA HORDEACELLA (H. A. PILSBRY) AUSTR., TEX., TAM.  
45. GASTROCOPTA (GASTROCOPTA) PROCERA (A. GOULD) TEX., TAM.  
46. GASTROCOPTA (GASTROCOPTA) RUPICOLA (T. SAY) AUSTR.  
47. PUPOIDES ALBILABRIS (C. B. ADAMS) AUSTR., TEX., TAM.  
48. VERTIGO (ANGUSTULA) MILIUM (A. GOULD) AUSTR., TEX.  
49. VERTIGO (VERTIGO) OVATA (T. SAY) AUSTR., TEX.

TO BE CONTINUED.....

OVER THE PAST 5 YEARS SEVERAL MEMBERS OF THE HOUSTON CONCHOLOGY SOCIETY HAVE BEEN ENGAGED IN A STUDY OF THE MOLLUSCAN FAUNA OF THE NORTHWEST GULF OF MEXICO. DREDGED SAMPLES FOR THIS STUDY WERE SUPPLIED BY THE BUREAU OF COMMERCIAL FISHERIES IN GALVESTON, AND BY SEVERAL OTHER SOURCES. ALL MATERIAL IS NOW PART OF THE MOLLUSK COLLECTION OF THE MUSEUM OF NATURAL SCIENCE IN HOUSTON. A PRELIMINARY REPORT OF THE RESULTS IS IN PREPARATION AND IT IS UNNECESSARY TO ANTICIPATE HERE THESE RESULTS. HOWEVER, IT MAY BE OF INTEREST TO COMMUNICATE AT THIS TIME SOME DATA ABOUT THE DISPERSAL OF THE MOST COMMON SPECIES OF MOLLUSKS IN THE NORTHWEST GULF OF MEXICO. IN THAT PHASE OF THE PROJECT WHICH NOW HAS BEEN COMPLETED ABOUT 11,000 LOTS OBTAINED FROM ABOUT 150 LOCATIONS WERE TENTATIVELY IDENTIFIED AND CATALOGUED. MOST OF THE SAMPLE LOCATIONS ARE SITUATED ON THE OFFSHORE SHELF IN A DEPTH RANGE BETWEEN 10 AND 40 FATHOMS, BUT A NUMBER OF THEM ARE FROM WATER LESS DEEP (BAYS AND BEACHES AND A FEW OFFSHORE LOCATIONS OF 4 FATHOMS) AND ANOTHER SMALL FRACTION FROM MUCH DEEPER WATER (40 - 170 FMS) AND THREE FROM BETWEEN 400 TO 500 FATHOMS. THE MAJORITY OF ALL SAMPLES COMES FROM THE GALVESTON-FREEPORT AREA OF THE COAST, AND A FEW FROM WESTERN LOUISIANA AND SOUTHWEST TEXAS AT PORT ARANSAS.

THE UNEQUAL DENSITY OF THE SAMPLING GRID AND THE NONUNIFORM RANGE IN DEPTH AT WHICH THE SAMPLES WERE OBTAINED SHOULD BE KEPT IN MIND IN INTERPRETING THE LIST OF SPECIES WHICH IS REPORTED HERE. ALSO THE SIZE OF THE SAMPLES AND THE METHOD BY WHICH THEY WERE OBTAINED HAS A BEARING ON THE COMPOSITION OF THE LIST.

THE LIST GIVEN BELOW IS A CATALOGUE OF SPECIES ARRANGED ACCORDING TO THE NUMBER OF STATIONS AT WHICH THESE SPECIES WERE OBTAINED. IN IT ARE LISTED ONLY THOSE SPECIES FOUND AT AT LEAST 20 LOCATIONS. THE TOTAL NUMBER OF SPECIES ENCOUNTERED IS WELL OVER 1000. MOST OF THESE ARE SMALL TO MINUTE AND A CONSIDERABLE PERCENTAGE OF THEM COULD NOT BE IDENTIFIED. NO PARTICULAR CLAIMS ABOUT THE SIGNIFICANCE OF THE WAY OF ARRANGEMENT CAN BE MADE. I HOPE THAT IT WILL GIVE SOME INDICATION ABOUT THE DISPERSAL OF SPECIES IN THE OFFSHORE FAUNA. THE NUMBER OF SPECIMENS OBTAINED AT ANY PARTICULAR LOCATION HAS NOT BEEN USED TO WEIGH THE RESULT IN ANY WAY. IN A SENSE THEN THE LIST REFLECTS THE DEPTH RANGE AND ENVIRONMENTS WHICH WERE MOST OFTEN SAMPLED. HOWEVER, I BELIEVE THAT THE LIST IS INTERESTING ENOUGH TO BE PRESENTED HERE BECAUSE IT SHOWS SOME UNEXPECTED SPECIES.

AT THIS TIME NO INFORMATION CONCERNING LIVE OCCURRENCES CAN BE GIVEN AND THE NUMBER OF LOCATIONS IS THE SUM OF ALL LOCATIONS WHERE LIVE, DEAD AND FRAGMENTAL MATERIAL WAS OBTAINED. IT IS REMARKABLE THAT SOME SPECIES WHICH WERE ABUNDANT IN THE SAMPLES WERE ONLY OBTAINED IN DEAD MATERIAL. FOR INSTANCE *MULINIA LATERALIS* HAS BEEN DREDGED IN ABUNDANCE, BUT WAS NEVER FOUND ALIVE IN OFFSHORE WATERS, ALTHOUGH SOMETIMES FRESH LOOKING MATERIAL WAS OBTAINED. THE SPECIES LIVES IN GREAT QUANTITIES CLOSE TO THE BEACHES IN THE INLETS AND IN THE BAYS. WHETHER ALL SPECIMENS OF *MULINIA LATERALIS* DREDGED OFFSHORE REPRESENT PLEISTOCENE OR SLIGHTLY YOUNGER MATERIAL IS OPEN TO DOUBT.

ALSO TABULATED ARE THE DEPTH RANGES AND BOTTOM CONDITIONS. THE LATTER HAVE BEEN SEPARATED INTO FIVE CATEGORIES: SANDY OR SHELLY MUD (S), MUD (M), OUT-

CROPS (O), CORAL REEF (C), ALGAL REEF (A). AT SEVERAL LOCATIONS IN THE SAMPLED AREA ROCKFORMATIONS OUTCROP ON THE BOTTOM OF THE GULF: THESE HAVE ALL BEEN DESIGNATED AS "OUTCROPS" ALTHOUGH THEIR ECOLOGICAL CONDITIONS MAY VARY CONSIDERABLY.

AS WILL BE SEEN SEVERAL OF THE LISTED SPECIES SO FAR HAVE NOT BEEN IDENTIFIED. IT IS CERTAIN THAT AFTER A MORE COMPLETE STUDY OF THE MATERIAL AT HAND SOME IDENTIFICATIONS WILL HAVE TO BE CHANGED. HOWEVER FOR AN OVERALL PICTURE OF THE FAUNA THE PRECISE DETAILS ARE NOT TOO IMPORTANT.

IN CONCLUSION, WE NOTE THAT MANY OF THE MOST COMMON BAY AND BEACHSHELLS ARE MISSING IN OUR LIST. THE LIST, ARRANGED IN ORDER OF DECREASING NUMBER OF LOCATIONS, FOLLOWS. TO ECONOMIZE IN TYPING EFFORT AUTHORS NAMES IN THE SPECIES DESIGNATIONS HAVE BEEN OMITTED.

CORBULA BARATTIANA	73	4-75 FMS.	S	O	A		
TECTONATICA PUSILLA	70	4-75 FMS.	S	O	C		
ANADARA TRANSVERSA	67	0-70 FMS.	S	O			
CHIONE CLENCHI	67	4-50 FMS.	S	O	A		
AEQUIPECTEN GIBBUS	66	4-60 FMS.	S	O	A		
CAVOLINA LONGIROSTRIS	64	8-500 FMS.	S	O	M	C	
ANOMIA SIMPLEX	61	0-75 FMS.	S	O	A		
NOTOCORBULA OPERCULATA	60	6-70 FMS.	S	O	A		
TEREBRA "PROTEXTA"	59	4-75 FMS.	S				
OSTREA EQUESTRIS	59	0-70 FMS.	S	O	A		
GOULDIA CERINA	58	4-57 FMS.	S	O	C	A	
CHAMA CONGREGATA	57	4-40 FMS.	S	O	C	A	
ECHINOCHEMA ARCINELLA	57	4-43 FMS.	S	O	A		
MULINIA LATERALIS	57	4-40 FMS.	S	O	A		
QUADRANS LINTEA	55	4-50 FMS.	S	O			
NUCULANA CONCENTRICA	54	4-40 FMS.	S				
CRESEIS ACICULA	53	4-500 FMS.	S	O	M	A	C
TELLINA VERSICOLOR	53	4-40 FMS.	S	O			
NUCULA PROXIMA	51	4-60 FMS.	S	O			
DENTALIUM TEXASIANUM	50	4-70 FMS.	S	O			
ALABINA CERITHIDIOIDES	49	7-50 FMS.	S	O	A	C	
LUCINA AMIANTA	48	4-43 FMS.	S	O	A		
CRASSINELLA LUNULATA	47	4-50 FMS.	S	O			
ABRA AEQUALIS	47	4-40 FMS.	S	O			
LUCINA MULTILINEATA	46	5-43 FMS.	S	O	A		
STROMBUS ALATUS	44	6-50 FMS.	S	O			
NOETIA PONDEROSA	44	0-37 FMS.	S	O			
DIPLODONTA SOROR	44	4-40 FMS.	S	O			
AMPHISSA SPEC.	43	4-70 FMS.	M	S			
LAEVICARDIUM PICTUM	43	4-70 FMS.	S	O			
AMUSIUM POPYRACEUM	41	14-75 FMS.	S				
MACOMA EXTENUATA (?)	41	4-70 FMS.	S	O			
CREPIDULA PLANA	40	4-50 FMS.	S	O			
ANADARA OVALIS	40	0-37 FMS.	S	O			
PITAR CORDATA	40	12-60 FMS.	S	O	A		

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.....TO BE CONTINUED.

NOTES FROM THE LIBRARY COMMITTEE

DURING THE PAST SEVERAL MONTHS , THE FOLLOWING ITEMS HAVE BEEN ADDED TO THE LIBRARY OF OUR SOCIETY:

1. SYMPOSIUM ON RARE AND ENDANGERED MOLLUSKS. THIS IS A RE-PRINT OF THE PAPERS PRESENTED AT THE AMU MEETING IN CORPUS CHRISTI (1968), AND PUBLISHED IN MALACOLOGIA.
2. K. J. BOSS: CRITICAL ESTIMATE OF THE NUMBER OF RECENT MOLLUSCA. OCCASIONAL PAPERS ON MOLLUSKS No. 40.

THE FOLLOWING BOOKS ARE NEW IN THE LIBRARY:

3. A. M. KEEN: SEASHELLS OF TROPICAL WEST AMERICA (NEW EDITION)
4. F. G. WALTON SMITH: ATLANTIC REEF CORALS
5. E. C. RIOS: COASTAL BRAZILIAN SEASHELLS

THE FOLLOWING NEW SUBSCRIPTIONS HAVE BEEN ENTERED:

6. MALACOLOGICAL REVIEW
7. MOLLUSCAN DIGEST (EXCHANGE)
8. SHELL 'N TELL (SAIPAN SHELL CLUB , EXCHANGE)
9. OF SEA AND SHORE

ON ORDER: 10. K. Y. JOHNSTONE: COLLECTING SEASHELLS

IT IS REQUESTED THAT SUGGESTIONS FOR LIBRARY PURCHASES BE FORWARDED TO THE LIBRARY COMMITTEE CHAIRMAN, DR. W. W. SUTOW, FOR CONSIDERATION BY THE COMMITTEE.

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ETHYL ACETATE - AVAILABLE FREE

HAROLD GEIS HAS A SUPPLY OF THIS SHELLCLEANING LIQUID AVAILABLE FOR THOSE WHO WANT TO TRY IT TO CLEAN THEIR SHELLS. BRING A CONTAINER AND A RUBBERHOSE FOR SIPHONING. THE ADDRESS IS 2405 DICKEY PLACE , HOUSTON.

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THE ART OF FAKING SHELLS HAS NOT COMPLETELY DISAPPEARED. LAST SUMMER AT KEY WEST , A SHELL DEALER WAS OBSERVED MAKING KNOBS TO REPLACE BROKEN ONES ON LYROPECTEN NODOSUS. HE CAREFULLY MOLDED AND PAINTED KNOBS ON THE LION'S PAWS HE GOT FROM SHRIMPERS AND DISTRIBUTED THEM TO NORTHERN DEALERS. HIS COMMENT WAS THAT HE WAS RESTORING THEIR BEAUTY, AND THAT HE HAD JUST AS MUCH DEMAND FOR THE SPECIMENS.

SEVERAL YEARS AGO, I SENT SOME SMALL TURRIDS COLLECTED AT THREE LOCATIONS IN TEXAS BAYS TO ANSP, REMARKING ON THE VARIATIONS. A RETURNED VERDICT (LEAVING THE SPECIMENS WITH THE MUSEUM) WAS THAT THE SPECIMENS WERE "CLOSEST TO PYROGOCYTHARA PLICOSA (C.B. ADAMS). NO COMMENT WAS MADE ABOUT THE VARIATIONS I HAD NOTED.

LATER I SENT A COUPLE OF MY SPECIMENS FROM ARANSAS BAY TO MRS. EONA MARCOTT OF ST. PETERSBURG, FLA., AND BACK CAME A QUICK REPLY THAT WHAT I HAD SENT HER WERE PYROGOCYTHARA HEMPHILLI BARTSCH AND REHDER. BOTH THE NAMED SPECIES OCCUR IN FLORIDA GULF GRASSY BAYS.

THIS AUGUST I AGAIN COLLECTED TWO VARIATIONS OF TURRIDS UNDER ROCKS AT ROCKPORT, TEXAS. AGAIN I SAW DIFFERENCES OF COLOR AND OF KNOBBINESS AND SIZE. THIS TIME I SENT ALL I GOT TO DAN STEGER OF TAMPA, FLA. BACK CAME A SEPARATION OF THE SPECIMENS INTO TWO SPECIES: PYROGOCYTHARA PLICOSA AND PYROGOCYTHARA HEMPHILLI. SO WE HAVE BOTH IN TEXAS. I HAVE BEEN MIXING THEM, SENDING OUT A FEW HERE AND THERE AND NOT UNDERSTANDING WHAT I HAD. PYROGOCYTHARA PLICOSA IS CALLED MANGELIA PLICOSA IN ABBOTT'S GUIDE SEASHELLS OF NORTH AMERICA. THIS, I THINK, IS THE OLD GENUS DESIGNATION, AND IT SHOULD BE PYROGOCYTHARA NOW. HOWEVER, THE PICTURE IN THIS GUIDE IS PROBABLY THE BEST TO GO BY. THE ONLY COMMENT I HAVE TO MAKE IS THAT THE SPECIES IN TEXAS IS NOT DARK BROWN AS IT IS IN FLORIDA OR IN THIS PICTURE. IT IS LIGHT TAN AND SOMETIMES ORANGE AND EVEN WHITE. THE BEST PICTURE OF PYROGOCYTHARA HEMPHILLI IN SHELL BOOK LITERATURE IS IN MARINE SHELLS OF THE WESTERN COAST OF FLORIDA BY PERRY AND SCHWENDEL. THIS PHOTO SHOWS THE YELLOWISH BAND NEAR THE SUTURE OF THE LAST WHORL AND DEMONSTRATES THE MORE SMOOTH RIBBING. THE TWO SPECIES ARE CLOSE. THIS LAST NAMED BOOK ALSO HAS A POOR PICTURE OF "MANGILIA PLICOSA". HOWEVER, THE BOOK DESCRIBES THE TWO SPECIES IN DETAIL. DAN STEGER WAS ALSO KIND ENOUGH TO IDENTIFY TWO OF MY CEDAR KEY TURRIDS (SEE SEPTEMBER'S ISSUE) AS KURTZIELLA ATROSTYLA DALL AND CRYOTURRIS FARGOI MCGINTY.

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#### NOVEMBER FIELD TRIP PLANNED

A FIELD TRIP WILL BE HELD ON NOVEMBER 21 AT BOLIVAR PENINSULA. MEMBERS WILL MEET AT 9 A.M. AT THE FERRY LANDING ON THE BOLIVAR SIDE.

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THIS WILL BE YOUR LAST ISSUE OF TEXAS CONCHOLOGIST THIS VOLUME IF YOUR DUES ARE NOT PAID.

DON'T MISS THE PHOTOS COMING ON TURBONILLAS!

Texas  
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# CONCHOLOGIST

VOLUME VIII, No. 4

NOVEMBER-DECEMBER, 1971

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## NOTES & NEWS

WILLIAM H. DALL  
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### MAN'S IMPACT ON TEXAS COAST

DR. HAROLD HARRY WILL TALK ON MAN'S IMPACT ON THE TEXAS COASTAL ENVIRONMENT AT THE NOVEMBER 17 MEETING AT THE HOUSTON MUSEUM OF NATURAL SCIENCE AT 8:00 P.M. HOUSTON CONCHOLOGY SOCIETY MEMBERS ARE REMINDED THAT THIS MEETING IS THE THIRD WEDNESDAY THIS MONTH.

DR. HARRY IS WELL QUALIFIED TO TALK ON THIS SUBJECT. HE IS A MEMBER OF THE FACULTY OF THE BIOLOGY DEPARTMENT OF TEXAS A. & M. UNIVERSITY WHERE HE TEACHES MARINE BIOLOGY AND BIOLOGY OF THE MOLLUSCA.

BRING YOUR FRIENDS. WE ALWAYS WELCOME VISITORS.

### MINUTES OF OCTOBER MEETING

BY FRITZ LANG, SECRETARY

PRESIDENT LLOYD MEISTER CALLED THE MEETING TO ORDER OCTOBER 27 AT 8:15 P.M. THIRTY EIGHT MEMBERS WERE PRESENT.

MINUTES OF PREVIOUS MEETING WERE READ AND APPROVED. A LETTER OF THANKS FROM DR. PULLEY WAS READ. OUR CONTRIBUTION TO THE MUSEUM OF NATURAL SCIENCE WAS APPRECIATED.

TREASURER PAUL HUDSON REPORTED A NEW BALANCE OF \$1671.42.

THREE VISITORS INTRODUCED THEMSELVES AND WERE WELCOMED.

MRS. HOLLIS Q. BOONE ANNOUNCED THAT MEMBERS SHOULD BRING SPECIMEN SHELLS TO THE NOVEMBER MEETING. THESE SHELLS ARE FOR EXCHANGE WITH THE SAIPAN SHELL CLUB, (ERNIE LIBBY, CORRESPONDENT). CLARICE VAN ERP VOLUNTEERED TO DO REMINDER CALLING BEFORE THE MEETING.

MRS. BOONE MADE A MOTION THAT THE HOUSTON CONCHOLOGY SOCIETY CONTRIBUTE \$100.00 TO THE A.M.U. MEETING AT GALVESTON IN JULY, 1972. DR. HELMER ODÉ SECONDED THE MOTION AND IT WAS PASSED BY THE BODY.

SEVERAL MEMBERS DISCUSSED THE LIBRARY FUND, PUBLISHING OF BEACH NOTES, AND PURCHASE OF OTHER BOOKS.

THE PROGRAM WAS TURNED OVER TO MRS. L. N. DEXTER. SHE HAD DIFFERENT ONES TO TEACH SHELL IDENTIFICATION TO SMALL GROUPS AT TABLES. VERY INTERESTING AND INFORMATIVE. SEEMINGLY WELL RECEIVED AND ENJOYED.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### SUPERFAMILY PYRAMIDELLACEA (CONTINUED)

#### THE DIVISIONS ARE:

- 1) TURBONILLAS. FROM THE TEXAS BEACH THE GENERA: CHEMNITZIA, STRIO-TURBONILLA, BESLA AND PYRGISCUS.
- 2) ODOSTOMIAS. FROM THE TEXAS BEACH THE GENERA: MENESTHO WITH SUB-GENUS CHRYSALLIDA, MIRALDA, FARGOA, SALASIELLA, CINGULINA, ODOSTOMIA, EULIMASTOMA AND EVALEA.
- 3) SAYELLAS. FROM THE TEXAS BEACH ONLY THE GENUS SAYELLA.
- 4) PYRAMIDELLAS. FROM THE TEXAS BEACH ONLY THE GENUS LONCHAEUS.
- 5) THE GENUS PERISTICHIA MAY BELONG IN THE MATHILDIDAE, A FAMILY NOT USUALLY PLACED IN THE PYRAMIDELLIDS.

THE QUESTION WHETHER ALL THESE GROUPINGS SHOULD BE CLASSIFIED IN A SINGLE FAMILY OR NOT AND WHY SOME OTHER GENERA (RETUSA) ARE NOT CLASSIFIED WITH THE PYRAMIDELLIDS, CANNOT BE ANSWERED BY US. OUR EMPHASIS IS HERE ONLY ON THE DELINEATION OF, IN OUR OPINION, SEPARABLE SPECIES RATHER THAN ON THE SOLUTION OF THE MAIN PROBLEMS IN THIS GROUP. THE RESPONSIBILITY FOR THE TAXONOMIC OPINIONS EXPRESSED IN THE FOLLOWING BELONGS TO ONE OF US (ODÉ).

TO DOCUMENT OUR OPINIONS PROPERLY, PHOTOGRAPHS OF MOST OF THE SPECIES DISCUSSED WILL BE PUBLISHED. THESE SPECIMENS WILL BE DEPOSITED IN THE HOUSTON MUSEUM OF NATURAL SCIENCE, SO THAT THEY WILL BE AVAILABLE FOR FURTHER STUDY. ALL SPECIMENS WERE COLLECTED BY THE AUTHORS IN THE BAYS AND ON THE BEACHES OF THE TEXAS COAST.

#### 2) THE GENERA IN THE TURBONILLA COMPLEX

IT WILL REQUIRE A FAR MORE TIME-CONSUMING STUDY THAN WE ARE ABLE TO MAKE TO STRAIGHTEN OUT THE UTTER CONFUSION IN TAXONOMY WITHIN THIS COMPLEX OF SPECIES. WE SHALL MERELY ATTEMPT TO SORT OUT THE SPECIES FOUND ON TEXAS BEACHES FOR THE MAJORITY OF WHICH THE NAMES REMAIN A MYSTERY TO US.



SPECIES OF TURBONILLA HAVE BEEN DESCRIBED SINCE THE EARLY 19TH CENTURY. THE FIRST AUTHOR TO BE FULLY AWARE THAT THIS GROUP OFFERED VERY SERIOUS DIFFICULTIES WAS DALL. HIS DISCUSSION AND REMARKS CONCERNING TURBONILLA ARE STILL AMONG THE clearest available to us and much of our interpretations are based on remarks in various of DALL'S PAPERS. PRECEDING DALL'S WORK A NUMBER OF SPECIES HAD BEEN DESCRIBED FROM NEW ENGLAND AND SOME FROM JAMAICA BY C. B. ADAMS, WHILE HOLMES HAD NAMED SEVERAL FOSSIL SHELLS FROM THE CAROLINA'S, SOME OF WHICH DALL PLACED IN SYNONYMY WITH RECENT SPECIES.

IT IS UNFORTUNATE THAT MANY OF THE ORIGINAL DESCRIPTIONS AND FIGURES MUST BE CONSIDERED INADEQUATE FOR THE IDENTIFICATION OF OUR MATERIAL. LATER INVESTIGATORS WERE APPARENTLY OF THE SAME OPINION -- PROBABLY NO TYPES ARE AVAILABLE -- AND THE RESULT IS THAT A NUMBER OF THE EARLIER NAMED SPECIES SEEM, AS IT WERE, TO HAVE EVAPORATED INTO THIN AIR. AFTER A LISTING BY DALL IN 1884 (BULL 24, U.S.G.S.), BUSH HAS SUMMARIZED THE KNOWLEDGE ABOUT THE SEMITROPICAL SPECIES OF TURBONILLA AS IT EXISTED ABOUT THE TURN OF THE CENTURY. UNFORTUNATELY, HER WORK DID NOT SHED MUCH LIGHT ON THE RELATIONSHIP BETWEEN RECENT SPECIES AND THE FOSSIL ONES OF HOLMES. IN IT WAS STARTED THE EXTREME RELIANCE ON STRUCTURAL DETAIL, WHICH, FOR ALL WE KNOW, MAY BE SIGNIFICANT, AND WHICH BECAME SO PROMINENT IN THE WORKS OF BARTSCH. THIS AUTHOR SUMMARIZED THE PYRAMIDELLIDS OF THE NEW ENGLAND COAST, AND DESCRIBED MANY NEW SPECIES OF TURBONILLA FROM THE ATLANTIC COAST.

WHEREAS DALL (T.W.I.S., 1892) WAS OF THE OPINION THAT TURBONILLA SPECIES RANGED FROM THE MIOCENE INTO THE RECENT, BARTSCH CONSIDERED SPECIES TO BE FAR MORE RESTRICTED IN A TEMPORAL SENSE. ALL HIS PLIOCENE SHELLS FROM THE ST. PETERSBURG, FLORIDA PLIOCENE ARE NAME AS "NEW" SPECIES. AS WILL BE SEEN FOR THE ODOSTOMIAS, THE ONLY FAUNA PHOTOGRAPHICALLY DOCUMENTED WHICH RESEMBLES THE RECENT TEXAS FAUNA CLOSELY IS THAT ST. PETERSBURG FAUNA. APPARENTLY THE MANY TURBONILLAS PERSENT IN THAT FAUNA DID STRIKE BARTSCH AS BEING DIFFERENT FROM THE TURBONILLAS LIVING AT PRESENT IN THAT AREA. WE HAVE EXPERIENCED SIMILAR DIFFICULTIES WITH TEXAS BEACH MATERIAL. OUR SHELLS CAN BE CORRELATED REASONABLY WELL WITH ONE OR ANOTHER OF THE COUNTLESS FORMS DESCRIBED AND ILLUSTRATED BY BARTSCH FROM THE PLIOCENE OF FLORIDA, BUT OFTEN SEEM TO BE DIFFERENT IN SOME RESPECT FROM THOSE DESCRIBED FROM THE RECENT FAUNA OF THE WESTERN ATLANTIC. SOME PROBLEMS WILL EVENTUALLY BE SOLVED WHEN OUR MATERIAL IS COMPARED WITH TYPES IN VARIOUS COLLECTIONS. SO FAR THIS HAS NOT BEEN DONE. IN OUR OPINION, THE MAJORITY OF BARTSCH' NEW SPECIES IN THE GENERA CHEMINTZIA AND PYRGISCUS FROM THE FLORIDA PLIOCENE REPRESENT MERELY VARIATIONS OF A FEW VARIABLE SPECIES SOME OF WHICH STILL MAY BE LIVING TODAY. FOR THAT REASON WE HAVE AVOIDED IDENTIFYING OUR SHELLS WITH BARTSCH' SPECIES. ALSO WE HAVE FOLLOWED DALL IN AVOIDING THE USE OF HOLMES' NAMES, SOME OF WHICH MAY BE SYNONYMOUS WITH RECENT SPECIES. THE CLOSE RESEMBLANCE OF SOME TEXAS MATERIAL TO SPECIES DESCRIBED BY EARLY WORKERS AND BY BARTSCH FROM NEW ENGLAND AND VIRGINIA HAS FURTHER ADDED TO OUR CONFUSION. WE HAVE DEEMED IT PRUDENT TO AVOID ALSO THESE NAMES, IN WHICH WE MAY BE MISTAKEN. APART FROM LITERATURE SOME INFORMATION WAS OBTAINED BY COMPARISON OF A FEW TEXAS SHELLS WITH TYPE MATERIAL IN THE NATIONAL MUSEUM IN WASHINGTON AND AT THE ACADEMY OF NATURAL SCIENCE OF PHILADELPHIA AND AT THE MUSEUM OF COMPARATIVE ZOOLOGY AT HARVARD.

IT IS CLEAR TO US THAT TEXAS BEACH MATERIAL MUST BE CONSIDERED TOGETHER WITH THE OFFSHORE TEXAS MATERIAL IN ORDER TO ARRIVE AT A SATISFACTORY SEPARATION. IN THE OFFSHORE MATERIAL THE NUMBER OF DIFFERENT LOOKING SHELLS IS VERY LARGE (ABOUT 50 "SPECIES").



BESLA ELEGANS ORBIGNY, 1842  
2.46 MM., MATAGORDA BEACH,  
NOVEMBER 5, 1967  
BEACH SPECIMEN FROM ODE  
COLLECTION.



STRIOTURBONILLA SP. A.  
4.28 MM., GALVESTON BOLIVAR  
PASS, FEBRUARY 10, 1968  
ALIVE IN TRAILS, FROM BOONE  
COLLECTION.

PHOTOS BY FRANK VAN MORKHOVEN

AN EXTREMELY INTERESTING FEATURE OF TURBONILLAS IS THE VERY COMMON OCCURRENCE OF SERIOUS INJURY OF THE SHELL. QUITE OFTEN THE SHELLS APPEAR TO HAVE BEEN CRUSHED; LATER IT APPARENTLY HEALED AND CONTINUED TO GROW AT THE SAME OR DIFFERENT ANGLE. WE HAVE SEEN SPECIMENS FROM OFFSHORE GALVESTON IN WHICH THE ANGLE OF THE SPIRE CHANGED AT LEAST 15 DEGREES AND A PARTLY DOUBLE WINDING WAS PRODUCED. IT IS POSSIBLE THAT THIS COMMON TYPE OF INJURY IS CAUSED BY THE FEEDING OF THE ANIMAL ON BIVALVE MOLLUSKS IN THE OPENED STAGE AND THAT THE SUDDEN CLOSURE OF THE VALVES CRUSHES THE LIP OF THE PARASITIC TURBONILLA. A LARGE NUMBER OF PHOTOGRAPHS IN BARTSCH'S PUBLICATION ON THE PLIOCENE PYRAMIDELLIDS SHOW THIS TYPE OF INJURY.

THE TURBONILLAS OF TEXAS ARE EASILY SPLIT INTO TWO QUITE DIFFERENT COMPLEXES. ONE OF THESE CONTAINS SHELLS WITH A HELICAL NUCLEUS, HAVE A PURE WHITE COLOR AND THE INTERCOSTAL SPACES ARE WITHOUT SPIRAL SCULPTURE DISCERNIBLE BY THE UNAIDED EYE. THE SECOND COMPLEX COMPRISES SHELLS WITH A MUCH FLATTER DISC-SHAPED NUCLEUS, THE SHELLS OFTEN SHOW COLOR PATTERNS AND QUITE OFTEN ARE CLEARLY SPIRALLY STRIATED. THE FIRST COMPLEX WE HAVE DESIGNATED AS THE CHEMNITZIA COMPLEX AND THE SECOND ONE AS THE PYRGISCUS COMPLEX, BUT WE CANNOT JUSTIFY THESE NAMES TAXONOMICALLY.

PYRGISCUS HAS BEEN CHOSEN RATHER ARBITRARILY AS NONE OF THE SUBGENERA PYRGISCUS, MORMULA, MUMIOLA, PYRGOSTELIS, PYRGOLAMPROS, ETC. TO US APPEARS TO BE CLEARLY DEFINED.

3) THE CHEMNITZIA COMPLEX

TOGETHER WITH THE GENUS CHEMNITZIA WE CLASSIFY IN THIS COMPLEX OF SPECIES THE GENERA STRIOTURBONILLA AND BESLA. THE GENUS TURBONILLA DOES NOT OCCUR IN TEXAS BUT SEEMS TO BE RESTRICTED IN THE WESTERN ATLANTIC TO THE NEW ENGLAND COAST. (T. BUSHIANA, NIVEA AND STRICTA), IN OUR OPINION REFERENCES TO T. NIVEA FOR TEXAS MUST BE CONSIDERED TO BE IN ERROR. BESLA IS, IN TEXAS, REPRESENTED BY A SINGLE SPECIES, WHICH IS ESSENTIALLY A CHEMNITZIA WITH RATHER INFLATED WHORLS, DEEP SUTURE AND STRONG SPIRALS BELOW THE PERIPHERY. THE GENUS WAS CREATED BY BARTSCH FOR SOME SPECIES FROM THE PACIFIC COAST OF THE U.S.A., AND APPEARS TO US TO FIT THE CHARACTERISTICS OF T. ELEGANS (AS FIGURED BY ABBOTT AND WARMKE) SUFFICIENTLY CLOSE TO PLACE THIS SPECIES IN IT.



STRIOTURBONILLA SP. B.  
3.84 MM., PORT ARANSAS CAUSEWAY  
MARCH, 1957  
BEACH SPECIMEN FROM ODÉ COLLECTION



CHEMNITZIA UNILIRATA BUSH, 1899  
2.69 MM., PORT ARANSAS CAUSEWAY  
JULY 1, 1961  
BEACH SPECIMEN FROM ODÉ COLLECTION

PHOTOS BY FRANK VAN MORKHOVEN

THE MAJORITY OF BEACH SPECIMENS IN TEXAS ARE CHEMNITZIA'S. THESE ARE GLASSY, SOMETIMES BLUISH WHITE WHEN ALIVE, DULL WHITE WHEN DEAD, LONG, SLENDER SHELLS, QUITE VARIABLE IN SIZE AND SHAPE, WHOSE IDENTIFICATION PRESENTS INSURMOUNTABLE DIFFICULTIES TO US. CHEMNITZIA AND STRIOTURBONILLA ARE IN OUR SCHEME SEPARATED ON THE FOLLOWING CHARACTERS: CHEMNITZIA HAS A SMOOTH WHITE APPEARANCE WITHOUT SPIRAL STRIAE, WHILE STRIOTURBONILLA IS, UNDER THE MICROSCOPE, CLEARLY HORIZONTALLY STRIATED BY NUMEROUS EXCEEDINGLY FINE INCISED SPIRALS, FORMING AS IT WERE A DIFFRACTION GRATING. ALSO THE SHAPE OF THE SHELL IS DIFFERENT. CHEMNITZIA HAS A CONICAL OR NEEDLE-SHAPED OUTLINE WITH A RELATIVELY SMALL BODY WHORL, WHILE STRIOTURBONILLA IS MORE SHOULDERED AND HAS A RELATIVELY LARGER BODY WHORL. THE SPIRAL STRIATIONS WHICH IN WORN BEACH MATERIAL ARE SOMETIMES LOST MAY BY ITSELF NOT BE SUFFICIENT CRITERION OF SEPARATION. CHEMNITZIA MAY HAVE A RIDGED OR BANDED PATTERN OF SPIRALS. FOR INSTANCE, C. UNILARATA HAS A SINGLE CHORDLIKE SPIRAL BELOW THE SUTURE, BUT THE SHELL LACKS THE FINE LINES OF STRIOTURBONILLA. WE ACCEPT AS STRIOTURBONILLA ONLY THOSE SPECIES WHICH HAVE A PATTERN OF VERY CLOSE AND REGULARLY SPACED EXCEEDINGLY THIN LINES AS IN A DIFFRACTION GRATING. IN TEXAS THE SLENDER CONICAL FORMS LIKE T. DALLI AND T. HEMPHILLI ARE NEVER STRIATED, BUT TWO DIFFERENT SPECIES ARE, WHICH ARE SHORTER AND SOMEWHAT SHOULDERED. FOR THIS SHAPE WE REFER TO THE FIGURES OF T. CURTA DALL IN M. SMITH'S BOOK AND OF T. HEMPHILLI BUSH IN PERRY AND SCHWENDEL, BOTH OF WHICH COULD BE MISIDENTIFIED, BUT REPRESENT STRIOTURBONILLA IN THE SENSE AS DEFINED ABOVE. IT SHOULD BE NOTED HERE THAT DALL AND BARTSCH (1911) IN A PAPER ON BERMUDA SHELLS USED STRIOTURBONILLA IN QUITE A DIFFERENT SENSE AND HARDLY IN ACCORD WITH AN EARLIER KEY GIVEN IN THEIR MONOGRAPH ON PACIFIC TURBONILLA'S, T. PEILA AND T. HAYCOCKI BELONG IN WHAT WE CONSIDER THE PYRGISCUS COMPLEX AND ARE NOT STRIOTURBONILLA AS WE DEFINED THAT GENUS.

THE TEXAS MATERIAL OF CHEMNITZIA PRESENTS A BEWILDERING VARIETY OF SHAPES. SOME LARGE AND MATURE SHELLS DEVELOP INTERNAL LIRAE ON THE INNER SIDE OF THE OUTER LIP WHICH HAVE BEEN REPORTED IN THE LITERATURE AS A "TOOTH" WHEN VISIBLE IN CROSS SECTION OF A BROKEN APERTURE (C. DALLI). THERE EXIST SURPRISING DIFFERENCES IN SIZE SO THAT OFTEN SHELLS OF THE SAME NUMBER OF WHORLS DIFFER CONSIDERABLY IN LENGTH. IN SOME SPECIMENS THE APICAL ANGLE INITIALLY IS LARGE, BUT DURING GROWTH THE SHELL BECOMES MORE SLENDER (C. ABRUPTA). IN SOME SPECIMENS THE RIBS ARE CLOSELY SPACED, IN OTHERS WIDELY, IN SOME THE SLANT OF THE RIBLETS IS CONSIDERABLE (C. INCLINATA), IN OTHERS NEGLIGIBLE AND IN STILL OTHERS THE SLANT VARIES DURING GROWTH SO THAT IT BECOMES LESS ON THE BODY WHORLS. SOME SHELLS ARE SLENDER WITH INFLATED WHORLS, OTHERS ARE INITIALLY SHORT AND STUBBY AND BETWEEN MANY THERE EXIST INTERMEDIATE FORMS. IN SHORT, WE BELIEVE THAT THE TEXAS MATERIAL, ALTHOUGH IT COULD BE CLASSIFIED UNDER A LARGE NUMBER OF SPECIES ESSENTIALLY REPRESENTS NOT MORE THAN FIVE SPECIES. THE VARIETY OF SHAPES IN THIS COMPLEX IS WELL-ILLUSTRATED BY THE FIGURES OF THE MANY CHEMNITZIA SPECIES BY BARTSCH FROM THE PLIOCENE OF FLORIDA. MOST OF THESE "SPECIES" CAN BE MATCHED ALMOST SHELL FOR SHELL BY TEXAS MATERIAL. DR. H. HARRY WAS PROBABLY CORRECT WHEN HE REPORTED TURBONILLA AEQUALIS CONRAD FOR GALVESTON. THIS SPECIES TOGETHER WITH T. LEVIS C. B. ADAMS 1850, T. PUSILLA C. B. ADAMS 1850 AND T. VIRGATA DALL, SEEM TO HAVE BEEN DROPPED ENTIRELY FROM LATER PUBLICATIONS ON THE ATLANTIC FAUNAS, EVEN THOUGH DALL REPORTS THE FOLLOWING RANGES FOR LIVE MATERIAL (T.W.I.S. 1892):

T. PUSILLA: CAPE HATTERAS TO HAITI IN 3-63 FATHOMS.

T. VIRGATA: NORTH CAROLINA TO FLORIDA IN 12-80 FATHOMS.

.....TO BE CONTINUED

FAMILY PUPILLIDAE (CONTINUED)

- 50. VERTIGO (VERTIGO) RUGOSULA (V. STERKI) AUSTR., TEX.
- 51. VERTIGO (VERTILLARIA) OSCARIANA V. STERKI, AUSTR.
- 52. PUPISOMA DIOSCORICOLA (C. B. ADAMS) AUSTR., TEX., TAM.

ORDER BASOMMATOPHORA

FAMILY CARYCHIIDAE

- 53. CARYCHIUM EXILE (H. C. LEA) AUSTR., TEX.

SUBCLASS PROSOBRANCHIA

FAMILY HELICINIDAE

- 54. HELICINA (OLIGYRA) ORBICULATA TROPICA L. PFEIFFER, AUSTR., TEX., TAM.

SUMMARY AND CONCLUSIONS

THE DISTRIBUTION OF LAND SNAILS CONFIRMS THE EXISTENCE ALONG THE TEXAS COAST OF THREE WELL MARKED ZOOGEOGRAPHIC PROVINCES WHICH SHOW A HIGH DEGREE OF CORRELATION WITH THE AUSTRORIPARIAN, TEXAN AND TAMAULIPAN PROVINCES OF DICE (1943) AND BLAIR (1950). ALL OF THE EVIDENCE CONFIRMS THE POSITION OF THE BOUNDARY BETWEEN THE AUSTRORIPARIAN AND THE TEXAN PROVINCES AS BEING LOCATED IN THE VICINITY OF GALVESTON BAY. THE BOUNDARY BETWEEN THE TEXAN AND THE TAMAULIPAN PROVINCES WAS PLACED BY DICE, ON THE BASIS OF PLANT DISTRIBUTION, NEAR CORPUS CHRISTI BAY; BUT BLAIR, A STUDENT OF VERTEBRATE DISTRIBUTION PATTERNS, LOCATED THIS BOUNDARY EIGHTY MILES TO THE NORTHWARD NEAR MATAGORDA BAY. THE DISTRIBUTION OF LAND SNAILS INDICATES THAT THE REGION NEAR CORPUS CHRISTI BAY IS THE AREA IN WHICH MOST OF THE SPECIES TERMINATE THEIR RANGES, AND SHOULD THEREFORE BE REGARDED AS THE BOUNDARY BETWEEN THE TEXAN AND TAMAULIPAN PROVINCES.

THE FOLLOWING PARAGRAPHS ARE BRIEF DESCRIPTIONS OF THE THREE ZOOGEOGRAPHIC PROVINCES THAT OCCUR ALONG THE TEXAS COAST:

AUSTRORIPARIAN PROVINCE

THE AUSTRORIPARIAN PROVINCE INCLUDES MOST OF THE SOUTHEASTERN PART OF THE UNITED STATES. IT EXTENDS FROM VIRGINIA SOUTHWARD ALONG THE ATLANTIC COAST AND WESTWARD ALONG THE GULF COAST TO TEXAS. THE WESTERN BOUNDARY OF THIS PROVINCE IS A LINE NORTHWARD FROM HARRIS COUNTY TO RED RIVER COUNTY IN TEXAS, AND ACROSS THE RED RIVER INTO SOUTHEASTERN OKLAHOMA.

THE AVERAGE SLOPE OF THE TERRAIN IN THIS AREA IS FIVE FEET PER MILE, BUT IN MOST OF THE AREA COVERED BY THIS STUDY IT IS ONLY ONE FOOT PER MILE, OR EVEN LESS. THE AVERAGE RAINFALL VARIES FROM FORTY-FIVE TO FIFTY-FIVE INCHES PER YEAR, AND THE AVERAGE MONTHLY TEMPERATURE VARIES FROM 65° TO 72° F. UNDER THESE CONDITIONS, A PEDALFER SOIL IS FORMED, AND IN UNDISTURBED AREAS THE CLIMAX VEGETATION IS A MIXED HARDWOOD AND PINE FOREST.

CHARACTERISTIC PLANTS:

- |                                |                   |
|--------------------------------|-------------------|
| 1. <u>MAGNOLIA GRANDIFLORA</u> | SOUTHERN MAGNOLIA |
| 2. <u>PINUS PALUSTRIS</u>      | LONGLEAF PINE     |
| 3. <u>PINUS ECHINATA</u>       | SHORTLEAF PINE    |
| 4. <u>QUERCUS MARILANDICA</u>  | BLACKJACK OAK     |
| 5. <u>SABAL MINOR</u>          | PALMETTO          |

CHARACTERISTIC VERTEBRATES:

- |                                   |                        |
|-----------------------------------|------------------------|
| 1. <u>DASYPTERUS FLORIDANUS</u>   | FLORIDA YELLOW BAT     |
| 2. <u>REITHRODONTOMYS HUMILIS</u> | HARVEST MOUSE          |
| 3. <u>PEROMYSCUS GOSSYPINUS</u>   | COTTON MOUSE           |
| 4. <u>PEROMYSCUS NUTTALLI</u>     | NORTHERN GOLDEN MOUSE  |
| 5. <u>MICROTUS LUDOVICIANUS</u>   | LOUISIANA MEADOW MOUSE |
| 6. <u>CARPHOPIUS AMOENA</u>       | WORM SNAKE             |
| 7. <u>NATRIX RIGIDA</u>           | GLOSSY WATER SNAKE     |
| 8. <u>AMPHIUMA MEANS</u>          | TWO-TOED AMPHIUMA      |
| 9. <u>AMBYSTOMA MACULATUM</u>     | SPOTTED SALAMANDER     |
| 10. <u>AMBYSTOMA OPACUM</u>       | MARBLED SALAMANDER     |
| 11. <u>HYLA CRUCIFER</u>          | SPRING PEEPER          |
| 12. <u>RANA PALUSTRIS</u>         | PICKEREL FROG          |

CHARACTERISTIC LAND SNAILS:

1. TRIODOPSIS VULTUOSA
2. HAPLOTREMA CONCAVUM
3. ANGUISPIRA ALTERNATA CRASSA
4. VENTRIDENS DEMISSUS
5. VENTRIDENS INTERTEXTUS
6. STRIATURA MERIDIONALIS
7. GASTROCOPTA RUPICOLA
8. VERTIGO OSCARIANA

TEXAN PROVINCE

THE TEXAN PROVINCE EXTENDS NORTHWARD FROM THE CENTRAL PORTION OF THE TEXAS COAST INTO OKLAHOMA AND SOUTHERN KANSAS. IT IS BOUNDED ON THE EAST IN TEXAS BY THE AUSTRORIPARIAN PROVINCE AND IN THE SOUTHWEST BY THE TAMAULIPAN PROVINCE. IN CENTRAL TEXAS THE TEXAN PROVINCE IS BOUNDED ON THE WEST BY THE BALCONIAN PROVINCE AND IN NORTH TEXAS BY THE KANSAN PROVINCE.

THE AVERAGE RAINFALL OF THE TEXAN PROVINCE VARIES FROM SIXTEEN TO FORTY-FIVE INCHES PER YEAR. AVERAGE MAXIMUM TEMPERATURE IN SUMMER IS NEAR 100°F, AND THE AVERAGE MINIMUM OF WINTER RANGES FROM 25°F IN THE SOUTH TO 0°F IN THE NORTH. THORNTHWAITTE (1948) CLASSIFIED THE REGION AS MOIST SUBHUMID WITH FREQUENT YEARS IN WHICH RAINFALL WAS BARELY SUFFICIENT TO MAINTAIN PLANT GROWTH. THE CLIMAX FORMATION OVER MOST OF THE TEXAN PROVINCE IS TALL GRASS, PRAIRIE OR OPEN SAVANNAH. TREES ARE LOCALLY ABUNDANT ALONG THE RIVER VALLEYS, AND IN THESE ASSOCIATIONS THERE ARE OCCASIONALLY OUTLIER POPULATIONS OF AUSTRORIPARIAN SPECIES.

CHARACTERISTIC PLANTS:

- |                              |          |
|------------------------------|----------|
| 1. <u>QUERCUS STELLATA</u>   | POST OAK |
| 2. <u>QUERCUS VIRGINIANA</u> | LIVE OAK |
| 3. <u>ACACIA FARNESIANA</u>  | HUISACHE |
| 4. <u>PROSOPIA JULIFLORA</u> | MESQUITE |

5. CARYA BUCKLEYI

TEXAS HICKORY

CHARACTERISTIC VERTEBRATES:

- |                                     |                        |
|-------------------------------------|------------------------|
| 1. <u>DIDELPHIS VIRGINIANA</u>      | COMMON OPOSSUM         |
| 2. <u>SIGMODON HISPIDUS</u>         | COTTON RAT             |
| 3. <u>CITELLUS TRIDECIMLINEATUS</u> | GROUND SQUIRREL        |
| 4. <u>DASYPUS NOVEMCINCTUS</u>      | ARMADILLO              |
| 5. <u>TERRAPENE ORNATA</u>          | ORNATE BOX TURTLE      |
| 6. <u>THRYNOSOMA CORNUTUM</u>       | HORNED TOAD            |
| 7. <u>PSEUDACRIS STRECKERI</u>      | STRECKER'S CHORUS FROG |

CHARACTERISTIC LAND SNAILS:

1. RETINELLA ROEMER
2. BULIMULUS DEALBATUS MOOREANUS
3. POLYGYRA MOOREANA AND P. MOOREANA THOLUS
4. ANGUISPIRA ALTERNATA STRONGYLODES
5. EUGLANDINA SINGLEYANA

TAMAULIPAN PROVINCE

THE TAMAULIPAN PROVINCE INCLUDES MOST OF TAMAULIPAS AND THE NORTHERN PORTION OF NUEVO LEON IN NORTHEASTERN MEXICO. IN TEXAS THIS PROVINCE INCLUDES ALL OF THE STATE SOUTH OF A LINE EXTENDING DUE WESTWARD FROM CORPUS CHRISTI TO THE RIO GRANDE.

THE AVERAGE TEMPERATURE IS HIGH THROUGHOUT THE YEAR, AND FROST IS PRACTICALLY ABSENT. THE AVERAGE YEARLY RAINFALL IS TWENTY TO THIRTY INCHES, BUT UNEVENLY DISTRIBUTED SO THAT MOST OF THIS AMOUNT FALLS IN THE WINTER AND EARLY SPRING. MUCH OF THE SOIL IN THE TAMAULIPAN PROVINCE IS POROUS AND DOES NOT RETAIN MOISTURE, SO THAT EVEN THOUGH THERE IS A MODERATE AMOUNT OF RAINFALL, THE VEGETATION PRODUCED IS USUALLY A DENSE GROWTH OF THORNY SHRUBS WITH NUMEROUS CACTI.

CHARACTERISTIC PLANTS:

- |                                    |               |
|------------------------------------|---------------|
| 1. <u>PROSOPIA JULIFLORA</u>       | MESQUITE      |
| 2. <u>ACACIA SP.</u>               | HUISACHE      |
| 3. <u>MIMOSA BUNCIFERAE</u>        | MIMOSA        |
| 4. <u>CELTIS PALLIDA</u>           | GRANJENO      |
| 5. <u>PORLIERIA ANGUSTIFOLIA</u>   | LIGNUM        |
| 6. <u>LEUCOPHYLLUM FRUTESCENS</u>  | CENIZO        |
| 7. <u>OPUNTIA LINDHEIMERI</u>      | PRICKLEY PEAR |
| 8. <u>QUERCUS VIRGINIANA</u>       | LIVE OAK      |
| 9. <u>PARKINSONIA ACULEATA</u>     | RATOMA        |
| 10. <u>SIDERCARPOS FLEXICAULIS</u> | TEXAS EBONY   |
| 11. <u>SABAL MEXICANA</u>          | PALM          |

CHARACTERISTIC VERTEBRATES:

- |                                       |                            |
|---------------------------------------|----------------------------|
| 1. <u>DASYPTERUS INTERMEDIUS</u>      | TEXAS YELLOW BAT           |
| 2. <u>DASYPUS MESAMERICANA</u>        | MEXICAN OPOSSUM            |
| 3. <u>CONEPATUS LEUCONOTUS</u>        | TAMAULIPAN ROOTER SKUNK    |
| 4. <u>GOPHERUS BERLANDIERI</u>        | GOPHER TURTLE              |
| 5. <u>CROTAPHYTUS RETICULATUS</u>     | RETICULATE COLLARD LIZARD  |
| 6. <u>PICIMIA OLIVACEA</u>            | MEXICAN HOOKED-NOSED SNAKE |
| 7. <u>NOTHOPTHALAMUS MERIDIONALIS</u> | BLACK SPOTTED NEWT         |

## CHARACTERISTIC LAND SNAILS:

1. BULIMULUS ALTERNATUS
2. BULIMULUS DEALBATUS RAGSDALEI
3. EUGLANDINA TEXASIANA
4. POLYGYRA TEXASIANA POLITA
5. PRATICOLELLA GRISEOLA
6. THYSANOPHORA HORNII
7. GUPPYA GUNDLACHII

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.....TO BE CONTINUED



A LIST OF THE MOST OFTEN DREDGED MOLLUSKS ON THE SHELF  
 IN THE NORTH WEST GULF OF MEXICO. (CONTINUED FROM OCTOBER  
 ISSUE).

BY H. ODE

36.	TELLINA NITENS	40	4-40 FMS.	S	O			
37.	VOLVULELLA PERSIMILIS	39	8-167 FMS.	S	O			
38.	PYRUNCULUS CAELATUS	39	7 1/2 -75 FMS.	S	O	A	C	
39.	PANDORA INFLATA	39	8-56 1/2 FMS.	S	O			
40.	ATLANTA PERONI	38	4-167 FMS.	S	M			
41.	AEQUIPECTEN MUSCOSUS	38	9-50 FMS.	S	O	A		
41A	EPITONIUM NOVANGLIAE	37	6 1/2-70 FMS.	S				
42.	POLYSTIRA ALBIDA	37	20-85 FMS.	S				
43.	ANADARA LIENOSA FLORIDANA	37	8-56 1/2 FMS.	S	O			
44.	VESICOMYA PILULA	37	7 1/2-167 FMS.	S	M			
45.	CREPIDULA FORNICATA	36	4-40 FMS.	S	O			
46.	CHIONE GRUS	36	7-43 FMS.	S	O	A		
47.	TELLINA SQUAMIFERA	36	9-110 FMS.	S	O	A		
48.	CAECUM "COOPERI"	35	4-40 FMS.	S	O			
49.	TEINOSTOMA PARVICALLUS	35	0-140 FMS.	B	S	A		
50.	THAIS HAEMOSTOMA	34	0-50 FMS.	S	O	C		
51.	TURBONILLA CONRADI?	34	7 1/2-110 FMS.	S	O			
52.	NUCULANA SP. F	34	20-75 FMS.	S	O			
53.	YOLDIA SOLENOIDES	34	20-170 FMS.	S	M	O		
54.	PHALIUM GRANULATUM	33	4-75 FMS.	S	O			
55.	MUREX FULVESCENS	33	0-110 FMS.	S	O			
56.	DISTORSIO CLATHRATA	33	4-75 FMS.	S				
57.	OLIVA SAYANA	33	0-40 FMS.	S	O			
58.	ACTEON PUNCTOSTRIATUS	33	0-37 FMS.	B	S	O	C	
59.	CAVOLINA UNCINATA	33	11-500 FMS.	S	M	C	A	O
60.	CRASSINELLA LUNULATA	33	8 1/2-70 FMS.	S	O	A		
61.	ARCHITECTONIA NOBILIS	32	0-50 FMS.	B	S			
62.	KURTZIELLA SP. A	32	8-70 FMS.	S				
63.	NISO INTERRUPTA	32	4-75 FMS.	S	O			
64.	DOSINIA ELEGANS	32	4-32 FMS.	S	O	A	C	
65.	TELLINA SYBARITICA	32	4-50 FMS.	S	O			
66.	ROCELLARIA SP. A	32	4-43 FMS.	S	O	A	C	
67.	CALYPTRAEA CENTRALIS	31	6-40 FMS.	S	O			
68.	CRUCIBULUM AURICULA	31	12-50 FMS.	S				
69.	NASSARIUS ACUTUS	31	0-25 FMS.	B	S	O		
70.	ANACHIS OBESA	31	4-32 FMS.	S	O			
71.	LONCHAEUS CRENULATUS	31	7 1/2-28 FMS.	S	O			
72.	GREGARIELLA OPIFEX	31	7-43 FMS.	S	O	A	C	
73.	EUCRASSATELLA SPECIOSA	31	13 1/2-50 FMS.	S				
74.	SEMELE BELLASTRIATA	31	4-32 FMS.	S	O			
75.	SOLECURTUS CUMINGIANUS	31	9-70 FMS.	S	O	A		
76.	CYCLOSTREMISCUS PENTAGONUS	30	4-50 FMS.	S	O			
77.	PECTEN RAVENELI	30	6-40 FMS.	S	O			
78.	LAEVICARDIUM LAEVIGATUM	30	9-50 FMS.	S	O	A		
79.	ODOSTOMIA CANALICULATA	29	0-140 FMS.	S	O	A		
80.	CYCLOPECTEN NANUS	29	13 1/2-450 FMS.	S	O			
81.	MACROCALLISTA MACULATA	29	6-25 FMS.	S	O			
82.	CANTHARUS CANCELLARIUS	28	0-25 FMS.	B	S	O		
83.	KURTZIELLA SP. B.	28	7 1/2-60 FMS.	S				

84.	TURBONILLA SP. X	28	7 1/2-32 FMS.	S					
85.	CAECUM BIPARTITUM	27	4-40 FMS.	S	O				
86.	NANNODIELLA MELANITICA	27	8-140 FMS.	S	O				
87.	DIACRIA QUADRIDENTATA	27	13-500 FMS.	A	C	M	O	S	
88.	CHIONE INTAPURPUREA	27	4-30 FMS.	S	O				
89.	CUSPIDARIA GRANULATA	27	15-110 FMS.	S	O				
90.	TRIPHORA NIGROCINCTA	26	5-40 FMS.	S	O	C	A		
91.	MITRELLA DUCLOSIANA?	26	6-32 FMS.	S	O	C			
92.	FASCIOLARIA HUNTERIA	26	4-50 FMS.	S	O				
93.	TURBONILLA INTERRUPTA	26	0-40 FMS.	S					
94.	NUCULANA ACUTA	26	5-25 FMS.	S	O				
95.	MODIOLUS AMERICANUS	26	8-110 FMS.	S					
96.	CORBULA SWIFTIANA	26	5-43 FMS.	S	O				
97.	ANACHIS TRANSLIRATA	25	4-32 FMS.	S					
98.	KURTZIELLA LIMONITELLA	25	7 1/2-37 FMS.	S	O				
99.	RETUSA SP. A.	25	9-50 FMS.	S					
100.	THYASIRA TRISINUATA	25	7 1/2-70 FMS.	S					
101.	PITAR SP. A	25	5-40 FMS.	S	O	C			
102.	CYCLINELLA TENUIS	25	4-30 FMS.	S	O				
103.	VERTICORDIA ORNATA	25	13 1/2-60 FMS.	S	O				
104.	CADULUS SP. A.	25	14-500 FMS.	S	M				
105.	DENTALIUM SP. B	25	12-50 FMS.	S	O				
106.	DENTALIUM SP. C	25	11-40 FMS.	S	O				
107.	DIODORA CAYENENSIS	24	4-32 FMS.	S	O				
108.	POLINICES DUPLICATUS	24	0-26 FMS.	S	O				
109.	SCONZIA STRIATA	24	15-70 FMS.	S					
110.	TEREBRA CONCAVA	24	6-40 FMS.	S					
111.	PLICATULA GIBBOSA	24	6-43 FMS.	S	O	A	C		
112.	PARVITURBOIDES INTERRUPTUS	23	8-43 FMS.	S	O				
113.	SEILA ADAMSI	23	0-43 FMS.	B	O	S	A	C	
114.	CONUS CLARKI	23	20-50 FMS.	S	M				
115.	RUBELLATOMA SP. A	23	7 1/2-50 FMS.	S					
116.	RINGICULA SEMISTRIATA	23	20-167 FMS.	S	M				
117.	VITRINELLA FLORIDANA	22	4-152(?) FMS.	S					
118.	VERMICULARIA SPIRATA	22	9-43 FMS.	S	O	A	C		
119.	CERITHIOPSIS GREENI	22	5-57 FMS.	S	O	A	C		
120.	STYLIOLA SUBULA	22	12-500 FMS.	S	M	A			
121.	CHRYSALLIDA SEMINUDA	22	5-40 FMS.	S					
122.	LUCINA SOMBRERENSIS	22	20-70 FMS.	S	O				
123.	KELLIA SUBORBICULARIS	22	?-43 FMS.	S	O	A			
124.	DINOCARDIUM ROBUSTUM	22	0-43 FMS.	B	S	O	A		
125.	SEMELE PURPURASCENS	22	7 1/2-30 FMS.	S	O	A			
126.	ALVANIA AUBERIANA	21	7 1/2-67 FMS.	S	C	A			
127.	NASSARIUS SP. B	21	8-50 FMS.	S					
128.	BUSYCON SPIRATUM	21	0-27 FMS.	B	S	O			
129.	OLIVELLA DEALBATA	21	5-75 FMS.	S	O				
130.	ITHYCYTHARA SP. C	21	11-70 FMS.	S					
131.	CHLAMYS BENEDICTI	21	7 1/2-70 FMS.	S	C	A			
132.	MICROCARDIUM TINCTUM	21	20-167 FMS.	S	O				
133.	DONAX TUMIDUS	21	4-25 FMS.	S	O				
134.	TELLINA PROBRINA	21	14-50 FMS.	S	O				
135.	MACOMA TAGELIFORMIS	21	8-40 FMS.	S	O	A			
136.	MODULUS MODULUS	20	4-25 FMS.	S	O	A			

137.	BULLATA OVULIFORMIS	20	12-167 FMS.	S	M		
138.	CONUS AUSTINI	20	7 1/2-75 FMS.	S			
139.	LEPTADRILLIA SPLENDIDA	20	13 1/2-110 FMS.	S			
140.	CRYOTURRIS SP. A	20	9-50 FMS.	S			
141.	SCAPHANDER WATSONI	20	20-167 FMS.	S			
142.	SPIRATELLA INFLATA	20	32-500 FMS.	S	M		
143.	LITHOPHAGA BISULCATA	20	6-25 FMS.	S	O	A	C
144.	PAPYRIDEA SOLENIDORMIS	20	12-40 FMS.	S	O	A	
145.	ANTIGONA STRIGILLINA	20	13 1/2-50 FMS.	S	O	A	
146.	TELLINA ALTERNATA	20	0-25 FMS.	S	O		
147.	THRACIA CONRADI	20	11-60 FMS.	S	O		

NOTE: THE CORRECT NAME OF AMPHISSA SP. A, NUMBER 29, IN THIS LIST, IS  
COSMIOCONCHA CALLIGLYPTA, DALL.

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REVIEW: J. C. BRITTON, JR., THE LUCINIDAE (MOLLUSCA: BIVALVIA) OF THE WESTERN ATLANTIC OCEAN. PH.D. THESIS. THE GEORGE WASHINGTON UNIVERSITY, 565 PAGES, 1970. BY H. ODE

THIS BEAUTIFUL THESIS GIVES A CLEAR AND UP-TO-DATE DESCRIPTION OF THE RECENT SPECIES OF THE FAMILY LUCINIDAE IN THE WESTERN ATLANTIC. MUCH OF IT IS DEVOTED TO A DISCUSSION OF TAXONOMIC DIFFICULTIES, WHICH IS FOR THOSE INTERESTED IN THESE MATTERS HIGHLY INTERESTING. I WAS STRUCK BY THE REPEATED STATEMENT THAT SO LITTLE IS KNOWN ABOUT THE BIOLOGY OF EVEN FAIRLY COMMON SPECIES. THE ARRANGEMENT OF THE VARIOUS GENERA AND THEIR LINEAGES APPEARS, AS FAR AS I AM ABLE TO JUDGE THIS, A LOGICAL ONE. WHILE TRYING TO IDENTIFY A NUMBER OF THE SO-CALLED SMALLER SPECIES IN THE GENUS CODAKIA, WHICH ARE FOUND ON THE TEXAS OFFSHORE SHELF, I WONDERED WHY THEY WERE ASSIGNED TO THE GENUS CODAKIA, WHILE THE HINGE STRUCTURE IS VERY SIMILAR TO THAT OF LUCINA MULTILINEATA. SEVERAL OF THESE SMALL SPECIES ARE GROUPED BY THE AUTHOR TOGETHER WITH LUCINA MULTILINEATA IN THE GENUS PARVILUCINA.

ANOTHER CHANGE TO WHICH TEXAS SHELL COLLECTORS HAVE TO GET ACCUSTOMED IS THE NEW GENERIC NAME FOR THE SPECIES WHICH USED TO BE CALLED LUCINA FLORIDANA. THIS EDENTULOUS SPECIES IS NOW PLACED IN THE GENUS MEGAXINUS.

IN TOTAL, 32 SPECIES ARE AT PRESENT KNOWN FROM THE WESTERN ATLANTIC FOR ELEVEN OF WHICH THE AUTHOR CITES RECORDS FROM TEXAS. THIS NOT SURPRISINGLY POINTS AGAIN TO THE FACT THAT MOST OF OUR IMPORTANT MUSEA POSSESS ONLY SCANTY MATERIAL FROM THE WESTERN GULF OF MEXICO. ON THE DEEPER PARTS OF THE TEXAS CONTINENTAL SHELF, AND ON THE SHALLOWER CORAL REEFS FRINGING THE SHELF, A NUMBER OF SPECIES IN THE GENERA PHACOIDES, PARVILUCINA, AND MYRTEA IS KNOWN, WHICH ALTHOUGH FULLY TREATED BY THE AUTHOR, ARE NOT CITED BY HIM FOR THE NORTHWESTERN GULF OF MEXICO.

THERE IS LITTLE IN THIS THESIS THAT THE AMATEUR CAN SINGLE OUT FOR CRITICISM. PERHAPS I MAY POINT OUT THE INCORRECT ENDING OF THE TRIVIAL NAME AMIANTUS IN THE TAXON PARVILUCINA AMIANTUS. THIS SPECIES WAS FIRST DESCRIBED IN THE GENUS PHACOIDES WHICH HAS A MASCULINE GENDER. BECAUSE AMIANTUS IS THE LATINIZED FORM OF THE GREEK ADJECTIVE (AMIANTOS), ITS ENDING SHOULD BE -A, WHEN COMBINED WITH PARVILUCINA.

ANOTHER CRITICISM I HAVE IS THE OCCASIONAL INCORRECT CONVERSION OF CENTIMETERS INTO INCHES. 10 CM. CONVERTS CLOSELY TO 3 15/16 INCHES AND NOT 4 1/8 AS THE AUTHOR STATES.

A MOST READABLE PART OF THIS THESIS IS CONCERNED WITH THE DISCUSSION: ECOLOGICAL AND ZOOGEOGRAPHICAL CONSIDERATIONS. IN TABLE 2 THE KNOWN DISTRIBUTION OF ALL SPECIES THROUGHOUT VARIOUS PROVINCES IS TABULATED. I NOTE THAT IN THIS TABLE PHACOIDES PECTINATUS, WHICH IS A COMMON TEXAS BAY SPECIES IS, ALTHOUGH CITED FOR TEXAS ON PAGE 135, NOT INCLUDED IN THE "NORTHERN GULF PROVINCE". ON THE OTHER HAND, SUCH SPECIES AS CALLUCINA RADIANS AND CAVILINGA BLANDA, WHICH ARE UNKNOWN ALONG THE WESTERN LOUISIANA, TEXAS AND NORTHERN MEXICAN COAST ARE INCLUDED.

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REVIEW: E. C. RIOS: COASTAL BRAZILIAN SEA SHELLS:  
FUNDACAO CIDADE DE RIO GRANDE, MUSEO OCEANOGRAFICO  
DE RIO GRANDE, RIO GRANDE, R. S. XI, 1970, 255 PAGES.

BY H. ODÉ

THE AUTHOR, A CHEMISTRY TEACHER, IS ACCORDING TO A BIOGRAPHICAL NOTE AT THE END OF THE BOOK, AN ARDENT SHELL COLLECTOR WHO FOUNDED THE RIO GRANDE OCEANOGRAPHIC MUSEUM IN 1953, WHICH HOUSES NOW ONE OF THE FINEST SHELL COLLECTIONS IN BRAZIL. FOR HIS DEVOTION TO A WORTHWHILE CULTURAL UNDERTAKING ALL SHELL COLLECTORS, WHO WILL USE HIS BOOK, MUST BE SINCERELY THANKFUL AND MY ADMIRATION FOR HIS RESULTS IS IN NO WAY DIMINISHED BY SOME CRITICAL REMARKS I HAVE TO OFFER.

FIRST OF ALL IT MUST BE STATED THAT THIS STUDY OF A, TO ME, COMPLETELY UNKNOWN FAUNA, ALTHOUGH EXTREMELY INTERESTING, LEFT ME SOMEWHAT DISAPPOINTED. IN IT 860 SPECIES OF MOLLUSKS ARE LISTED, NOT DESCRIBED, ALL COLLECTED ALONG THE BRAZILIAN COAST. VERY RECENTLY DESCRIBED SPECIES MAKE THE TABULATION QUITE UP-TO-DATE, BUT SOURCE MATERIAL IS NOT GIVEN FOR ALL SPECIES, WHICH IS UNFORTUNATE. IN 60 PLATES ABOUT 300 OF THE STRICTLY ENDEMIC SPECIES HAVE BEEN ILLUSTRATED. SOMETIMES, THESE FIGURES DO NOT OFFER SUFFICIENT DETAIL. THESE 860 SPECIES ARE, IN GENERAL, OF MEDIUM TO LARGE SIZE, SO THAT I SUGGEST THAT THE MICROFAUNA IS LARGELY OMITTED IN THE BOOK. ALONG THE COASTLINE AS LONG AS THAT OF BRAZIL IT IS UNLIKELY THAT SO FEW MICROFORMS EXIST. WHEN THESE WILL BE STUDIED THE NUMBER OF SPECIES PROBABLY WILL DOUBLE.

AS WITH SO MANY CHECKLISTS WHICH MENTION ALSO RANGES OUTSIDE THE AREA TO WHICH THEY PERTAIN AND THUS INVITE THE CRITICISM OF INCOMPLETENESS, THERE IS SOME UNAVOIDABLE VAGUENESS. SOMETIMES THE "GULF OF MEXICO" IS CITED, SOMETIMES THE "GULF STATES" AND SOMETIMES "TEXAS". THE SPECIES CITED FOR TEXAS ARE THE FOLLOWING:

TURBO CASTANEA GMELIN, 1791  
SEILA ADAMSI (H. C. LEA, 1845)  
RECLUZIA ROLLANDIANA PETIT, 1853  
EPITONIUM ANGULATUM (SAY, 1830)  
NISO AEGLEES BUSH, 1885  
TRIVIA LEUCOSPHAERA SCHILDER, 1931  
TEREBRA DISLOCATA SAY, 1822  
NUCULA CONCENTRICA (SAY, 1824)  
ANADARA BAUGHMANI HERTLEIN, 1951

COMMENTS LAST MONTH REGARDING SEASHELLS AND SHELL TRADE ROUTES RECALL A SHORT ABSTRACT PUBLISHED IN THE ANNUAL REPORT FOR 1969 BY THE AMERICAN MALACOLOGICAL UNION (PP. 13-14). UNDER THE TITLE "CABEZA DE VACA, DEALER IN SHELLS", J. X. CORGAN BRIEFLY POINTS OUT THAT THE EXPLORER CABEZA DE VACA WAS PROBABLY THE FIRST CAUCASIAN SEASHELL MERCHANT IN THE GULF COAST AREA. A RECONSTRUCTION OF THIS MAN'S TRAVELS SUGGESTS THAT BETWEEN 1530 AND 1534 HE "OPERATED OUT OF THE GALVESTON AREA AND TRADED WIDELY IN THE CENTRAL GULF COAST". HE SPENT ABOUT 22 MONTHS IN THE INTERIOR OF THE CONTINENT. THIS TRADING VENTURE MUST HAVE BEEN SUCCESSFUL; HE BECAME WEALTHY. HOWEVER, IT IS CERTAIN THAT THE FLOW OF SHELLS INLAND EXISTED LONG BEFORE DE VACA'S TIME SINCE THE SHELLS ARE FOUND ABUNDANTLY IN ARCHAEOLOGICAL SITES THAT PREDATE THE 16TH CENTURY.

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OCCASIONALLY ONE WISHES TO DOCUMENT, FOR FUTURE REFERENCE, PUBLICATIONS CONCERNING UNUSUAL SUBJECT MATTERS. ONE SUCH ITEM IS A BOOK REVIEW BY H. VAN DER SCHALIE. THE BOOK REVIEWED IS ENTITLED TERRESTRIAL SLUGS BY N. W. RUNHAM AND P. J. HUNTER (HUTCHINSON UNIVERSITY LIBRARY, LONDON AND HILLARY HOUSE, NEW YORK, 1971, 184 PP, ILLUSTR. CLOTH \$6; PAPER \$2.50). THE REVIEW APPEARED ON PAGE 904 OF THE SEPT. 3, 1971 ISSUE OF SCIENCE.

ACCORDING TO THE REVIEWER, THE TEXT IS CONCERNED WITH A WIDE RANGE OF TOPICS RELATED TO THE SLUGS, THE MORPHOLOGICAL MATERIAL IS WELL ILLUSTRATED AND 21 PAGES OF REFERENCES ARE GIVEN.

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THE LIBRARY OF THE HOUSTON CONCHOLOGY SOCIETY HAS BEGUN TO RECEIVE A JOURNAL CALLED MALACOLOGICAL REVIEW. EACH ISSUE (PUBLISHED 4 TIMES A YEAR) CONTAINS RESEARCH ARTICLES, BRIEF SCIENTIFIC COMMUNICATIONS AND NEWS OF MALACOLOGICAL EVENTS AND MALACOLOGICAL SOCIETIES. OF GREAT INTEREST IS THE SECTION ENTITLED "CONTENTS OF MALACOLOGICAL PERIODICALS". THE TABLES OF CONTENTS OF MANY PUBLICATIONS ARE REPRODUCED IN THIS SECTION. THE CURRENT ISSUE, FOR EXAMPLE, LISTS JOURNAL DE CONCHYLOGIE, PROCEEDINGS OF THE NATIONAL SHELLFISHERIES ASSOCIATION, MALACOLOGIA, ARCHIV FUR MOLLUSKENKUNDE, THE JOURNAL OF CONCHOLOGY, THE NAUTILUS, PROCEEDINGS OF THE MALACOLOGICAL SOCIETY OF LONDON, VENUS, BASTERIA, JOURNAL OF THE MALACOLOGICAL SOCIETY OF AUSTRALIA, THE VELIGER, COMUNICACIONES DE LA SOCIEDAL MALACOLOGICA DEL URUGUAY, LAVORI DELLA SOCIETA MALACOLOGICA ITALIANA AND LA CONCHIGLIA. (AS TIME AND FACILITIES PERMIT, IT IS HOPED THAT OUR LIBRARY COMMITTEE MAY BE ABLE TO ACCUMULATE INFORMATION CONCERNING THE LIBRARIES IN THIS AREA WHERE SOME OF THESE UNCOMMON PUBLICATIONS MAY BE LOCATED).

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THE RECENT SHELL SHOW IN HONOLULU MUST HAVE BEEN A HUMDINGER. ELMER LEEHMAN, CHAIRMAN OF THE SHELL SHOW, WRITES THAT THE SHOW CONTAINED OVER 85 EXHIBITS AND WAS SEEN BY MORE THAN 40,000 PEOPLE. THERE WERE ON DISPLAY THREE CONUS BENGALENSIS, NINE CONUS GLORIAMARIS, MORE THAN A DOZEN GOLDEN COWRIES, SIX KINDS OF PLEUROTOMARIAS, ALSO CYPRAEA GUTTATA, CYPRAEA ENGLERTI, CYPRAEA LANGFORDI, CYPRAEA THERSITES CONTRARIA, CYPRAEA RESSELLI AND THE LIKE. ONE OF THE SHELL OF THE SHOW AWARDS WAS WON BY MARGINELLA PRINGLEI (OWNED BY LAWRENCE THOMAS OF MORRO BAY, CALIFORNIA).

AFTER JAMES BENDER OF PORT ARTHUR BROUGHT ME A SINUM PERSPECTIVUM (SAY) WITH AN OPERCULUM AT THE AUGUST MEETING, I HAVE BEEN DETERMINED TO GET SOME LIVE SPECIMENS AND TO TRY TO EXTRACT THE THIN OPERCULUM MYSELF. ON OCTOBER 24, I RECOVERED EIGHT SPECIMENS FROM THE WIDE, SHUFFLING TRAILS ON THE EXPOSED SAND BARS AT BOLIVAR. EXPERIMENTS IN EXTRACTING THE OPERCULUMS HAVE RESULTED IN THE FOLLOWING SUGGESTIONS FOR YOUR USE: IT IS BETTER TO BOIL OR DROP SPECIMENS IN ALCOHOL BEFORE WORKING WITH THE FLESHY FOOT. I BOILED MINE AND USED A RAZOR TO CUT THE POSTERIOR PART OF THE FOOT (THE PART THAT FOLDS UNDER THE PLACE OF LAPPING IS POSTERIOR PART) DOWN TO THE SHELL LEVEL AT THE POINT ON THE METOPODIUM OR REAR POINT OF THE FOOT NEAR THE FOLDING. THE OPERCULUM IS SITUATED IN THE VALLEY ON THE POSTERIOR SIDE OF THE FOOT WHERE THE SHELL SITS IN THE FOOT. IT IS A THIN, YELLOWISH SLIVER OF ABOUT ONE-QUARTER INCH. I SLICED THE OPERCULUM OFF WITH A RAZOR AND FLATTENED IT OUT ON A NAPKIN TO DRY.

IN CASE YOU ARE ONE OF THE MANY WHO DID NOT REALIZE THAT SINUM HAS AN OPERCULUM, IT IS THERE IN PRINT IN THE PERRY AND SCHWENDEL BOOK ON THE WEST COAST OF FLORIDA!

OTHER RECENT FINDS ON OUR BEACHES INCLUDE A NUMBER OF LIVE (IN TRAILS) PYRAMIDELLA (LONCHAEUS) CRENULATA (HOLMES) AT GALVESTON SOUTH JETTIES BY THOSE MEMBERS WHO ATTENDED THE OCTOBER FIELD TRIP. THERE, ALSO, ON OCTOBER 24, I WAS ABLE TO COLLECT A FULLY ADULT, LIVE TELLIDORA CRISTATA RECLUZ BY DIGGING A LITTLE MOUND IN THE SAND AT LOW TIDE NEAR SURF'S EDGE. PAUL MCGEE COLLECTED SEVERAL LIVE MUREX FULVESCENS SOWERBY AT THIS LOCATION RECENTLY.

THOSE OF YOU INTERESTED IN DEEP SEA MATERIAL WILL FIND THE BULLETIN OF MARINE SCIENCE OF THE UNIVERSITY OF MIAMI, VOLUME 21, No. 1, MARCH, 1971, OF SPECIAL INTEREST. ALERTED TO THIS ISSUE BY DR. DONALD MOORE OF THE UNIVERSITY OF MIAMI MARINE SCIENCE INSTITUTE, WHO SHOWED ME THE VOLUME AT A.M.U. AT COCOA BEACH IN JULY, I HAVE FINALLY RECEIVED MY COPY. FREDERICK M. BAYER'S ARTICLE ON NEW AND UNUSUAL MOLLUSKS FROM THE TROPICAL WESTERN ATLANTIC, COMPLETE WITH EXCELLENT PHOTOGRAPHS, IS ONE OF THE REPORTS. THE ISSUE IS DEVOTED TO BIOLOGICAL RESULTS OF THE UNIVERSITY OF MIAMI DEEP-SEA EXPEDITIONS TO TROPICAL WESTERN ATLANTIC AND GULF OF PANAMA LOCATIONS. THIS VOLUME ISSUE MAY BE PURCHASED FOR \$4.50 FROM THE UNIVERSITY OF MIAMI PRESS, CORAL GABLES, FLORIDA.

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CONTINUED FROM PAGE 46. . . . .

CHIONE CANCELLATA (LINNAEUS, 1767)  
 CALLISTA EUCYMATA (DALL, 1889)  
 ABRA AEQUALIS (SAY, 1822)  
 DONAX VARIABILIS SAY, 1822  
 GASTROCHAENA HIANS (GMELIN, 1791)  
 BARNEA TRNUCATA (SAY, 1822)  
 MARTESIA CUNEIFORMIS (SAY, 1822)

THIS IS A SOMEWHAT UNBALANCED LIST. INSTEAD OF MANY OF THE VERY COMMON TEXAS SPECIES, WHOSE RANGE EXTENDS TO BRAZIL, SUCH RARITIES AS CALLISTA EUCYMATA AND RECLUZIA ROLLANDIANA ARE MENTIONED. HOWEVER, THIS VAGUENESS AND SOME MISSPELLINGS ARE NOT SERIOUS ERRORS WHEN BALANCED AGAINST THE MAIN MERIT OF THE BOOK: TO MAKE GENERALLY AVAILABLE TO HOBBYISTS AND PROFESSIONALS A COHERENT AND CLEAR OVERVIEW, HOWEVER INCOMPLETE IT MAY BE, OF THE BRAZILIAN MOLLUSCAN FAUNA. I CONGRATULATE MR. RIOS FOR HIS INITIATIVE AND HOPE THAT THE PRESENT BOOK WILL FORM THE BASIS FOR MORE COMPLETE INFORMATION IN THE FUTURE.

Texas  
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# CONCHOLOGIST

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VOLUME VIII, No. 5

## NOTES & NEWS

### WHAT ARE ALL THOSE LITTLE CREATURES?

THE JANUARY GUEST SPEAKER, DR. DOROTHEA MANGUM OF ANGLETON, WILL PROVIDE ANSWERS TO THE QUESTION POSED ABOVE. SHE IS A BIOLOGIST AND PARTICULARLY INTERESTED IN JELLY FISH AND SEA ANEMONES. IN ADDITION TO HER DISCUSSION OF SUCH CREATURES ON OUR SHORES, SHE WILL SHOW MANY FORMS OF MARINE LIFE IN HER DELIGHTFUL MOVIES ENTITLED "ALONG THE SEASHORE." THE MEETING WILL BE HELD JANUARY 26 AT 8 P.M. AT THE HOUSTON MUSEUM OF NATURAL SCIENCE.

### FIELD TRIP SATURDAY JANUARY 29

FANNIE AND SAM MIRON HAVE AGREED TO LEAD A FIELD TRIP TO THE EAST BEACH SOUTH JETTIES AT GALVESTON ON SATURDAY, JANUARY 29, WITH PLANS TO MEET AT 8:30 A.M. NEAR THE JETTIES. YOU ARE ASKED TO BRING BUCKETS, TROWELS OR SOME DIGGING TOOL, SIEVE FOR PICKING UP TINY TRAILS, PLASTIC BAGS AND VIALS FOR INDIVIDUAL SPECIMENS. YOU ARE URGED TO COME IN WARM ENOUGH CLOTHING AS IT IS USUALLY WINDY AND MAY BE VERY COLD AND DAMP. MANY MEMBERS EMPLOY THE USE OF RUBBER BOOTS TO BE ABLE TO WADE OR STOCKING FOOT WADERS OVER WHICH HIGH TOP TENNIS SHOES ARE WORN. BRING DRINKS AND A LUNCH AS PLANS INCLUDE A BREAK AT LUNCHTIME WITH A DISCUSSION AND VIEWING OF YOUR FINDS. COME JOIN THE FUN AND LOCATE THE MIRON'S BY LOOKING FOR A SHELL ON THEIR CAR'S ANTENNAE.

### NOVEMBER MINUTES

FRITZ LANG, SECRETARY

MEETING WAS CALLED TO ORDER BY CHAIRMAN LLOYD MEISTER AT 8:00 P.M. ON NOVEMBER 17, 1971. ABOUT TWENTY-FIVE MEMBERS WERE PRESENT. MINUTES OF PREVIOUS MEETING WERE READ AND APPROVED.

DR. W. W. SUTOW REPORTED THAT THE EXCHANGE BOX FOR THE SAIPAN SHELL CLUB IS BEING PREPARED FOR SHIPMENT. HE WOULD LIKE TO HAVE 200 SPECIMEN SHELLS FOR EXCHANGE.

DOUG REYNOLDS REPORTED A FIELD TRIP AT BOLIVAR FERRY ON BOLIVAR PENINSULA FOR NOVEMBER 19.

MR. AND MRS. H. C. BAUER FROM GALVESTON SHELL CLUB WERE INTRODUCED AND WELCOMED BY OUR MEMBERS.

MRS. L. N. DEXTER INTRODUCED DR. HAROLD HARRY FROM TEXAS A&M UNIVERSITY MARINE BIOLOGY DEPARTMENT. DR. HARRY GAVE AN INFORMATIVE AND INTERESTING TALK ON MAN'S IMPACT ON THE TEXAS COASTAL ENVIRONMENT. DR. HARRY ANSWERED QUESTIONS FROM THE MEMBERS, AND WE ENJOYED HIS VISIT. OUR THANKS TO DR. HARRY.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Spears

### SUPER FAMILY PYRAMIDELLACEA (CONTINUED)

THESE CITED RANGES RAISE THE EXPECTATION TO FIND THESE SPECIES IN THE NORTH-WEST GULF OF MEXICO. WHETHER THE TYPE OF C. AEQUALIS CONRAD IS STILL IN EXISTENCE IS UNKNOWN TO US. ONE OF THE TWO SPECIES FIGURED BY CLENCH AND TURNER AS T. LEVIS C. B. ADAMS APPEARS TO BE CLOSE TO C. ABRUPTA BUSH, THE OTHER IS PROBABLY SOMETHING ELSE.

IN SUMMARY THEN, WE HAVE THE FOLLOWING CLASSIFICATION OF THE CHEMNITZIA COMPLEX AS IT IS FOUND IN TEXAS:

CHEMNITZIA: SPIRAL SCULPTURE LACKING, OR IF PRESENT, EXPRESSED AS SPIRAL RIDGES WITH SOME WIDTH AND ROUNDED APPEARANCE; BODY WHORL RELATIVELY SMALL; SHELL SHAPE CONICAL OR NEEDLE-SHAPED.

STRIOTURBONILLA: SPIRAL SCULPTURE CONSISTING OF EXTREMELY FINE INCISED LINES LIKE A DIFFRACTION GRATING; BODY WHORL RELATIVELY LARGER; SHELL HAS A SHOULDERED APPEARANCE.

BESLA: SMALL, CLEARLY VISIBLE PLICA ON COLUMNELLA; DEEP ALMOST NOTCHED SUTURE; CLEARLY SPIRALLY STRIATE BELOW PERIPHERY AND ABOVE PERIPHERY IN MATURE SHELLS.

IN CHEMNITZIA THE FOLLOWING RECENT TAXA ARE AVAILABLE IN THE WESTERN ATLANTIC (OUR LIST DOES NOT PRETEND TO BE COMPLETE).

- ABRUPTA BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 168, 172, PL. 8, FIG. 4  
AEQUALIS CONRAD 1827, JOUR. ACAD. NAT. SCI., PHILA., VOL. 5, P. 208.  
BARTSCH 1909, PROC. BOST. SOC. NAT. HIST., VOL. 34(4), P. 78.  
ATYPHA BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 170.  
BELOTHECA DALL 1889, GASTR. BLAKE REP., P. 335, PL. 26, FIG. 7d.  
COMPSA BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 168-169, 172.  
CURTA DALL 1889, BULL. MUS. COMP. ZOOL., 18, P. 337, PL. 26, FIG. 7c.  
DALLI BUSH 1889, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 169, PL. 8, FIG. 8.  
EXARATA LEA 1845, TRANS. AM. PHIL. SOC. 9, EXTRAS, P. 25, PL. 35, FIG. 44.  
HEILPRINI BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 164, 172, PL. 8, FIG. 13.



- HEMPHILLI BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 169, PL. 8, FIG. 3.
- INCLINATA BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 168, 172.
- KYMATOESSA WATSON 1885, SEE BUSH: PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 172.
- LEUCA BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., P. 167, 172, 1900; TR. CON. ACAD. SCI., VOL. 10, P. 529, PL. 64, FIG. 18.
- LAEVIS C. B. ADAMS, 1850, C TO C (5), P. 73.
- LEVIS C. B. ADAMS, IN BUSH: PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 172.
- MODESTA ORBIGNY 1853, SEE BUSH, 1899, PROC. AC. NAT. SCI., PHILA., VOL. 51, P. 172.
- PULCHELLA ORBIGNY 1853, HIST DE L' ISLE DE CUBA I, P. 208-227, ATLAS, PL. 16-17, BUSH, 1899, P. 172.
- PUSILLA C. B. ADAMS 1850, C. TO C., P. 74. DALL 1889, USNM, BULL. 37, P. 128.
- RHABDOTA WATSON, 1885 REPORT VOYAGE CHALLENGER, 15, P. 488-493, PL. 32. BUSH 1899, PROC. AC. N. S., PHILA., VOL. 51, P. 172.
- SWIFTII BUSH 1899, BUSH 1900, TRANS. CONV. ACAD. SCI., VOL. 10, P. 529, PL. 64. FIG. 21, 21A.
- TURRIS ORBIGNY: SEE BUSH 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 173.
- URUGUAYENSIS PILSBRY 1897, PROC. ACAD. NAT. SCI., PHILA., VOL. 49, P. 296, PL. 6.



PHOTO BY  
FRANK VAN MORKHOVEN.

CHEMNITZIA AEQUALIS CONRAD 1827 - 6.32 MM., PORT ARANSAS CAUSEWAY,  
JULY 1, 1961 - BEACH SPECIMEN FROM ODÉ COLLECTION.

MOST OF BARTSCH PLIOCENE SPECIES FROM FLORIDA PROBABLY BELONG HERE. C. SWIFTII AND C. TURRIS HAVE BEEN STATED TO BE SMOOTH IN THE INTERCOSTAL SPACES BUT TO BE SPIRALLY STRIATE ON THE BASE. THIS CHARACTER HAS BEEN USED TO DEFINE THE SUBGENUS SULCOTURBONILLA BARTSCH.

IN STRIOTURBONILLA WE HAVE FAR LESS CHOICE, ALTHOUGH IT IS QUITE LIKELY THAT SEVERAL SPECIES HERE TENTATIVELY LISTED UNDER CHEMNITZIA TURN OUT TO BE STRIOTURBONILLA:

PENISTONI BUSH 1889, PROC. ACAD. NAT. SCI., PHILA., P. 165, 172, PL. 8, FIG. 14, NEW NAME FOR PULCHELLA HEILPRIN, 1889, THE BERMUDAS, P. 1730.

THEONA BARTSCH 1927, PROC. USNM, VOL. 70, (2667), P. 78.

FOR BESLA THERE IS ONLY A SINGLE SPECIES:

ELEGANS ORBIGNY 1842. SEE: ABBOTT AND WARMKE, CARIB SEA SHELLS, P. 148, PL. 26, FIG. 3.

THE LIST OF TEXAS BEACH MATERIAL IS AS FOLLOWS. WE STRONGLY EMPHASIZE THE PRELIMINARY NATURE OF OUR IDENTIFICATION. UNTIL THE RELATIONSHIPS OF ALL SO-CALLED SPECIES HAVE BEEN STUDIED IN DETAIL THE NAMES AS GIVEN HERE CANNOT MEAN MUCH.

BESLA ELEGANS ORBIGNY, 1842. THIS SMALL AND PRETTY TURBONILLA IS OCCASIONALLY FOUND IN TEXAS BEACH DRIFT. IT IS A SHALLOW WATER FORM WHICH HAS BEEN TAKEN COMMONLY OFFSHORE. IT PROBABLY ALSO INHABITS THE SURFZONE. UNTIL NOW IT WENT BY THE NAME TURBONILLA ELEGANS. WE BELIEVE IT BELONGS IN THE GENUS BESLA, CREATED BY BARTSCH FOR SOME EASTERN PACIFIC SHELLS. THE HELICAL NUCLEUS INDICATES AFFINITY WITH THE CHEMNITZIA RATHER THAN THE PYRGISCUS COMPLEX. IT IS ONE OF THE FEW TURBONILLAS WHOSE IDENTITY IS NOT IN DOUBT.

PREVIOUS REFERENCES: NONE

LOCALITIES: IN BEACHDRIFT ALONG THE ENTIRE TEXAS COAST.

THE MATERIAL OF STRIOTURBONILLA AVAILABLE TO US FROM THE TEXAS BEACH CAN BE EASILY SEPARATED INTO TWO DISTINCT SPECIES, BOTH OF WHICH CANNOT BE NAMED BY US.

STRIOTURBONILLA SPEC INDET. (A) THIS SPECIES WHICH WE CANNOT NAME HAS BEEN COLLECTED ALIVE AT GALVESTON (BOONE) WHERE IT WAS FOUND A FEW TIMES CRAWLING ON THE MUDFLATS. DEAD SHELLS ARE NOT PARTICULARLY RARE IN DRIFT, ALL ALONG THE TEXAS COAST, BUT ARE USUALLY COLLECTED ONLY IN SMALL NUMBERS. REMARKABLY, IT IS ABSENT IN MATERIAL DREDGED OFFSHORE SO THAT WE CONCLUDE THAT IT IS RESTRICTED TO THE INLET AREAS AND THE SURFZONE. THE SPECIES IS CHARACTERIZED BY THE FADING OF THE RIBBETS ON THE BODY WHORL WHEN MATURE. ITS SHAPE AGREES TO SOME EXTENT WITH THE FIGURE OF T. HEMPHILLI AS GIVEN IN PERRY AND SCHWENGEL, BUT WHICH IS COMPLETELY AT VARIANCE WITH THE ORIGINAL FIGURE OF BUSH. OUR TEXAS SHELL IS NEVER COLORED, BUT IS ALWAYS CLEAR WHITE, IN CONTRAST TO THE STATEMENT IN PERRY AND SCHWENGEL.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, FREEPORT, MATAGORDA, PORT ARANSAS, SOUTH PADRE ISLAND.

.....TO BE CONTINUED.

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ON THE GEOGRAPHICAL DISTRIBUTION OF THE MEMBERS OF THE CLASS AVES.

JOURNAL OF PROCEEDINGS LINNEAN SOCIETY LONDON. 2: 130-145.

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LIST OF MOLLUSCA COLLECTED IN TEXAS IN 1891. BULLETIN OF THE U. S. FISH COMMISSION: 123-125.

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AN APPROACH TOWARD A RATIONAL CLASSIFICATION OF CLIMATE.

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TEXAS. ADOLPH MARCUS, BONN.

WOODWARD, S. P., 1856

A MANUAL OF THE MOLLUSCA. LOCKWOOD AND Co. LONDON.

SPECIES NOW LIVING IN THE TEXAS COASTAL REGION BUT RECENTLY INTRODUCED BY MAN.

THESE SPECIES ARE LISTED HERE, WITH THEIR LOCAL RECORDS, MERELY FOR THE SAKE OF COMPLETENESS AND ARE NOT CONSIDERED OTHERWISE IN THIS REPORT.

#### FAMILY HELICIDAE

1. HELIX (CRYPTOMPHALUS) ASPERSA (O. F. MÜLLER). THIS EUROPEAN SNAIL HAS BEEN FREQUENTLY TRANSPORTED BY MAN TO ALL PARTS OF THE WORLD. ONE DEAD BUT FRESH SHELL WAS PICKED UP ON A LAWN ON WEST GRAY STREET IN HOUSTON IN APRIL, 1960, BUT ITS ORIGIN THERE IS NOT KNOWN. THIS SPECIES IS WELL ESTABLISHED IN IRRIGATED GARDENS IN ALPINE, TEXAS. IT IS A COMMON GARDEN PEST IN OTHER PARTS OF THE UNITED STATES.
2. OTALA (OTALA) LACTEA (O. F. MÜLLER). THIS SNAIL, NATIVE OF SOUTHERN EUROPE AND NORTH AFRICA, IS NOW WELL ESTABLISHED IN SEVERAL LOCALITIES IN TEXAS. IN THIS AREA IT HAS BEEN FOUND IN GALVESTON, GALVESTON COUNTY, HARRIS COUNTY, (SEVERAL LOCATIONS WITHIN THE CITY LIMITS OF HOUSTON), AND PORT ARTHUR, JEFFERSON COUNTY.
3. OTALA (EOBANIA) VERMICULATA (O. F. MÜLLER). I HAVE FOUND THIS SNAIL, A NATIVE OF SOUTHERN EUROPE, THRIVING IN THE OPEN IN DAY-LILLY PLOTS IN GALVESTON, TEXAS, NOVEMBER, 1958. PREVIOUS RECORDS FROM TEXAS (BRYAN: WACO) MAY HAVE BEEN BASED ON MISIDENTIFIED O. LACTEA, ACCORDING TO DR. BEQUAERT.

#### FAMILY POLYGYRIDAE

4. POLYGYRA (POLYGYRA) SEPTEMVOLVA VOLVOXIS (L. PFEIFFER). THIS SUBSPECIES OF P. SEPTEMVOLVA IS A NATIVE OF THE SOUTHEASTERN UNITED STATES FROM GEORGIA TO FLORIDA AND ALABAMA. I HAVE RECENTLY FOUND IT LIVING IN NUMBERS (APRIL, 1960) IN A GREEN HOUSE NURSERY AT SHEPHERD AND WESTHEIMER STREETS IN HOUSTON. MORE RECENTLY DR. BEQUAERT FOUND IT LIVING IN A GREENHOUSE IN MEMORIAL PARK. EARLIER PUBLISHED REPORTS OF

P. VOLVOXIS FROM TEXAS (GALVESTON, H. A. PILSBRY, 1897; MATAGORDA PENINSULA, J. K. STRECKER, 1915) WERE BASED ON FAILURE TO RECOGNIZE FEBIGERI AS SUBSPECIFICALLY DISTINCT FROM VOLVOXIS.

#### FAMILY ACHATINIDAE

5. RUMINA DECOLLATA (LINNE). THIS COMMON SOUTH EUROPEAN AND NORTH AFRICAN SNAIL FIRST APPEARED IN THE UNITED STATES AT CHARLESTON, SOUTH CAROLINA, 1813. IT WAS NOT REPORTED FROM TEXAS UNTIL 1914 (AT BROWNSVILLE). J. S. SINGLEY (1893) DID NOT MENTION IT AND AS IT IS A LARGE SNAIL, IT COULD HARDLY HAVE ESCAPED HIM IF IT HAD BEEN PRESENT IN THE STATE WHEN HE PREPARED HIS LIST. THE BELIEF THAT IT WAS INTRODUCED TO TEXAS BY EARLY SPANISH SETTLERS IS THEREFORE CERTAINLY WRONG. IT SEEMS TO HAVE RAPIDLY SPREAD IN THE STATE DURING THE PAST HALF-CENTURY. IN THIS AREA IT IS KNOWN FROM HARRIS COUNTY (COMMON IN MANY GARDENS IN HOUSTON), NUECES COUNTY, VICTORIA COUNTY, AND CAMERON COUNTY.
6. OPEAS PYRGULA (B. SCHMACKER AND O. BOETTGER). THIS SNAIL, A NATIVE OF THE FAR EAST (PARTICULARLY JAPAN), APPEARED IN NORTH AMERICA NEAR PHILADELPHIA ABOUT 1919. THERE IS AS YET NO PUBLISHED RECORD FROM TEXAS. IN 1958 IT WAS FIRST OBTAINED WITHIN THE CITY LIMITS OF HOUSTON IN DAMP WOODS OF THE UNIVERSITY OF HOUSTON PROPERTY AT THE CORNER OF CULLEN BLVD. AND MACGREGOR DRIVE AND IT HAS SINCE BEEN TAKEN ELSEWHERE IN THE CITY.
7. LAMELLAXIS GRACILIS (T. HUTTON). THIS SNAIL IS VERY SIMILAR TO THE ABOVE AND LIKEWISE A NATIVE OF ASIA, BEING ORIGINALLY DESCRIBED FROM INDIA. IT HAS SPREAD WITH COMMERCE TO MANY PARTS OF THE OLD AND NEW WORLD. IT WAS FIRST REPORTED FROM CHARLESTON, SOUTH CAROLINA IN 1888 AND IS NOW KNOWN FROM PENNSYLVANIA, VIRGINIA, ALABAMA AND FLORIDA. THERE ARE AS YET NO PUBLISHED REPORTS FROM TEXAS; BUT IN 1957-1960 IT WAS COLLECTED WITHIN THE HOUSTON CITY LIMITS AND LATER AT GALVESTON.
8. LAMELLAXIS MICRA (A. D'ORBIGNY). THIS SNAIL, INDIGENOUS TO TROPICAL AMERICA, WAS NOT REPORTED FROM NORTH AMERICA THUS FAR. IN APRIL 1960, IT WAS FIRST SEEN IN TEXAS AT HOUSTON, IN THE SAME GREENHOUSE NURSERY WHERE P. S. VOLVOXIS WAS LIVING. IT IS DOUBTFUL THAT THIS TROPICAL SNAIL COULD BECOME ESTABLISHED IN THE OPEN IN TEXAS. DEAD SPECIMENS ARE NOT RARE IN BEACH-DRIFT ON PADRE ISLAND, BEING CARRIED THERE BY COASTWISE CURRENTS FROM MEXICO, WHERE IT IS WIDESPREAD.

#### FAMILY ZONITIDAE

9. ZONITOIDES NITIDUS (O. P. MULLER). THIS SNAIL IS BELIEVED TO BE NATIVE IN BOTH THE OLD AND NEW WORLD, MAINLY IN NORTH AND CENTRAL EUROPE AND CANADA, AND IN THE NORTHERN UNITED STATES, RANGING SOUTHWARD TO ARKANSAS. SOME SPECIMENS WERE OBTAINED IN A LOT OF MOLLUSKS COLLECTED IN BROWNSVILLE BY R. D. CAMP, ABOUT 1915, AND NOT AT THE MUSEUM OF COMPARATIVE ZOOLOGY OF HARVARD. THE CIRCUMSTANCES SURROUNDING THIS FIND ARE NOT KNOWN; THE SPECIMENS MIGHT HAVE BEEN MERELY INTERCEPTED FROM PLANTS SHIPPED IN FROM THE NORTHERN UNITED STATES.

#### FAMILY LIMACIDAE

10. LIMAX FLAVUS (LINNÉ). A SLUG INTRODUCED FROM EUROPE SOON AFTER THE FIRST WHITE MAN ARRIVED. IT WAS ALREADY COMMON IN THE UNITED STATES BEFORE 1825 AND IS NOW WIDESPREAD. IN TEXAS IT IS AS YET VERY LOCAL, BEING FIRST

REPORTED BY J. K. STRECKER IN 1908. IT IS ONE OF THE COMMON GARDEN SLUGS IN HOUSTON.

11. DEROCERAS LAEVE (O. F. MÜLLER). ALTHOUGH THIS SLUG IS GENERALLY REGARDED AS NATIVE TO BOTH EUROPE AND NORTH AMERICA, IT IS NOT NORMALLY FOUND SOUTH OF MISSOURI IN THE UNITED STATES. IT APPEARS TO BE A VERY RECENT INTRODUCTION BY MAN IN TEXAS. SOME SPECIMENS WERE COLLECTED IN A GREENHOUSE IN HOUSTON IN 1960.
12. MILAX GAGATES (J. P. R. DRAPARNAUD). THIS VERY LARGE SLUG WAS INTRODUCED FROM ITS NATIVE EUROPE TO NORTH AMERICA BY THE EARLY SETTLERS, BEING FIRST REPORTED FROM CALIFORNIA ABOUT 1872. THERE ARE NO PREVIOUS PUBLISHED RECORDS FROM TEXAS; BUT IT WAS REPEATEDLY TAKEN IN LANCE ROSIER'S GARDEN IN SARATOGA, HARDIN COUNTY AND IT HAS ALSO BEEN TAKEN IN MEMORIAL PARK, HOUSTON.
13. AGRIOLIMAX RETICULATUS (O. F. MULLER). THIS PALEARCTIC SLUG WAS INTRODUCED IN NORTH AMERICA, WHERE IT IS NOW WIDESPREAD. IN 1960 IT WAS A COMMON PEST IN GARDENS AT HOUSTON.

SPECIES NOW EXTINCT IN THE AREA, OCCASIONALLY FOUND IN RIVER OR BEACH DRIFT, WASHED UP FROM PLEISTOCENE DEPOSITS.

THE SPECIES OF THIS LIST ARE NOT KNOWN TO LIVE AT PRESENT WITHIN THE AREA UNDER DISCUSSION. THEY ARE TAKEN THERE ONLY AS FOSSIL SHELLS WASHED UP FROM PLEISTOCENE DEPOSITS BY EROSION AND EVENTUALLY THROWN OUT ON THE BANKS OF RIVERS OR ON BEACHES WITH FLOOD DEBRIS. SOME OF THEM ARE EXTINCT THROUGHOUT TEXAS, SO FAR AS KNOWN. OTHERS ARE NOW FOUND ALIVE IN OTHER SECTIONS OF THE STATE. MOREOVER, PLEISTOCENE FOSSILS OF SPECIES NOW LIVING WITHIN THE TEXAS COASTAL REGION SOMETIMES OCCUR WITH RECENT SHELLS IN RIVER OR BEACH DRIFT; IT MAY BE DIFFICULT AT TIMES TO DECIDE WHETHER DRIFT SPECIMENS ARE FOSSIL OR RECENT.

#### FAMILY POLYGYRIDAE

1. POLYGYRA DORFEUILLIANA (I. LEA). AT PRESENT THIS SNAIL IS KNOWN ALIVE WITH CERTAINTY ONLY FROM THE NORTHEASTERN COUNTIES IN TEXAS, PARTICULARLY FROM THE UPPER REACHES OF THE TRINITY RIVER. WASHED UP SPECIMENS ARE OFTEN FOUND, HOWEVER, FARTHER SOUTH. WITHIN THIS AREA THEY HAVE BEEN PICKED UP IN BEACH DRIFT OF HARRIS COUNTY (HOUSTON SHIP CHANNEL), GALVESTON COUNTY (EAST BEACH LAGOON ON GALVESTON ISLAND), BRAZORIA COUNTY (QUINTANA BEACH NEAR FREEPORT) AND LIBERTY COUNTY (DRIFT OF TRINITY RIVER).

#### FAMILY ACHATINIDAE

2. CECILIOIDES ACICULA (O. F. MÜLLER). ONE DEAD SHELL OF THIS SPECIES WAS PICKED UP IN BEACH DRIFT ON PADRE ISLAND BY MR. L. HUBRICH. OTHERS WERE SEEN FROM DRIFT WASHED UP AT LAKE WACO NEAR WACO, TEXAS; AND THERE ARE REPORTS OF DEAD SHELLS FROM BEXAR COUNTY. IT IS NOT IMPOSSIBLE THAT THIS SPECIES MAY YET BE FOUND ALIVE IN TEXAS, ALTHOUGH THERE IS NO RELIABLE EVIDENCE OF THIS THUS FAR. MEANWHILE THE KNOWN TEXAS SPECIMENS MUST BE REGARDED AS PLEISTOCENE FOSSILS.

#### FAMILY SUCCINEIDAE

3. SUCCINEA UNICOLOR (G. W. TRYON). THE ONLY RECORD OF THIS SPECIES IN TEXAS IS BASED ON ONE BLEACHED SPECIMEN PICKED UP ON THE BEACH AT GALVESTON BY H. A. PILSBRY IN 1886. IN 1908, PILSBRY CALLED IT SUCCINEA OVALIS OP-

TIMA; BUT IN 1948 HE REFERS TO IT AS S. UNICOLOR. DR. BEQUAERT FOUND A SIMILAR, DEAD, MUCH WORN SHELL IN RIVER DRIFT THROWN UP FROM THE TRINITY RIVER AT LIBERTY. THE PROBABILITY IS THAT BOTH SPECIMENS WERE PLEISTOCENE FOSSILS, AS THE SPECIES IS NOT KNOWN TO LIVE ANYWHERE IN TEXAS; THE NEAREST RECENT LOCALITIES ARE IN LOUISIANA.

#### FAMILY PUPILLIDAE

4. GASTROCOPTA (ALBINULA) ARMIFERA (T. SAY). THIS SPECIES HAS BEEN CONSIDERED THUS FAR TO BE A LIVING MEMBER OF THE TEXAS FAUNA. ALL PUBLISHED RECORDS FROM THE STATE, HOWEVER, ARE FROM RIVER DRIFT SHELLS. DR. BEQUAERT, WHO COLLECTED SOME OF THESE SHELLS FROM TIME TO TIME, HAS REACHED THE CONCLUSION THAT THE SPECIES IS MOST PROBABLY NOW EXTINCT IN TEXAS. A FEW DEAD, BLEACHED SPECIMENS WERE FOUND IN BEACH DRIFT ON PADRE ISLAND.

#### FAMILY VALLONIIDAE

5. VALLONIA PERSPECTIVA (V. STERKI). THIS SNAIL IS FREQUENTLY FOUND WASHED UP IN RIVER DRIFT AS A FOSSIL, PARTICULARLY IN THE PANHANDLE AND WEST TEXAS. UNTIL RECENTLY THERE WAS NO EVIDENCE THAT IT NOW LIVES ANYWHERE IN THE STATE. ONE DEAD SPECIMEN WAS FOUND IN BEACH DRIFT ON PADRE ISLAND, NO DOUBT A WASHED-UP PLEISTOCENE FOSSIL.

#### RECENT SPECIES FOUND ONLY IN BEACH DRIFT OF THE TEXAS GULF COAST.

AS MOST OF THESE SNAILS ARE KNOWN TO LIVE AT PRESENT IN MEXICO, AND HAVE NEVER BEEN TAKEN ALIVE IN TEXAS, IT IS ASSUMED THAT THEY WERE CARRIED BY COASTWISE CURRENTS OF THE GULF OF MEXICO FROM SOUTH OF THE MOUTH OF THE RIO GRANDE. THEY ARE MOST COMMON ON THE BEACHES OF PADRE AND MUSTANG ISLANDS; ALTHOUGH SOME OF THEM MAY BE FOUND FURTHER NORTH ALSO.

#### FAMILY POLYGYRIDAE

1. POLYGYRA (ERYMODON) ARIADNAE (L. PFEIFFER).
2. POLYGYRA (ERYMODON) IMPLICATA (E. VON MARTENS).
3. POLYGYRA (ERYMODON) OPPILATA (A. MORELET).
4. POLYGYRA (ERYMODON) RHOADSI H. A. PILSBRY.

#### FAMILY SAGDIDAE

5. THYSANOPHORA (LYROCONUS) PLAGYOPTYCHA (R. J. SHUTTLEWORTH). H. A. PILSBRY (1940) INCLUDES THIS SPECIES IN THE TEXAS FAUNA ON THE STRENGTH OF A SINGLE SPECIMEN FOUND AT BROWNSVILLE. THE MUSEUM AT HARVARD HAS TWO ADDITIONAL SPECIMENS TAKEN FROM BEACHDRIFT OF THE RIO GRANDE AT BROWNSVILLE BY R. D. CAMP. THERE IS AS YET NO RELIABLE EVIDENCE THAT IT LIVES ON THE TEXAS SIDE OF THE LOWER RIO GRANDE VALLEY. IT IS A CENTRAL AMERICAN AND WEST INDIAN SNAIL, FAIRLY WIDESPREAD IN SOUTHERN FLORIDA.

#### FAMILY ACHATINIDAE

6. BECKIANUM BECKIANUM (L. PFEIFFER).
7. LAMELLAXIS MICRA (A. D'ORBIGNY).
8. LAMELLAXIS MEXICANUS (L. PFEIFFER).

FAMILY VALLONIIDAE

9. VALLONIA PULCHELLA (O. F. MÜLLER). H. A. PILSBRY IN DECEMBER OF 1885 FOUND SOME SPECIMENS OF THIS SNAIL UNDER BOARDS IN A VACANT LOT IN GALVESTON. THEY WERE FIRST REPORTED FROM THERE BY H. A. PILSBRY AND J. H. FERRISS IN 1906 AS VALLONIA EXCENTRICA V. STERKI; BUT IN 1948 PILSBRY CALLS THEM PULCHELLA; (PULCHELLA AND EXCENTRICA APPEAR TO BE TWO GROWTH FORMS OF THE SAME SPECIES, BOTH FORMS OFTEN OCCURRING IN THE SAME POPULATION). AS THERE IS THUS FAR NO OTHER RECORD OF ANY VALLONIA HAVING BEEN SEEN ALIVE IN TEXAS, IT IS HERE ASSUMED THAT THE GALVESTON SPECIMENS HAD BEEN IMPORTED ACCIDENTALLY, POSSIBLY IN BEACH DRIFT.

FAMILY HELICINIDAE

10. HELICINA CHRYSOCHEILA A. BINNEY. ALTHOUGH PILSBRY INCLUDES THIS SPECIES IN THE TEXAS FAUNA ON THE STRENGTH OF OLDER RECORDS, THERE IS NO EVIDENCE THAT IT LIVES THERE NOW. DEAD SHELLS ARE COMMON IN BEACH DRIFT, HOWEVER, ON PADRE ISLAND AND MUSTANG ISLANDS, AS WELL AS ON THE GALVESTON ISLAND BEACH.
11. HELICINA FRAGILIS ELATA R. J. SHUTTLEWORTH.
12. LUCIDELLA LIRATA (L. PFEIFFER).

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MOLLUSCANA

BY W. W. SUTOW, M. D.

THE SEEMING FREQUENCY WITH WHICH THE SCIENTIFIC NAMES OF MOLLUSKS APPEAR TO UNDERGO CHANGES HAS BEEN A SOURCE OF CONFUSION TO THE AMATEUR SHELL ENTHUSIAST. A RECENT NOTE IN SCIENCE (174:1041-1042, DEC. 3, 1971) OUTLINES THE MOST CURRENT "GROUND-RULES" FOR SUCH SCIENTIFIC NAME-CHANGING.

IN AN ARTICLE ENTITLED "STABILITY IN ZOOLOGICAL NOMENCLATURE", E. MAYR, G. C. SIMPSON AND E. EISENMANN REPORT ON THE DECLARATION ADOPTED BY THE INTERNATIONAL COMMISSION OF ZOOLOGICAL NOMENCLATURE APPOINTED BY THE INTERNATIONAL ZOOLOGICAL CONGRESS. THE DECLARATION SPELLS OUT THE "PROCEDURE FOR PROTECTING WELL ESTABLISHED NAMES AGAINST THE REVIVAL OF PREVIOUSLY FORGOTTEN OLDER NAMES."

THE NEW DECLARATION STATES THAT "A NAME THAT IS IN GENERAL CURRENT USE AND HAS BEEN AVAILABLE FOR AT LEAST 50 YEARS SHALL NOT BE DISPLACED AFTER 1960 BY AN UNUSED SENIOR SYNONYM". TO BE IN GENERAL CURRENT USE, THE NAME SHOULD BE APPLIED TO A PARTICULAR TAXON BY FIVE DIFFERENT AUTHORS IN AT LEAST 10 PUBLICATIONS DURING THE IMMEDIATELY PRECEDING 50 YEARS. THE OLDER SYNONYM MUST NOT HAVE BEEN USED, IN THE SAME TIME PERIOD, AS A PRESUMABLY VALID NAME FOR A PARTICULAR TAXON. THE NATURE OF THE "USE" IS ALSO DEFINED; "THE MENTIONING OF A NAME IN A SYNONYMY OR ITS MERE LISTING IN AN ABSTRACTING PUBLICATION...OR OTHER INDEX OR LIST OF NAMES DOES NOT CONSTITUTE USAGE".

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IN ANOTHER ARTICLE PUBLISHED IN SCIENCE (174:1211-1213, DEC. 17, 1971), P. H. RAVEN, B. BERLIN AND D. E. BREEDLOVE PROVIDE A DIFFERENT AND BROADER PERSPECTIVE ON THE QUESTION OF SCIENTIFIC NAMES. IN A PROVOCATIVE REVIEW ENTITLED "THE ORIGINS OF TAXONOMY", THEY DISCUSS THE HISTORICAL DEVELOPMENT OF TAXONOMY AND CONCLUDE THAT "TAXONOMY IS UNABLE TO DO WHAT WE EXPECT OF IT".

IT IS ESTIMATED THAT ONLY 10 TO 15 PERCENT OF ABOUT 10 MILLION EXISTING SPECIES

OF ORGANISMS IN THE WORLD HAVE BEEN DESCRIBED. THE AUTHORS MAKE THE BLEAK AND PESSIMISTIC PREDICTION THAT "IT IS DOUBTFUL THAT EVEN 5 PERCENT MORE OF THE WORLD'S ORGANISMS CAN BE ADDED TO OUR INVENTORY BEFORE THE REMAINING 80 PERCENT BECOMES EXTINCT." THE REASONS FOR EXTINCTION ARE THE RAPID GROWTH OF THE HUMAN POPULATION AND RESULTING POLLUTION. THE AUTHORS BLUNTLY OBSERVE THAT EVEN "FOR MORE THAN 99 PERCENT OF THE DESCRIBED SPECIES, WE KNOW NOTHING MORE THAN A FEW MORPHOLOGICAL FACTS AND ONE TO SEVERAL LOCALITIES WHERE THEY OCCUR." THE ESSAY DISCUSSES THE LINNEAN TAXONOMY AND ITS PREDECESSORS AND ANALYZES THE CURRENT PROBLEMS AS WELL AS FUTURE PROSPECTS. THE APPLICATION OF HIGH SPEED ELECTRONIC DATA PROCESSING EQUIPMENT IS EXPECTED TO PROVIDE SOME HELP IN THIS AREA OF SYSTEMATIC BIOLOGY.

BOTH ARTICLES ARE RECOMMENDED FOR THOUGHTFUL READING BY THOSE INTERESTED IN SCIENTIFIC NOMENCLATURE AND HOW IT CAME TO BE (AND WHERE IT MAY BE GOING).

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#### BOOK REVIEW

BY W. W. SUTOW, M. D.

ANDREWS, JEAN: SEASHELLS OF THE TEXAS COAST. UNIVERSITY OF TEXAS PRESS, AUSTIN & LONDON, 1971, 298 P., \$17.50.

THIS IS A USEFUL BOOK AND IT IS RECOMMENDED TO THE MEMBERS OF OUR CLUB. WITH THE EXCEPTION OF MICROMOLLUSKS, ALMOST EVERY SEASHELL THAT ONE IS LIKELY TO COLLECT ALONG THE TEXAS SEASHORE IS SHOWN AND DESCRIBED. THE PHOTOGRAPHS ARE CLEAR; THE SMALLER SPECIES ARE ENLARGED TO FACILITATE IDENTIFICATION.

THE REVIEWER'S ASSESSMENT OF THE BOOK IS BASED ON THE FOLLOWING OBSERVATIONS:

- 1) THERE IS AT LEAST ONE VIEW (BLACK AND WHITE PHOTOGRAPH) OF ALMOST EVERY SPECIES LISTED. THE REMAINING FEW ARE ILLUSTRATED BY FINE LINE DRAWINGS.
- 2) EACH SPECIES IS ILLUSTRATED SEPARATELY AND THE ILLUSTRATION IS PRINTED ADJACENT TO THE TEXT DESCRIPTION. THIS PERMITS EASY AND IMMEDIATE IDENTIFICATION OF TEXT WITH ILLUSTRATION.
- 3) THERE IS A CONCISE PRESENTATION OF BASIC INFORMATION ON EACH SPECIES INCLUDING SCIENTIFIC NAME, AUTHOR AND YEAR OF DESCRIPTION AS WELL AS NOTATION OF SOURCE JOURNAL REFERENCE.
- 4) THE DERIVATION OF THE SCIENTIFIC NAME IS INDICATED. THE SYSTEMATIC DESCRIPTION OF EACH SPECIES INCLUDES STATEMENTS OF SIZE, COLOR, SHAPE, ORNAMENT OR SCULPTURE, APERTURE, OPERCULUM, PERIOSTRACUM, REMARKS, HABITAT, LOCALITIES, OCCURRENCE AND RANGE. DESCRIPTIONS OF BIVALVES INCLUDE HINGE AREA, PALLIAL LINE AND INTERIOR.

SOME ADDED FEATURES THAT THE REVIEWER LIKED WERE THE 4 1/2 PAGE GLOSSARY OF MALACOLOGICAL TERMS; THE PHYSICAL DESCRIPTION OF THE TEXAS COAST; SEVERAL MAPS SHOWING ACCESS HIGHWAYS AND READILY IDENTIFIABLE COLLECTING SITE FROM GALVESTON TO SOUTH PADRE ISLAND; AND, A BIBLIOGRAPHY OF REFERENCES RELATING TO TEXAS MOLLUSCA. (THERE IS, HOWEVER, NO REFERENCE TO ANY MATERIAL PUBLISHED IN THE TEXAS CONCHOLOGIST.)

ALTHOUGH VARIOUS PORTIONS OF THE BOOK MIGHT BE CRITICIZED (FOR EXAMPLE, THE INCLUSION OF MANY PAGES OF MATERIAL WHICH, IN THIS REVIEWER'S OPINION, WERE EXTRANEIOUS AND IRRELEVANT TO THE TITLE OF THE BOOK; THE LACK OF STATED RATIONALE FOR SELECTION OF SOME MICROMOLLUSKS AND OFFSHORE SPECIES AND NOT OF OTHERS FOR DESCRIPTION; LACK OF PRESENTATION OF "DIFFERENTIAL DIAGNOSTIC POINTS" AMONG



CLOSELY RELATED OR SIMILARLY APPEARING SPECIES; THE OMISSION OF ANY COMPARISON OF TEXAS SUBSPECIES WITH SUBSPECIES FOUND IN OTHER GEOGRAPHIC AREAS AS , FOR EXAMPLE , IN THE CASE OF THE BAY SCALLOP , RIBBED MUSSELS AND QUAHOGS) , THE OVER-ALL DATA PRESENTATION IS SUCH THAT THE PURCHASER SHOULD BE WELL SATISFIED.

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A FRUITFUL DAY AT THE BEACH

BY SAM AND FANNIE MIRON

ALL SHELL COLLECTORS DREAM OF THE DAY WHEN THEY WILL GO TO THE BEACH AND COME BACK LOADED WITH LIVE SEA SHELLS OF ALL KINDS. FRIDAY, DECEMBER 17, 1971, TURNED OUT TO BE JUST SUCH A DAY FOR US. THE TIDE TABLES FORCAST A MINUS 0.5 LOW TIDE AT 9:36 IN THE MORNING. WE STARTED OUT EARLY IN THE MORNING AND DECIDED TO GO TO THE EAST BEACH SOUTH JETTIES AT GALVESTON. THE DAY WAS OVERCAST, FOGGY IN PATCHES, WITH THREAT OF RAIN FROM THE WEATHERMAN AND THE TEMPERATURE ABOUT 45 DEGREES. WHEN WE GOT TO THE JETTIES AT AROUND 9 A.M. THE WATER WAS FAIRLY WELL OUT, DENSE FOG REDUCED VISIBILITY TO LESS THAN A HALF BLOCK BUT THAT SOON LIFTED. THE BEACH WAS STREWN WITH RIVER DRIFT. WE HEADED FOR THE ROCKS AT THE JETTIES AND EACH OF US SPOTTED A LIVE MUREX FULVESCENS ON THE ROCKS. SHORTLY AFTER WE EACH FOUND AN ADDITIONAL MUREX IN THE WATER BY THE ROCKS. FOUR ADDITIONAL MUREX FULVESCENS WERE DUG UP FROM THE SANDS ON THE BEACH UP TO ABOUT A QUARTER OF A MILE FROM THE JETTIES. LARGE COCKLES AND PEN SHELLS WERE BEING WASHED IN BY THE WAVES AND AS THE TIDE TURNED SOON THERE WAS EVIDENCE OF A HOST OF OTHER MOLLUSKS PRESENT BY THE TRAILS AND MOUNDS VISIBLE IN THE SAND ON THE BEACH. WE FOUND OURSELVES IN A SHELLER'S PARADISE, AND WE KEPT BUSY FILLING OUR BUCKETS, RETURNING TO THE CAR TO EMPTY THEM, AND GOING OUT FOR ANOTHER LOAD. ALL IN ALL, WE FOUND SOME 17 DIFFERENT LIVE MOLLUSKS, EACH IN ABUNDANCE TO MAKE THE TRIP A VERY GRATIFYING EXPERIENCE.

BELOW ARE LISTED THE VARIETIES OF SPECIMENS WE FOUND ALIVE THAT DAY.

- PENSHELLS - MOST OF THEM LARGE, SOME WITH BYSSUS
- WHELKS - (BUSYCON CONTRARIUM AND BUSYCON SPIRATUM)
- QUAHOGS - (MERCENARIA MERCENARIA TEXANA)
- LARGE COCKLES - (DINOCARDIUM ROBUSTUM)
- MUREX FULVESCENS
- BOAT SHELLS - (CREPIDULA FORNICATA) FOUND ON DEAD MOON SNAILS AND DEAD WHELKS
- SLIPPER SHELLS - (CREPIDULA PLANA) FOUND ON THE INSIDE OF DEAD SHELLS
- MOON SNAILS - (POLINICES DUPLICATUS)
- DOSINIA DISCUS -
- ARKS - (ANADARA BRASILIANA)
- CANTHARUS CANCELLARIUS
- SURF CLAMS
- OLIVES
- ROCK SHELLS - (THAIS HAEMASTOMA FLORIDANA AND HAYSAE)
- DONAX
- 2 STAR FISH (CHANNEL SIDE OF JETTIES ON THE SAND BY THE ROCKS.)
- FALSE MUSSEL (CONGERIA LEUCOPHAETA) FOUND AT 61ST ST. - OFFATS BAYOU AS WE RETURNED HOME.

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AT THE NOVEMBER MEETING DR. HAROLD HARRY IDENTIFIED TWO SHELLS SENT BY MRS. OPAL RIEDEL OF GALVESTON. SINCE BOTH ARE UNCOMMONLY FOUND ON OUR SHORES IN PAIRS OR ALIVE, MRS. RIEDEL'S FINDS DESERVE REPORTING TO OUR MEMBERS. IN RESPONSE FOR MORE INFORMATION, MRS. RIEDEL HAS WRITTEN DETAILS WHICH ARE ALSO WORTHY OF MENTION.

HER ONE SPECIMEN (FRESH DEAD PAIR) OF POLYMESODA CAROLINIANA (BOSC, 1830) AND TWO SPECIMENS (COLLECTED ALIVE AND KEPT IN AN AQUARIUM FOR OBSERVATION) OF CALLOCARDIA TEXASIANA (DALL, 1892) WERE COLLECTED SEPTEMBER 13, 1971, AFTER HURRICANE FERN NEAR JAMAICA BEACH (WEST BEACH OF GALVESTON ISLAND). OPAL WRITES "IT WAS A LARGE SWIRL OF LITTLE WORM TUBE-LIKE CREATURES, SOME ALIVE, LEFT FROM THE EARLY A. M. LOW TIDE. THE TIDE WAS COMING IN, AND I HAD TO LOOK FAST AS SOON ALL WOULD BE TAKEN BACK TO SEA. INTERESTINGLY, MOST OF THE BEACHES WERE SLICK -- NOTHING! IN THIS LARGE SWIRL I FOUND MANY LIVE SHELLS -- COCKLES, PENS, TELLINS, ARKS, AUGERS, ONE WENTLETRAP, LIVE DUCK CLAMS, ETC. . . . ALSO TWO AMAEA MITCHELLIS, ONE OLD, THE OTHER SMALL AND LOVELY!

OTHER COLLECTING NOTES ARE AS FOLLOWS: ONE LIVE TRICOLIA AFFINIS CRUENTA ROBERTSON, 1958, IN SCRAPINGS OF ALGAE FROM ROCKS ON JETTIES AT SOUTH PADRE ISLAND, CHANNEL SIDE, COLLECTED BY THE MIRONSONS IN NOVEMBER; ONE LIVE LITTORINA MELEAGRIS (POTIEZ AND MICHAUD, 1838) FROM THE SAME ROCKY AREA A WEEK LATER IN NOVEMBER COLLECTED BY CONSTANCE BOONE; ONE LIVE SMARAGDIA VIRIDIS VIRIDEMARIS (MAURY, 1917) COLLECTED CRAWLING IN THE SAND ON THE BAR IN THE SOUTH PADRE CHANNEL NEAR THE LORAN STATION BY MARY FOOTE WHO CAME TO ASK HER COMPANIONS IF THERE WAS SUCH A THING AS A GREEN SHELL! THESE THREE SHELLS ARE REPORTED PARTICULARLY BECAUSE THEY ARE HARD TO LOCATE ALIVE IN THAT AREA SINCE BEULAH. IT IS NICE TO KNOW THEY ARE STILL LIVING THERE.

LEOLA GLASS COLLECTED A SLIGHTLY DAMAGED BUT WHOLE PAIR OF CALLOCARDIA TEXASIANA ON THE BOLIVAR FLATS IN THE DEBRIS ON JANUARY 6. IT WAS THERE IN THE SAND AT VERY LOW TIDE AT THE NOVEMBER FIELD TRIP THAT FANNIE MIRON DUG A BEAUTIFUL LIVE MACOMA CONSTRICTA (BRUGUIERE, 1792). CONSTANCE BOONE AND LEOLA GLASS WENT DIGGING AND WALLOWING IN THE STICKY MUD IN THE INLET AT THE GALVESTON RECREATIONAL PARK ON THE FERRY END OF BOLIVAR TO HUNT FOR ANGEL WINGS ON JANUARY 6. BOONE DUG HER FIRST PHOLAS CAMPECHIENSIS GMELIN, 1792, A THREE-INCH SPECIMEN, HER FIRST RECOVERED OTHER THAN FROM WASHED UP WOOD. LIVE SPECIMENS OF PETRICOLA PHOLADIFORMIS (H. ODE' HAS WRITTEN IN THIS PAPER THAT THIS IS REALLY GRACILIS) WERE COLLECTED BY BREAKING UP CLODS OF THE MUD DUG OUT WITH A SPADE. CONSTANCE BOONE COLLECTED A LIVE BALCIS CONOIDEA KURTZ AND STIMPSON, 1851 ON DECEMBER 31 IN A SAND TRAIL NEAR GALVESTON SOUTH JETTIES. (THIS NAME IS DEEMED CORRECT FOR THIS KEELED SHELL WITH STRAIGHT APEX BY H. ODE' DESPITE RECENT PUBLISHED MATERIAL SYNONYMIZING THIS WITH MELANELLA JAMAICENSIS.)

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Texas

# CONCHOLOGIST

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FEBRUARY, 1972

## NOTES & NEWS

MAY 31 1989

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### FEBRUARY MEETING ON CORALS

WE CAN BE SURE OF AN EXCELLENT PROGRAM ON WEDNESDAY, FEBRUARY 23, BECAUSE CHARLIE DOH WILL BE THE SPEAKER. HE HAS BEEN A MEMBER OF OUR SOCIETY MANY YEARS AND HAS PRESENTED FASCINATING PROGRAMS IN THE PAST. IN COOPERATION WITH LARRY EVANS, A RICE GRADUATE STUDENT AND UNDERWATER PHOTOGRAPHER, MR. DOH WILL GIVE US AN ILLUSTRATED TALK ON CORALS. HE WILL ALSO BRING A LARGE DISPLAY OF CORALS FROM HIS FABULOUS COLLECTION.

THE MEETING WILL BE AT 8 P.M. AT THE HOUSTON MUSEUM OF NATURAL SCIENCE. PLEASE FEEL FREE TO BRING YOUR FRIENDS. GUESTS ARE ALWAYS WELCOME.

### JANUARY MINUTES

FRITZ LANG, SECRETARY

MEETING WAS CALLED TO ORDER AT 8 P.M., JANUARY 26, WITH LLOYD MEISTER PRESIDING. ABOUT 33 MEMBERS WERE PRESENT.

PAUL HUDSON GAVE THE TREASURER'S REPORT. GENERAL FUND NEW BALANCE WAS \$1365.86. LIBRARY FUND STANDS AT \$80.20.

AMONG THE VISITORS PRESENT WERE DELSSON CONWAY FROM COASTAL BEND SHELL CLUB, CHUCK SPIVEY FROM HOUSTON, DR. DOROTHEA MANGUM AND JOHN BLOM-SHIELD OF BRAZORIA COUNTY. VISITORS WERE WELCOMED BY CHAIRMAN AND MEMBERS.

LLOYD MEISTER REPORTED THE DATES OF THE SHELL FAIR ARE MAY 11, 12, 13 AT THE SHARPSTOWN MALL. THESE DATES WERE ACCEPTED WITHOUT PROTEST FROM THE MEMBERS. LLOYD ASKED MEMBERS TO DISPLAY SHELLS, AND TO COOPERATE WITH COMMITTEE CHAIRMAN RUTH GOODSON WHEN SHE CALLS ON THEM.

DR. W. W. SUTOW REPORTED FOR THE LIBRARY COMMITTEE, SHOWING NEW BOOKS BOUGHT FOR THE SOCIETY, AND PERIODICALS WE RECEIVE. DR. SUTOW GAVE COMMENTARY AND BRIEF REVIEWS OF THESE FINE BOOKS AND MAGAZINES.

DOUG REYNOLDS REPORTED A FIELD TRIP TO EAST BEACH, GALVESTON JETTY ON SATURDAY, JANUARY 29, 8 A.M.

DR. HELMER ODÉ REPORTED THE NEED FOR A TYPIST. HELMER HAS 200 PAGES OF BEACH NOTES AND NEEDS HELP FROM SOMEONE WHO TYPES, AS HE IS A "ONE FINGER TYPIST".

DR. SUTOW ANNOUNCED THAT HE HAS RECEIVED TWO PACKAGES OF SPECIMEN SHELLS FROM THE SAIPAN SHELL CLUB.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### SUPER FAMILY PYRAMIDELLACEA (CONTINUED)

STRIOTURBONILLA SP INDET, (B) THIS SPECIES WHICH IS SIMILAR TO THE PREVIOUS ONE, IS WIDESPREAD IN OFFSHORE DREDGINGS, BUT FAR LESS COMMON IN BEACH DRIFT THAN THE PREVIOUS ONE. IT HAS THE TYPICALLY SHOULDERED APPEARANCE AND LARGE BODY WHORL OF THE GENUS. IT IS UNLIKELY THAT, AS WITH SO MANY SPECIES OF MOLLUSKS, IT IS MERELY AN ECOLOGICAL VARIANT OF SP. (A), WHICH IS THE COASTAL FORM, WHEREAS SP. (B) IS THE OPEN SEA FORM. THIS MAY BE T. COMPSA.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, MATAGORDA, PORT ARANSAS.

THE MATERIAL OF CHEMNITZIA IS DIFFICULT TO IDENTIFY AND FOR MOST OF THE REPORTED SPECIES OUR NAMES MUST BE CONSIDERED TENTATIVE.

CHEMNITZIA UNILIRATA BUSH, 1899. THIS IS THE ONLY SPECIES ON THE TEXAS BEACH WHICH IS READILY IDENTIFIED IN THIS GENUS. IT IS CHARACTERIZED BY A SPIRAL RIDGE CLOSE TO THE SUTURE. WE SUSPECT THAT THE SAME SPECIES OCCURS WITHOUT THE SPIRAL (C. ABRUPTA ?), BUT, UNLESS THIS CAN BE DEFINITELY ASCERTAINED WE RESTRICT C. UNILIRATA TO RIDGED FORMS. THE SPECIES IS UNCOMMON IN DRIFT AT PORT ARANSAS AND SOUTH PADRE ISLAND, BUT HAS BEEN TAKEN REGULARLY FROM DREDGED MATERIAL OFF GALVESTON. LIVE MATERIAL IS UNKNOWN TO US.

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS, SOUTH PADRE ISLAND

CHEMNITZIA C.F. ABRUPTA BUSH, 1899. SPECIMENS OF A CHEMNITZIA WHICH RATHER CLOSELY RESEMBLE THIS SPECIES OF BUSH ARE NOT UNCOMMON IN BEACH DRIFT AT PORT ARANSAS AND SOUTH PADRE ISLAND. THE SPECIES IS CHARACTERIZED BY THE SOMEWHAT BLUNTED APICAL ANGLE AND THE MODERATE BACKWARD SLANT OF THE CLOSELY SPACED RIBBLETS. NOT UNCOMMON IN DREDGED MATERIAL OFF GALVESTON. THIS SPECIES POSSIBLY MERGES INTO THE NEXT ONE.

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS, SOUTH PADRE ISLAND.

CHEMNITZIA C.F. INCLINATA BUSH, 1899. THIS SMALL AND SLENDER SPECIES IS CHARACTERIZED BY THE VERY OBVIOUS BACKWARD SLANT OF THE COSTAE. THIS SPECIES MAY BE THE SAME AS C. ABRUPTA, BUT UNTIL WE CAN SAY MORE ABOUT THIS MATTER WE WILL LIST IT HERE. SPECIMENS HAVE BEEN COLLECTED FROM BEACHDRIFT AT PORT ARANSAS AND SOUTH PADRE ISLAND.

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS, SOUTH PADRE ISLAND.

CHEMNITZIA C.F. AEQUALIS CONRAD, 1827. WE HAVE COMBINED MOST OF THE SPECIMENS IN THIS GENUS, WHICH WE FIND IMPOSSIBLE TO CLASSIFY, UNDER THIS NAME. MOST SHELLS HAVE A STRAIGHT REGULAR CONICAL FORM, STRAIGHT RIBBETS AND NONE OF THEM SHOWS A TRACE OF SPIRAL SCULPTURE AND AT MOST UNDER VERY HIGH MAGNIFICATION AN INDICATION OF ROWS OF SMALL PITS CAN BE SEEN. THESE FORMS ARE COMMON IN DRIFT ALL ALONG THE TEXAS COAST AND ALSO IN OFFSHORE DREDGINGS. MANY OF THESE ARE CLOSELY SIMILAR TO THE "SPECIES" DESCRIBED BY BARTSCH FROM THE FLORIDA PLIOCENE.

PREVIOUS REFERENCES: LIST OF GALVESTON MOLLUSKS BY HARRY

LOCALITIES: IN DRIFT ALL ALONG THE TEXAS COAST.

CHEMNITZIA C.F. DALLI BUSH, 1889. IN BEACHDRIFT ALL ALONG THE TEXAS COAST A RATHER COARSELY RIBBED CHEMNITZIA CAN BE FOUND, WHICH IN MATURE SPECIMEN SHOWS A NUMBER OF INTERNAL LIRAE ON THE INNER LIP. THESE ACCOUNT FOR THE TOOTH ON THE OUTER LIP. THE FIGURE OF T. DALLI BY BUSH, 1889, SHOWS A SHELL WHICH IS HARDLY APPROPRIATE FOR OUR MATERIAL IN THAT NO TEXAS MATERIAL EVER SHOWS A CONCAVE OUTLINE OF THE SPIRE. DEAD AND WORN MATERIAL CAN OCCASIONALLY BE OBTAINED FROM DRIFT AT GALVESTON AND ELSEWHERE ALONG THE TEXAS COAST. THESE COARSE FORMS SEEM TO MERGE SOMETIMES INTO FORM CLASSIFIED BY US AS C. AEQUALIS. C. ANTEUSI BARTSCH 1955 APPEARS ALSO VERY CLOSE TO IT.

PREVIOUS REFERENCES: NONE

LOCALITIES: OCCASIONALLY IN DRIFT ALL ALONG THE TEXAS COAST.

CHEMNITZIA C.F. TURRIS ORBIGNY, 1842. A FEW SPECIMENS COLLECTED ALIVE BY MRS. SPEERS AT PORT ARANSAS AND SOME WORN ONES IN THE ODÉ COLLECTION ARE POSSIBLY THIS SPECIES CHARACTERIZED BY COARSE INITIAL WHORLS AND LARGE APICAL ANGLE.

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS

CHEMNITZIA HEMPHILLI BUSH, 1899. A SINGLE SPECIMEN OF THIS DIFFERENT SPECIES WAS OBTAINED FROM DRIFT AT SAN LUIS PASS (COLL. ODÉ). IT MUST BE NOTED THAT THE DRIFT WHICH PRODUCED THIS SHELL WAS HIGHLY UNUSUAL IN COMPOSITION IN THAT IT YIELDED SEVERAL QUITE RARE SPECIES OF PYRAMIDELLIDS NEVER TAKEN BEFORE ON THE BEACH. THE SHELL HAS THE OVERALL APPEARANCE OF C. AEQUALIS BUT IS SOMEWHAT IRREGULARLY BUT CLEARLY CODED IN THE INTERCOSTAL SPACES.

PREVIOUS REFERENCES: NONE

LOCALITIES: SAN LUIS PASS

CHEMNITZIA C.F. HEILPRINI BUSH, 1899. THIS, THE MOST SLENDER AND ONE OF THE SMALLEST OF TEXAS CHEMNITZIA'S HAS BEEN FOUND ONLY A FEW TIMES IN DRIFT AT PORT ARANSAS (COLL. SPEERS, ODÉ).

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS, SOUTH PADRE ISLAND.

#### 4) THE PYRGISCUS COMPLEX.

THIS COMPLEX OF SPECIES IS THE MOST CONFUSING AND BAFFLING ONE OF ALL TEXAS PYRAMIDELLIDS. THE MAIN DIFFICULTY IN THIS GROUP IS THE DELINEATION OF SPECIES. IN THE MATERIAL AVAILABLE TO US IT IS OFTEN VERY DIFFICULT TO STATE WHAT CON-

STITUTES A SPECIES AND WHAT DOES NOT. THE MANY SO-CALLED SPECIES WHICH BARTSCH DESCRIBED FROM THE PLIOCENE OF FLORIDA REPRESENT IN OUR OPINION MERELY VARIANTS OF A MUCH SMALLER NUMBER OF TRULY DIFFERENT SPECIES. AS STATED BEFORE WE HAVE, TOGETHER WITH THIS FAUNA, TWO OTHER FAUNAS RICH IN SPECIES, THE PLEISTOCENE FROM THE CAROLINAS DESCRIBED BY HOLMES AND THE NEW ENGLAND FAUNA DESCRIBED BY VERRILL, BARTSCH AND OTHERS, BOTH OF WHICH CONTAIN MANY SPECIES CLOSELY RESEMBLING TEXAS SHELLS. HOWEVER UNJUSTIFIED THIS MAY BE, WE HAVE DECIDED TO IGNORE THESE PARTICULAR TAXA, AND PREFER TO ATTACH NAMES TO OUR SHELLS GIVEN TO SPECIES FROM THE RECENT CAROLINIAN AND CARIBBEAN PROVINCES. DALL HAS PLACED MANY OF HOLMES' SPECIES IN SYNONYMY WITH RECENT FORMS IN WHICH HE, AS WE ARE INCLINED TO BELIEVE, WAS CORRECT BUT CANNOT PROVE SINCE WE HAVE NOT COMPARED OUR MATERIAL WITH HOLMES' SPECIES. MOST OF DALL'S REMARKS ON THIS COMPLEX ARE STILL FULLY ACTUAL TODAY AS FOR INSTANCE HIS OBSERVATION CONCERNING THE DIFFERENCES IN APPEARANCE BETWEEN FRESH LIVING MATERIAL AND DEAD BEACH SHELLS OF THE SAME SPECIES. FRESHLY DEAD MATERIAL, WHICH HAS LOST ITS SHINE IS OFTEN BEST FOR ILLUSTRATIVE AND DESCRIPTIVE PURPOSES. THIS DIFFERENCE IN APPEARANCE CAUSES DISCREPANCIES IN DESCRIPTION BETWEEN FOSSIL AND RECENT MATERIAL. DALL WAS CONVINCED THAT TOO MANY NAMES WERE EMPLOYED FOR MANY SIMILAR THINGS (T.W.I.S., 1892, P.318): "FOR MYSELF, I BELIEVE, IN THE PRESENT STATE OF SCIENCE THAT MOST STRESS SHOULD BE LAID UPON THE RELATIONSHIP, RATHER THAN TRIFLING POINTS OF DIFFERENCE, SINCE IN THE DUSTCLOUD OF NAMES APPLIED TO EVERY INDIVIDUAL MUTATION ALL GENERIC PRINCIPLES BECOMES OBSCURED." THE TROUBLE IS HERE TO FIND OUT WHAT ARE THE TRIFLING POINTS AND WHAT ARE THE ESSENTIAL POINTS OF DIFFERENCE. HOWEVER, THERE CAN BE LITTLE DOUBT THAT THE CONFUSED TREATMENT GIVEN BY MANY AUTHORS TO THIS COMPLEX OF SPECIES AND THE UNSYSTEMATIC DESCRIPTION OF NEW SPECIES CONFIRMS ANOTHER OF DALL'S STATEMENTS (T.W.I.S., P.356): "AND FOR THIS REASON I FEEL STRONGLY THAT THE UNDUE MULTIPLICATION OF MERE NAMES IS A SERIOUS STUMBLING BLOCK IN THE WAY OF PROGRESS OF THE SCIENCE. A NAME IS A HANDLE AND A THING NEEDS ONE OR AT MOST TWO HANDLES TO BE PROPERLY MANAGED. IF IT BRISTLES WITH HANDLES LIKE A PORCUPINE WITH QUILLS WE ARE NECESSARILY DRIVEN TO LET IT ALONE, AND THEY SERVE NO GOOD PURPOSE." IN SPITE OF THIS THE NUMBER OF SPECIES PROBABLY IS RATHER LARGE ON THE TEXAS BEACH AND AT A GUESS, TWICE THE NUMBER OF SPECIES OCCURS IN OFFSHORE WATERS.

WE LIST HERE BRIEFLY SOME CATEGORIES USED TO SEPARATE SPECIES IN THE PYRGISCUS COMPLEX.

- 1) SCULPTURE ON THE LATE BODY WHORLS. QUITE VARIED ARE: VERTICAL RIBBING, HORIZONTAL SPIRALS, GROOVING ON THE BASE. IN SOME SPECIES MICROSCOPIC PUNCTATIONS, AXIAL STRIAE OR RETICULATIONS CAN BE SEEN UNDER HIGH MAGNIFICATION. THE TERMINATION OF SCULPTURE ON THE PERIPHERY OR ITS CONTINUATION OVER THE BASE HAS BEEN CONSIDERED QUITE IMPORTANT. SLANTING OF THE RIBS MAY VARY. THE CROSS SECTION OF THE RIBS CAN BE ROUNDED OR BE SQUARISH. THE MOST VARIABLE ASPECT OF THE ORNAMENTATION IS EXPRESSED BY THE MANY PATTERNS OF SPACING OF THE SPIRAL GROOVES OR INCISED LINES. WHETHER ALL THESE DIFFERENT PATTERNS OF SPIRAL ARRANGEMENT SHOULD BE DENOTED BY DIFFERENT TRIVIAL NAMES APPEARS TO US UNLIKELY.
- 2) CHARACTERS OF THE APERTURE. IN THE PUBLISHED LITERATURE HAVE BEEN MENTIONED: SHAPE OF APERTURE, PRESENCE OF PERISTOME, DEGREE OF FOLDING ON COLUMNELLA, DENTICLES ON INNER LIP, AND DEPRESSION OF THE UMBILICAL REGION. ALL THESE CHARACTERS SEEM SUBJECT TO CONSIDERABLE VARIATION.

3) CHARACTERS OF GENERAL SHAPE. THESE ARE OF UNCERTAIN VALUE. THE SHAPES CAN BE DESCRIBED AS: CONICAL, SPINDLE, PUPOID, NEEDLE, CORONATED. THE APICAL ANGLE WHICH OFTEN DETERMINES THE APPARENT SLENDERNESS OF THE SHELL IS POSSIBLY IN SOME SPECIES QUITE VARIABLE. VERY PUZZLING IS SOMETIMES THE VARIABILITY IN SIZE. APPARENTLY MATURE SPECIMENS OF AN EQUAL NUMBER OF WHORLS CAN DIFFER BY A FACTOR OF TWO IN LINEAR SCALE. THESE ARE USUALLY CONSIDERED AS DIFFERENT SPECIES, A CUSTOM WE WILL FOLLOW, BUT ARE RATHER DOUBTFUL ABOUT. ANOTHER CHARACTER IS THE RATIO OF THE LENGTH OF THE BODY WHORL TO THE TOTAL LENGTH OF THE SHELL, A RATIO WHICH THE EYE IS VERY SENSITIVE. THE PRECISE FORMATION OF THE SUTURE APPEARS ALSO QUITE VARIABLE. ITS DEPTH DEPENDS ON THE INFLATION OF THE WHORLS AND ALSO OFTEN ON THE MANNER IN WHICH THE VERTICAL RIBS TERMINATE. IN SOME SPECIES A SHOULD-ERED OR CORONATED EFFECT IS OBTAINED BY THE PRESENCE OF AN EXCEPTION-ALLY WELL-DEVELOPED SPIRAL RIDGE CLOSE TO THE SUTURE, WHILE IN OTHER SPECIES THE SAME EFFECT IS OBTAINED BY THE SUDDEN TERMINATION OF THE VERTICAL RIBLETS.

PHOTOS BY FRANK VAN MORKHOVEN  
TO BE CONTINUED.....



CHEMNITZIA HEMPHILLI? BUSH, 1899.  
5.12 MM., GALVESTON WEST BEACH  
FEB. 1970. BEACH SPECIMEN FROM  
ODÉ COLLECTION.



CHEMNITZIA ABRUPTA BUSH, 1899 OR  
INCLINATA BUSH 1899.  
3.78 MM. PORT ARANSAS CAUSEWAY  
MARCH 10, 1957. BEACH SPECIMEN  
FROM ODÉ COLLECTION.

SHELL COLLECTING IS FUN! STAMP COLLECTING IS ALSO FUN! WHY NOT COMBINE THESE TWO HOBBIES - COLLECT SHELLS ON STAMPS!

PHILATELIC CONCHOLOGY HAS MANY DESIRABLE FEATURES. SOME OF THE RAREST SHELLS CAN BE AT YOUR FINGERTIPS - AVAILABLE WITH A MINIMUM OF COST AND AT NO PHYSICAL RISK. YOU CAN OWN CONUS GLORIA-MARIS, CYPREA AURANTIUM, LAMBIS VIOLACEA, CONUS CLYTOSPIRA, HARPA COSTATA, ENTEMNOTROCHUS RUMPHII (TO NAME A FEW DESIRABLES) - ALL ON STAMPS.

AND THINK OF THE TRANSPORTABILITY AND LACK OF ANY STORAGE PROBLEMS. AN ALBUM OR EVEN TWO OR THREE - ARRANGED IN SEVERAL WAYS - TAKE UP ONLY A SMALL VOLUME OF ANY CLOSET SHELF OR BOOKCASE. AN ENTIRE COLLECTION CAN BE CARRIED AROUND UNDER THE ARM. SCIENTIFICALLY OR ARTISTICALLY, THE DISPLAY CAN BE EMBELLISHED TO ANY DEGREE ONE WISHES. AND ONE CAN JUST ABOUT HAVE A "COMPLETE" COLLECTION. THERE AREN'T THAT MANY SHELL STAMPS ISSUED YET. WITH THE EXCEPTION OF A FEW EARLIEST STAMPS, ALMOST ALL OF THE STAMPS ARE FAIRLY READILY AVAILABLE. THE RECENT (DECEMBER, 1971) RELEASE BY KENYA OF 15 DEFINITIVES, EACH DEPICTING A SEASHELL, SHOULD PROVIDE THE SHELL-STAMP COLLECTOR WITH A RUNNING START.

THERE HAVE BEEN SOME INTERESTING SIDELIGHTS. THE SHARP-EYED COLLECTOR HAS NOTED THAT A NUMBER OF SHELLS SHOWN ON STAMPS WERE LEFT-HANDED. SINISTRAL SPECIMENS OF CONUS STUPA (REPUBLIC OF CHINA), VOLUTA DELESSERTIANA (MALAGASY), MUREX TRIBULUS (MALAGASY), MITRA SPECIES (MALDIVE ISLANDS), CONUS SPECIES (MALDIVE ISLANDS) ARE EXAMPLES. THESE REPRESENT ERRORS ON THE PART OF THE ARTIST. THERE IS AN EXAMPLE OF A SIMILAR SORT OF PETER DANCE'S SHELL COLLECTING WHICH SHOWS A CONUS MARMOREUS ETCHED BACKWARDS (MIRROR-IMAGE) BY REMBRANDT. THE TAIWAN (REPUBLIC OF CHINA) ISSUES OF 1971 REPORTEDLY CAUSED A FUROR AMONG SCIENTIFIC CIRCLES IN TAIWAN. SEVERAL ERRORS WERE CLAIMED FOR THIS GROUP OF STAMPS. ONE INVOLVED MISSPELLING OF "KAWAMURA" FOR "KAWANUMA". ANOTHER WAS THE ALLEGED MISNOMER OF "STUPA" FOR "STUPELLA". A CRITIC CLAIMED THAT ONE OF THE SPECIES LISTED DID NOT OCCUR IN TAIWAN WATERS. AND THERE WAS ALSO THE SINISTRAL PRESENTATION OF THE CONE. BUT THE TAIWAN PHILATELIC AGENCY COULD DO LITTLE ABOUT THE WHOLE THING: MORE THAN 600,000 SETS WERE SOLD ON THE DAY OF ISSUE.

IN PAST ISSUES OF TEXAS CONCHOLOGIST (VOLUME V, PAGES 54, 55, 68, 75, 88, 89, AND 92; AND VOLUME VI, PAGE 53) THERE WERE LISTED SOME 158 STAMPS THAT SHOWED MOLLUSKS IN THE CENTRAL OR INCIDENTAL DESIGNS. SINCE THEN, NEW STAMPS HAVE CONTINUED TO APPEAR SO THAT THIS UPDATED LISTING THAT IS TABULATED BELOW SEEMS TIMELY.

AS USUAL, THE INFORMATION FOR THIS LIST WAS OBTAINED FROM SEVERAL SOURCES (LINN'S STAMP NEWS, TOPICAL TIME, AND SCOTT MONTHLY JOURNAL). THE CATALOG IDENTIFICATION IS THE SCOTT NUMBER. ALSO, THE ENCOURAGEMENT AND HELP FROM SHELL-STAMP COLLECTING FRIENDS SHOULD BE ACKNOWLEDGED - PAUL W. SCHOEN OF JACKSONVILLE, FLORIDA (NOW DECEASED); GEORGE G. MAJOR OF LITTLE ROCK, ARKANSAS (ALSO DECEASED); AND JOHN D'AIUTO OF PALO ALTO, CALIFORNIA. MANY THANKS ARE DUE THEM.



	COUNTRY	FACE VALUE	SCOTT NUMBER	MOLLUSK DEPICTED
159.	ANGUILLA	10¢		TURBAN AND STAR SHELLS
160.	ANGUILLA	15¢		SPINY OYSTER
161.	ANGUILLA	40¢		SCOTCH ROYAL AND SMOOTH SCOTCH BONNET
162.	ANGUILLA	50¢		TRITON TRUMPET
163.	HUNGARY	2 FO	1994	AMMONITE
164.	MALDIVE	10L	283	MITRA PAPALIS
165.	MALDIVE	25L	284	TURBO PETHOLATUS
166.	MALDIVE	1R	286	BARNEA MANILENSIS
167.	MALDIVE	2R	287	MALEA POMUM
168.	SINGAPORE	15¢	112	SEASHELLS
169.	INDONESIA	5R+50s	B219	VOLUTA SCAPHA
170.	INDONESIA	7.50R+		
		50s	B220	CYMATIUM PILEARE
171.	INDONESIA	10R+1R	B221	PTEROCERA LAMBIA
172.	INDONESIA	15R+1.50R	B222	MUREX TERNISPINA
173.	IVORY COAST	15FR	301	MARGINELLA DESJARDINI
174.	IVORY COAST	40FR	303	CONUS GENUANUS
175.	NEW CALEDONIA	1FR	382A	STROMBUS EPIDROMIS
176.	NEW CALEDONIA	10FR	383A	STROMBUS VARIABILIS
177.	NEW CALEDONIA	22FR	C72A	STROMBUS SINUATUS
178.	NEW CALEDONIS	34FR	C73A	STROMBUS VOMER
179.	PHILLIPPINES	5s	1065	TRIDACNA SQUAMOSA
180.	PHILLIPPINES	10s	1066	SPONDYLUS REGIUS
181.	PHILLIPPINES	20s	1067	MUREX PECTEN
182.	PHILLIPPINES	40s	1068	CONUS GLORIA-MARIS
183.	BRITISH INDIAN OCEAN TERR.	1R	41	ALDABRA TREE SNAIL
184.	FRENCH POLYNESIA	2FR	C55	PEARL OYSTER DIVER
185.	FRENCH POLYNESIA	5FR	C56	DIVER COLLECTING OYSTERS
186.	FRENCH POLYNESIA	18FR	C57	IMPLANTATION INTO OYSTERS
187.	FRENCH POLYNESIA	27FR	C58	OPEN OYSTER WITH PEARL
188.	FRENCH POLYNESIA	50FR	C59	MOTHER OF PEARL JEWELRY
189.	NEW CALEDONIA	10FR	384	CYPRAEA CRIBRARIA
190.	NEW CALEDONIA	21FR	386	CYPRAEA TALPA
191.	NEW CALEDONIA	33FR	C74	CYPRAEA ARGUS
192.	NEW CALEDONIA	60FR	C76	CYPRAEA MAPPA
193.	TURKS AND CAICOS	3¢	233	STROMBUS GIGAS
194.	TAIWAN	\$1	1698	TIBIA FUSUS
195.	TAIWAN	\$2.50	1699	HARPEOLA KURODAI
196.	TAIWAN	\$5	1700	CONUS STUPA
197.	TAIWAN	\$8	1701	ENTEMNOTROCHUS RUMPHII
198.	MALAGASY	5FR	439	VOLUTA DELESSERTIANA
199.	MALAGASY	10FR	440	MUREX TRIBULUS
200.	MALAGASY	20FR	441	SPONDYLUS

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IN THE SERIES OF SAMPLE DESCRIPTIONS WHICH I HAVE BEEN REPORTING FROM TIME TO TIME A REMARKABLE ONE IS PRESENTED HERE. IT PERTAINS TO A SAMPLE OF A BASIC COMPOSITION NOT YET REPORTED, BUT WHICH, AS I SUSPECT, IS COMMON IN THE GALVESTON, MATAGORDA AND SAN ANTONIO BAY SYSTEMS. THE SAMPLE, SOMEWHAT LESS THAN A GALLON IN VOLUME, WAS DREDGED IN THE NORTHWEST CORNER OF EAST BAY, FAIRLY CLOSE TO WHERE THE COLORADO RIVER FORMS THE WESTERN BOUNDARY OF EAST BAY, IN ABOUT 10 FEET OF WATER. THE BULK OF THE SAMPLE CONSISTED OF SHELLDEBRIS WITH ONLY MINOR ADMIXTURES OF SAND AND SILT AND APPARENTLY WAS TAKEN FROM AN OLD SHELLBOTTOM. APART FROM A SINGLE SMALL CLUMP OF LIVE OYSTERS, HARDLY ANY OYSTER FRAGMENTS WERE PRESENT IN THE DEBRIS, SO THAT IT APPEARS PROBABLE THAT THE OYSTERS WERE JUST ESTABLISHING THEMSELVES AT THE SAMPLE LOCATION. THIS CONTRASTED WITH OTHER SAMPLES FROM THE SAME AREA WHICH CONTAINED LARGE AMOUNTS OF SILT, FEW SHELL FRAGMENTS OF WHICH MANY DERIVED FROM OYSTERS.

THE SPECIES FORMING THE BULK OF THE SAMPLE WERE:

MULINIA LATERALIS

NUCULANA ACUTA

NUCULANA CONCENTRICA

EULIMASTOMA WEBERI

ACTEON PUNCTOSTRIATUS (?)

PYRGISCUS SPEIRA, INTERRUPTUS AND OBELISCUS

RETUSA CANDEI

MISSING OR ALMOST MISSING WERE MEMBERS OF THE FOLLOWING FAMILIES: ARCIDAE, OSTREIDAE, TELLINIDAE, PHOLADIDAE, CORBULIDAE, MURICIDAE, NATICIDAE AND COLUMBELLIDAE, WHICH OFTEN MAKE UP THE BULK OF THE BAY FAUNA. I SUSPECT THAT A FAUNA OF THIS BASIC TYPE: MULINIA, NUCULANA, RETUSA, PYRAMIDELLIDS IS FAR MORE COMMON IN SOME OF THE TEXAS BAYS THAN IS APPARENT FROM THE PUBLISHED RECORD. SOME SAMPLES TAKEN FROM THE APPROACHES TO CHRISTMAS BAY (GALVESTON BAY SYSTEM) HAVE A COMPOSITION VERY CLOSE TO IT, BUT DIFFER IN THE MUCH LESSER ABUNDANCE OF NUCULANA, BUT SOMEWHAT LARGER NUMBERS OF TELLINS, CORBULAS, THAIS AND NATICAS. IN VIEW OF THESE FACTS THE DESIGNATION OF ALL FAUNAS OF THE COASTAL BAYS AS "OYSTER BOTTOMS" APPEARS UNDESIRABLE, AND I WOULD SUGGEST THAT SUCH A FAUNA AS DESCRIBED HERE, BE CALLED A "MULINIA BOTTOM". I SUSPECT, THAT IT, AS DO THE OYSTER BOTTOMS, SUPPORTS AS A GENERAL RULE A LARGE NUMBER OF SMALLER EPIPHYTIC SPECIES, MAINLY PYRAMIDELLIDS AND VITRINELLIDS.

THE AGE OF THE SHELLS REPORTED HERE IS SOMEWHAT OF A PUZZLE. IT IS CERTAIN THAT MOST OF THE MATERIAL REPORTED IN THIS LIST IS OLD AND DID NOT LIVE AT THE TIME OF COLLECTION. BUT WHETHER IT IS A FEW THOUSANDS OR A FEW TENS OF YEARS OLD I CANNOT SAY.

THE BEST KNOWN FAUNAL LISTINGS FOR THE TEXAS BAYS ARE THOSE OF PARKER. IT MUST BE KEPT IN MIND THAT PARKER SAMPLED THE BAYS AROUND ROCKPORT AND THE LAGUNA MADRE, THAT IS ENVIRONMENTS WHICH IN MANY RESPECTS ARE DIFFERENT FROM THOSE CONSIDERED HERE. BOTH GALVESTON BAY AND EAST MATAGORDA BAY ARE AT PRESENT ESSENTIALLY LOW SALINITY BAYS, OR AT LEAST BAYS IN WHICH THE SALINITY IS REGULARLY SUBJECT TO LARGE VARIATION. THE ENVIRONMENTS PARKER SAMPLED FROM ARE HYPERSALINE DURING THE HOT SUMMER MONTHS AND DURING THE

WINTER THE SALINITY IS NOT MUCH REDUCED BELOW THAT OF THE SEA.

AN INDICATION THAT "MULINIA BOTTOMS" OCCUR WIDESPREAD IN THE GALVESTON AND MATAGORDA AREAS IS PROVIDED BY THE COMPOSITION OF BEACHDRIFT NEAR THE PASSES TO THESE BAYS. THIS CONTAINS LARGE NUMBERS OF THE VITRINELLIDS AND PYRAMIDELLIDS REPORTED HERE. ESPECIALLY PYRGISCUS C.F. SPEIRA, WHICH IS RARE IN BEACHDRIFT AT PORT ARANSAS, BUT QUITE COMMON IN DRIFT AT GALVESTON IS SUCH AN INDICATION.

THE LIST OF SPECIES FOUND IN THE EAST MATAGORDA SAMPLE FOLLOWS BELOW. THE ANNOTATIONS NEED NO FURTHER EXPLANATION, BUT A FEW WORDS MAY BE SAID ABOUT SOME OF THE SPECIFIC DESIGNATIONS. IN THE SERIES "NOTES CONCERNING TEXAS BEACH SHELLS" APPEARING IN EACH ISSUE OF THE TEXAS CONCHOLOGIST, MRS. A. SPEERS AND I WILL DISCUSS ALL PYRAMIDELLID SPECIES FROM TEXAS KNOWN TO US. SEVERAL GENERA AND SPECIES ARE DESIGNATED BY NAMES NOT USUALLY USED IN THE GENERAL LITERATURE. MOST SPECIES ARE OR WILL BE ILLUSTRATED IN THE T. CONCHOLOGIST AND I REFER THE READER TO THESE NOTES FOR FURTHER INFORMATION.

IN THE LIST BELOW LIVE OCCURRENCE IS INDICATED BY A STAR.

NUCULA PROXIMA	SEVERAL WORN VALVES AND FRAGMENTS.
NUCULANA ACUTA	ABUNDANT VALVES AND SEVERAL HINGED PAIRS.
NUCULANA CONCENTRICA	ABUNDANT VALVES AND MANY HINGED PAIRS. NOT ALIVE.
ANADARA OVALIS	TWO WORN VALVES
ANADARA TRANSVERSA	ONE WORN VALVE.
NOETIA PONDEROSA	TWO WORN VALVES
*AMYGDALUM PAPHYRIA	A FEW LIVE JUV. SPECIMENS
*BRACHIDONTES RECURVUS	SEVERAL LIVE SPECIMENS. A FEW OLD FRAGMENTS.
ANOMIA SIMPLEX	OLD VALVES AND FRAGMENTS FAIRLY COMMON
*CRASSOSTREA VIRGINICA	A SINGLE SMALL LIVE CLUSTER. HARDLY ANY FRAGMENTS.
CRASSINELLA LUNULATA	A FEW WORN VALVES
PARVILUCINA MULTILINEATA	A FEW WORN VALVES
ALIGENA TEXASIANA	FRESH VALVES FAIRLY COMMON
MYSELLA PLANULATA	LOOSE VALVES AND HINGED SPECIMENS FAIRLY COMMON.
ENSITELLOPS C.F. CONRICTA	A SINGLE WORN VALVE.
TRACHYCARDIUM MURICATUM	A SINGLE WORN JUV. VALVE
LAEVICARDIUM MORTONI	A FEW WORN JUV. VALVES.
PITAR SP.	A SINGLE JUV. VALVE
CHIONE CANCELLATA	A SINGLE WORN JUV. VALVE
TELLINA VERSICOLOR	A FEW WORN VALVES
ABRA AEQUALIS	A FEW WORN VALVES
CUMINGIA TELLINOIDES	A SINGLE WORN FRAGMENT.
TAGELUS GIBBUS	A FEW VERY FRESH FRAGMENTS. UNDOUBTEDLY ALIVE AT LOCATION.
*MULINIA LATERALIS	ABUNDANT LIVE AND DEAD SPECIMENS
RANGIA CUNEATA	MANY WORN HINGED JUVENILES; NOT SEEN ALIVE.
CYRTOPLEURA COSTATA	A FEW WORN FRAGMENTS

LYONSIA HYALINA	A SINGLE FRESH DEAD SPECIMEN.
*PANDORA TRILINEATA	A FEW WORN VALVES AND A SINGLE LIVE SPECIMEN.
*LITTORIDINA SPHINCTO- STOMA	ABUNDANT LIVE AND DEAD SPECIMENS.
VIOSCALBA LOUISIANAE	A SINGLE WORN SPECIMEN
"HYDROBIA" BARRETTI	WORN SPECIMENS COMMON.
HENRYA SP.	A FEW WORN SPECIMENS.
CAECUM PULCHELLUM	WORD DEAD SPECIMENS COMMON.
CAECUM "GLABRUM"	A FEW FRESHLY DEAD SPECIMENS.
VITRINELLA FLORIDANA	WORN DEAD SPECIMENS COMMON; A FEW FRESH
VITRINELLA (?) SP.	TWO VERY FRESH SPECIMENS. THIS SPECIES HAS SO FAR NEVER BEFORE BEEN FOUND IN THE BAYS, BUT HAS BEEN DREDGED ONCE ALIVE IN GREAT QUAN- TITY OFFSHORE FREEPORT.
ANTICLIMAX PILSBRYI	A SINGLE WORN SPECIMEN.
TEINOSTOMA BISCAYNENSE	WORN SHELLS VERY COMMON; SOME FRESH LOOKING
TEINOSTOMA SP. (CRYPTOSPIRA?)	WORN SHELLS FAIRLY COMMON. SEE LATER REMARKS.
TEINOSTOMA LEREMA	A FEW WORN SPECIMENS.
SOLARIORBIS BARTSCHI	A SINGLE WORN SPECIMEN.
VERMICULARIA FARGOI	SEVERAL WORN FRAGMENTS
CERITHIUM VARIABILE	TWO WORN JUV. SPECIMENS.
BITTIUM VARIUM	THREE WORN SPECIMENS.
*CERITHIOPSIS GREENI	SEVERAL LIVE SPECIMENS
TRIPHORA NIGROCINCTA	A FEW WORN JUVENILE.
EPITONIUM RUPICOLA	A NUMBER OF FRAGMENTS. THIS SPECIES INVADES THE BAYS FARTHER THAN ANY OTHER EPITONIUM.
EPITONIUM SP.	A FEW WORN UNIDENTIFIABLE JUV. SPECIMENS.
CREPIDULA PLANA	A FEW FRESH JUVENILES
ANACHIS OSTREICOLA	TWO WORN SPECIMENS
*NASSARIUS ACUTUS	SOME LIVE SPECIMENS
TEREBRA SP.	A SINGLE UNIDENTIFIABLE FRAGMENT.
*PYRGOCYTHARA PLICOSA	MANY DEAD, SOME LIVE SPECIMENS.
PYRGOCYTHARA HEMPHILLI	A FEW DEAD SPECIMENS.
*ACTEON PUNCTOSTRIATUS (?)	ABUNDANT. SEVERAL ALIVE. VERY SMALL FORM WITH CORONATED SHAPE, WHICH MIGHT BE SPECIFI- CALLY DIFFERENT.
*RETUSA CANDEI	ABUNDANT. MANY ALIVE.
*BALCIS HEMPHILLI	SEVERAL, SOME ALIVE.
*MENESTHO IMPRESSA	COMMON, SEVERAL ALIVE
MIRALDA BUSHIANA	A FEW WORN SPECIMENS.
*FARGOA DIANTHOPHILA	COMMON, MANY ALIVE
*ODOSTOMIA GIBBOSA	MANY WORN SPECIMENS, ONE ALIVE.
*EULIMASTOMA WEBERI	ABUNDANT, MOST COMMON GASTROPOD. MANY ALIVE
*EULIMASTOMA TERES	SEVERAL WORN SPECIMENS; A FEW FRESH; ONE ALIVE
*EULIMASTOMA CANALI- CULATA	COMMON; MANY OLD, A FEW ALIVE.
EVALEA EMERYI	A FEW OLD SPECIMENS
SAYELLA SP.	TWO WORN SPECIMENS
SAYELLA SP.	TWO WORN SPECIMENS
BESLA ELEGANS	FAIRLY COMMON. SOME FRESH.
CHEMNITZIA AEQUALIS	COMMON, OLD AND WORN; ONE FRESH.
*PYRGISCUS INTERRUPTUS	ABUNDANT. A FEW ALIVE.

PYRGISCUS OBELISCUS	COMMON, NO LIVE ONES.
PYRGISCUS SPEIRA	MOST ABUNDANT TURBONILLA, FRESH, BUT NOT ALIVE.
PYRGISCUS CEDROSUS	A FEW WORN SPECIMENS.
PYRGISCUS RETICULATUS	COMMON, BUT WORN AND DISCOLORED.
*PYRGISCUS CONRADI	SEVERAL FRESH AND LIVE ONES.
PYRGISCUS TEXTILIS	A SINGLE WORN SPECIMEN
PYRGISCUS SP.	FAIRLY COMMON, BUT NOT ALIVE.
DENTALIUM TEXASIANUM	A FEW WORN FRAGMENTS.

OF THE 78 REPORTED SPECIES NO LESS THAN 20 ARE PYRAMIDELLIDS, A FAIR NUMBER OF THEM ALIVE. THIS RAISES THE QUESTION: HOW DO THESE ANIMALS FEED? IN THE SAMPLE THERE WAS VERY LITTLE MUD AND HARDLY ANY REMAINS OF OTHER ORGANISMS WERE OBSERVED. I SUSPECT THAT MOST OF THE REPORTED PYRAMIDELLID SPECIES SUSTAIN THEMSELVES ON ORGANIC MATERIAL SECRETED BY MICRO-ORGANISMS WHOSE EXISTENCE IS MADE POSSIBLE BY THE PRESENCE OF EXPOSED SHELLSURFACES OF DEAD VALVES OF MULINIA AND NUCULANA. MANY OF THESE VALVES APPEARED AS IT WERE TO BE GLUED TOGETHER WITH A MATRIX OF FINE SANDGRAINS HELD TOGETHER BY A SLIGHTLY STICKY SUBSTANCE. I CONSIDER IT UNLIKELY THAT MOST OF THESE SPECIES FED DIRECTLY ON LIVE BIVALVES.

A NUMBER OF SPECIES IN THE ABOVE LIST IS UNLIKELY TO LIVE AT PRESENT AT THE SAMPLE LOCATION. AMONG THESE ARE: NUCULA PROXIMA, PARVILUCINA MULTILINEATA, PITAR SP., VERMICULARIA FARGOI AND CERITHIUM VARIABLE. IT IS POSSIBLE THAT THESE SPECIES STILL LIVE IN THE MAIN BODY OF WATER OF MATAGORDA AND LAVACA BAYS.

A FINAL REMARK CONCERNS THE LISTING OF TEINOSTOMA CRYPTOSPIRA. AMONG THE PLENTIFUL MATERIAL OF TEINOSTOMA BISCAYNENSE TWO CLEARLY DIFFERENT FORMS COULD BE DISCERNED: ONE WITH A HUMP IN THE OVERGLAZING CALLUS AND ONE WITHOUT THIS HUMP, SO THAT THIS FORM APPEARS FLATTER. IT IS POSSIBLE THAT BOTH FORMS ARE DIFFERENT.

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REVIEW: D. E. HARPER, ECOLOGICAL STUDIES OF SELECTED LEVEL-BOTTOM MACRO-INVERTEBRATES OFF GALVESTON, TEXAS. PH.D. THESIS, 300 P., TEXAS A AND M UNIVERSITY, MARINE SCIENCE, TEXAS, 1970. BY H. ODE

THIS THESIS PRESENTS AN INTERESTING PICTURE OF THE NEARSHORE FAUNA OFF GALVESTON, TEXAS. IN IT ARE, APART FROM OTHER MARINE ORGANISMS, DISCUSSED IN SOME DETAIL 40 SPECIES OF MOLLUSCS, OF WHICH 21 ARE GASTROPODS AND 19 ARE BIVALVES. IN GENERAL THE FINDINGS OF THE AUTHOR CONFIRM MY OWN EXPERIENCES AND INFERENCES FROM BEACH COLLECTING AND OFFSHORE SAMPLES. A NUMBER OF OBSERVATIONS ON LIVE ANIMALS ARE NEW TO ME, AS FOR INSTANCE THE OBSERVATION THAT JUVENILE SPECIMENS OF ANADARA BRASILIANA HAVE A SYMBIOTIC RELATIONSHIP WITH NASSARIUS ACUTUS. IT IS UNFORTUNATE THAT NO FIGURES OF THE DESCRIBED SPECIES ARE OFFERED, BECAUSE OF TAXONOMIC UNCERTAINTIES. FOR INSTANCE, ODOSTOMIA ACUTIDENS DALL, 1883 IS ONE OF THE FEW PYRAMIDELLIDS DISCUSSED. THIS SPECIES DOES NOT, AS FAR AS I KNOW, LIVE ALONG THE TEXAS COAST AND I BELIEVE THAT THE AUTHOR REFERS BY THIS TAXON TO Q. GIBBOSA.

THE AUTHOR CONCLUDES THAT MULINIA LATERALIS, TELLINA IRIS, OLIVELLA MUTICA AND PYRAMIDELLA CREMULATA ARE THE MOST CHARACTERISTIC SPECIES ON SANDY BOTTOMS, TEREBRA PROTEXTA THE MOST CHARACTERISTIC SPECIES ON MIXED BOTTOMS AND NUCULANA CONCENTRICA THE MOST CHARACTERISTIC SPECIES ON MUDDY BOTTOMS.

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BOOK REVIEW

BY W. W. SUTOW, M. D.

BROST, F. B. AND COALE, R. D.: A GUIDE TO SHELL COLLECTING IN THE KWAJALEIN ATOLL. RUTLAND, VT. AND TOKYO, JAPAN, CHARLES E. TUTTLE COMPANY. 1971. 157 P. \$4.95.

THIS IS REISSUE OF A BOOK THAT WAS ORIGINALLY SOLD REGIONALLY (MARSHALL ISLANDS) IN 1968. THE INITIAL PUBLICATION WAS LARGER (9 X 11 INCHES) AND WAS SPIRALLY BOUND, BETWEEN SOFT COVERS. THE BOOK SOLD OUT RAPIDLY.

THE REISSUE (3 YEARS LATER) IS A SOFT COVER BOOK, 7 3/16 X 8 1/4 INCHES. THE TEXT (AS FAR AS THE REVIEWER IS ABLE TO TELL) REMAINS THE SAME. THE 33 PLATES, ALL BLACK AND WHITE, ARE THE SAME BUT HAVE BEEN REDUCED ABOUT 40% IN SIZE. 217 SPECIES ARE DESCRIBED.

THE CONTENTS RELATE TO SHELLS THAT ARE FOUND IN THE KWAJALEIN ATOLL. A RELATIVE SCARCITY VALUE IS ASSIGNED FOR EACH SPECIES BUT THESE MUST BE CAREFULLY EVALUATED IN TERMS OF LOCAL AVAILABILITY. STROMBUS SINUATUS, FOR EXAMPLE, IS CONSIDERED TO BE RARER THAN STROMBUS TAURUS. MANY SPECIES CONSIDERED TO BE RARE IN THE KWAJALEIN ATOLL ABOUND IN OTHER AREAS OF THE MARSHALL ISLANDS.

AT THE TIME OF THIS REVIEW, KWAJALEIN ATOLL IS A RESTRICTED AREA AND ACCESS TO THE ATOLL IS GENERALLY NOT POSSIBLE. EVEN IN THE ATOLL, LOCAL REGULATIONS REGARDING SHELLING ACTIVITIES MUST BE OBSERVED. BUT FOR THE LUCKY SHELLERS WHO HAVE THE OPPORTUNITY TO SHELL THERE, THIS BOOK SHOULD BE A USEFUL CHECK-LIST AND GUIDE. THE COMMONLY FOUND SHELLS ARE LISTED AND DESCRIBED AND LOCAL COLLECTING SITES ARE MENTIONED BY NAME.

TO A MUCH MORE LIMITED DEGREE, THE BOOK MAY SERVE AS A MANUAL FOR OTHER MARSHALL ISLAND ATOLLS. THE INCLUSION OF A NUMBER OF BIVALVES IN THE DESCRIPTIONS PROVIDES INFORMATION NOT ALWAYS AVAILABLE.

THE PLATES ARE MUCH MORE UNIFORMLY REPRODUCED IN THE NEW BOOK. THE DESIGNS ON THE SHELLS APPEAR TO BE MORE SHARPLY SHOWN. THE ONLY DRAWBACK (WHICH WAS PRESENT IN THE ORIGINAL EDITION) IS THE LOSS OF DETAIL IN THE SMALLER SHELLS, SINCE BOTH LARGE AND SMALL SHELLS HAVE BEEN PHOTOGRAPHED ON THE SAME PLATES.

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CONTINUED FROM PAGE 61.....

MEETING WAS TURNED OVER TO ANELLA DEXTER, WHO INTRODUCED DR. DOROTHEA MANGUM OF ANGLETON.

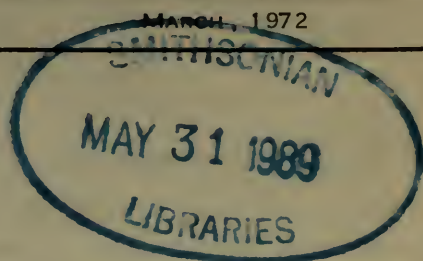
DR. MANGUM SPOKE ON INVERTEBRATES AND NUDIBRANCHIA IN A NEW AND INTERESTING WAY THAT HELD THE ATTENTION OF EVERY MEMBER. SHE SHOWED 3 FILMS OF UNUSUAL CLARITY AND COLOR - EXCELLENT VIEWS OF THESE INTERESTING LITTLE LIFE FORMS, ALSO BEAUTIFUL SCENERY NEAR GUAYMAS, ON SAN CARLOS BAY. WE ENJOYED DR. MANGUM IMMENSELY AND THANK HER FOR THE VISIT!

Texas

# CONCHOLOGIST

VOLUME VIII, No. 7

## NOTES & NEWS



### MARCH 22 MEETING ON GULF SURVEY

DR. HELMER ODÉ AND HAROLD GEIS WILL PRESENT A TALK ON THE PROGRESS OF THE MOLLUSK POPULATION SURVEY OF THE NORTHWEST GULF OF MEXICO, ILLUSTRATED BY A SERIES OF COLOR SLIDES OF LITTLE KNOWN MOLLUSKS FROM THAT AREA, AT THE MEETING MARCH 22 AT 8 P.M. AT THE HOUSTON MUSEUM OF NATURAL SCIENCE.

### MINUTES OF THE FEBRUARY MEETING

BY FRITZ LANG, SECRETARY

A NOMINATING COMMITTEE WAS APPOINTED WITH FAY DRYDEN AS CHAIRWOMAN AND MARY LEE BIVONA, CHARLIE DOH AND LAURENCE DEXTER AS MEMBERS.

THE ANNUAL GALVESTON SHELL SHOW WAS ANNOUNCED TO TAKE PLACE IN THE MARINE CORPS AUDITORIUM NEAR THE GALVESTON FERRY LANDING ON APRIL 29 FROM 1 TO 6 P.M. AND APRIL 30 FROM 10 A.M. TO 5 P.M. MEMBERS WERE INVITED TO ENTER EITHER THE COMPETITIVE OR NON-COMPETITIVE PARTS OF THE SHOW.

A SHELL BOOK PURCHASED IN THE HAGUE, HOLLAND, BY HELMER ODÉ WAS PRESENTED TO THE CLUB'S LIBRARY.

DR. W. W. SUTOW REPORTED ADDITIONS TO THE LIBRARY AS FOLLOWS:

- 1972 EDITION OF DIRECTORY OF CONCHOLOGISTS
- MARINE SHELLS OF PACIFIC NORTHWEST BY TOM RICE
- LIVING VOLUTES OF AFRICA
- NEW ZEALAND SHELLS
- CATALOG OF THE GENUS MUREX BY EMILY VOKES
- COMPLETE SET OF MALACOLOGICAL REVIEW
- CURRENT MONOGRAPH OF INDO-PACIFIC MOLLUSCA ON LITTORINAS

RUTH GOODSON REPORTED ON THE SHELL FAIR THE CLUB WILL SPONSOR AT SHARPS-TOWN MALL. SHE NEEDS MORE SHOW CASES AND MORE DISPLAYS FROM MEMBERS. ANYONE WHO CAN HELP IS ASKED TO CONTACT HER AT 452-2223.

CHARLIE DOH GAVE A FASCINATING TALK ON CORALS, ILLUSTRATED WITH SLIDES. HE WAS ASSISTED BY LARRY EVANS OF RICE UNIVERSITY WHO PRESENTED SLIDES OF LIVING CORALS, SOME EXCELLENT COLOR PHOTOS OF LIVING CORAL WITH EXTREME CLOSEUPS OF THE BEAUTIFUL VARIETIES OF POLYPS.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### SUPER FAMILY PYRAMIDELLACEA (CONTINUED)

- 4) COLOR CHARACTERS. THESE WE CONSIDER TO BE UNRELIABLE. COLOR PATTERNS VARY BETWEEN UNIFORM PATTERNS OF DULL WHITE OVER UNIFORM YELLOW TO UNIFORM DARK BROWN COLORS, SOMETIMES WITH BANDS OF DARKER HUES, OR TO CLEARLY AND DISTINCTLY BANDED FORMS WITH ONE OR TWO BROWN BANDS.
- 5) NUCLEAR CHARACTERS AND EARLY POST NUCLEAR WHORLS. SURPRISINGLY SELDOM MENTIONED IN THE LITERATURE ARE THE CHARACTERS OF THE EARLY POST-NUCLEAR WHORLS. THEY HAVE SERVED US OFTEN TO MAKE A DISTINCTION BETWEEN SPECIES. AS NUCLEAR CHARACTERS WE LIST HERE: THE DEGREE TO WHICH THE DISC-LIKE NUCLEUS IS IMMERSSED IN THE EARLY POST-NUCLEAR WHORLS AND THE SUDDENNESS AT WHICH THE VERTICAL RIBBING BEGINS ON THE POST-NUCLEAR WHORLS. IN SOME THE "APEX" OF THE DISC IS HARDLY VISIBLE ABOVE THE RIM OF THE POST-NUCLEAR WHORLS, IN OTHERS IT IS ELEVATED HIGH ABOVE IT.

IT IS HARDLY NECESSARY TO REMARK THAT SEPARATION OF SPECIES ON ANY SINGLE ONE OF THE ABOVE CHARACTERS ONLY WILL LEAD TO CONFUSION. IT WOULD HAVE BEEN MUCH EASIER TO DISCUSS THE PYRGICUS COMPLEX IF WE HAD HAD AT OUR DISPOSAL ONLY A SMALL NUMBER OF LOTS FROM THE BEACH. BUT BECAUSE WE HAVE CRITICALLY COMPARED ABOUT 200 LOTS FROM THE BAYS AND BEACHES AND ABOUT TWICE AS MANY FROM THE OFFSHORE THE TASK OF CREATING ORDER OUT OF CHAOS HAS NOT SUCCEEDED WELL. MANY OF THE "SPECIES" SEEM TO MERGE IN THE MOST ASTOUNDING MANNER AND APPEAR TO FORM AS IT WERE A MULTIDIMENSIONAL CONTINUUM. WHEN ONE DRAWS A FEW SAMPLES AT RANDOM FROM SUCH A CONTINUUM THE IMPRESSION IS CREATED THAT ONE DEALS WITH SEPARATE FORMS. HOWEVER, WHEN THE SAMPLING BECOMES MORE COMPLETE ONE'S ABILITY TO ASSIGN TRIVIAL NAMES TO THE SAMPLES DIMINISHES UNTIL WITH VERY COMPLETE SAMPLING ONE ENDS UP IN COMPLETE CONFUSION. THIS DOES NOT MEAN THAT EXTENSIVE SAMPLING DOES NOT YIELD SOME INTERESTING RESULTS. WE CAN DEFINITELY SAY THAT SEVERAL FORMS IN OUR COLLECTIONS REPRESENT SEPARABLE SPECIES WITH A PREDICTABLE RANGE OF VARIABILITY.

AS A MATTER OF CONVENIENCE WE HAVE GROUPED THE TEXAS MATERIAL OF THE PYRGICUS COMPLEX INTO A NUMBER OF CATEGORIES, EACH OF WHICH CONTAINS SPECIES WHICH ARE CLOSELY RELATED, IF NOT IDENTICAL. THE FIRST OF THESE WHICH IS A CLOSELY KNIT ONE, CONTAINS SHELLS, WHICH HAVE FINELY SCULPTURED EARLY POST-NUCLEAR



WHORLS, AND ARE WHITE OR SLIGHTLY YELLOWISH IN COLOR. IT IS HERE DESIGNATED AS THE "INTERRUPTUS" COMPLEX, MAINLY ON THE STRENGTH OF A REFERENCE BY DALL (T.W.F.I.S., 1892) TO THIS SPECIES FROM GALVESTON, TEXAS.

A SECOND COMPLEX OF SHELLS COMPRISES SOMEWHAT DIFFERENTLY SHAPED SHELLS AS FAR AS THE EARLY POST-NUCLEAR WHORLS ARE CONCERNED. THESE ARE LESS VARIABLE AND MUCH MORE SUDDENLY AND COARSELY RIBBED. THIS COMPLEX IS HERE DESIGNATED AS THE "RETICULATUS-TEXTILIS" GROUP. ALSO THE NUCLEUS IS MORE DEEPLY IMMERSED IN THE EARLY POST-NUCLEAR WHORLS AND FRESH SHELLS DISPLAY COLOR PATTERNS.

THERE REMAINS A NUMBER OF SPECIES WHICH ARE DIFFICULT TO CLASSIFY. WE BELIEVE THAT AT LEAST TWO DIFFERENT GROUPINGS CAN BE MADE. MOST OF THESE SPECIES LIVE IN DEEPER OFFSHORE WATERS, BUT A FEW SPECIES HAVE BEEN FOUND IN BEACHDRIFT. THESE TWO GROUPINGS ARE HERE RATHER ARBITRARILY DESIGNATED AS THE "CONRADI" AND THE "FLAVOCINCTA" GROUP. WE CANNOT REALLY JUSTIFY THESE DESIGNATIONS.

IT IS POSSIBLE THAT MUCH OF THE MATERIAL AT OUR DISPOSAL, COLLECTED ALONG THE PORT ARANSAS AND PORT ISABEL CAUSEWAYS, IS FOSSIL AND DOES NOT OCCUR ALIVE ALONG THE TEXAS COAST. BEFORE DISCUSSING THESE GROUPINGS IN MORE DETAIL WE WANT TO EMPHASIZE AGAIN THE VERY UNCERTAIN NATURE OF THE TAXA USED BY US.

IT MAY BE HELPFUL TO LIST HERE THE FOLLOWING TAXA WHICH ARE KNOWN TO US FOR THE WESTERN ATLANTIC; THE LIST IS UNDOUBTEDLY INCOMPLETE.

- ACICULA HOLMES, 1859. P. PL. FOSS. S. CAR., P. 86, PL. 13, FIGS. 10, A, B.  
PLACED BY DALL IN SYNONYMY WITH T. INTERRUPTA TOT-  
TEN.
- ALFREDI ABBOTT, 1958. MON. 11, ACAD. NAT. SCI., PHILA., P. 104, TEXT FIG. 5
- ANIRA BARTSCH, 1927. PROC. U.S.N.M., VOL. 70 (2667), P. 84.
- AREOLATA VERRILL, 1873. REPT. U.S. COMM. FISH, FISHERIES. PT. 1, P. 658.  
SEE ALSO BARTSCH, 1909, PROC. BOST. SOC. NAT. HIST.  
VOL. 34 (4), PL. 12, FIGS. 19, 24.
- ASPERULA BUSH, 1899. PROC. ACAD. NAT. SCI., PHILA. P. 151, 176. SEE ALSO  
VERRILL AND BUSH, 1900; TRANS. CONN. ACAD. SCI.,  
VOL. 10, P. 530, PL. 65, FIG. 23.
- BUTEONIS BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 89,  
PL. 12, FIGS. 17, 28, 34.
- CANCELLATA HOLMES, 1859. P. PL. FOSS. S. CAR., P. 85, PL. 13, FIGS. 7A-B.
- CAROLINIATA HOLMES, 1859. P. PL. FOSS. S. CAR., P. 86, PL. 13, FIGS. 9A-B  
DALL BELIEVED THIS POSSIBLY TO BE SYNONYMOUS WITH T.  
RETICULATA ADAMS.
- CASCOENSIS BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 95,  
PL. 12, FIGS. 29, 40.
- CEDROSA DALL, 1883. PROC. U.S.N.M., 6 (384), P. 330, PL. 10, FIG. 11.  
DESCRIBED AS A PARTHENIA.
- CHIPOLANA DALL, 1892. T.W.I.F.S., VOL. 3, PT. 2, P. 258. (MIOCENE FOSSIL)
- CONOMA BARTSCH, 1927. PROC. U.S.N.M., VOL. 70, (2667), P. 83.
- CONRADI BUSH, 1899. PROC. ACAD. NAT. SCI., PHILA., P. 145-177, PL. 8,  
FIG. 10.
- COSTULATA VERRILL, 1873. REPT. U. S. COMM. FISH, FISHERIES, PT. 1, P. 658.  
RENAMED MIGHELSI BY BARTSCH, 1909.

- DISPAR PILSBRY, 1897. PROC. ACAD. NAT. SCI., PHILA., VOL. , P. 256, PL. 6, FIGS. 5-7
- EDWARDENSIS BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 96, PL. 12, FIGS. 20, 25.
- ELECTRA BARTSCH, 1927. PROC. U. S. N. M., VOL. 70 (2667), P. 78.
- ELEGANS ORBIGNY 1842. SEE ABBOTT AND WARMKE, CAR. SEASHELLS, P. 148, PL. 26, FIG. 3. BUSH, 1899, PROC. ACAD. NAT. SCI., DOUBTED THAT THIS IS A TURBONILLA. PLACED BY US IN THE GENUS BESLA.
- ELEGANS VERRILL, 1872. AM. J. SCI., SER. 3, VOL. 3, P. 282, PL. 6, FIG. 4, RENAMED ELEGANTULA BY VERRILL.
- ELEGANTULA VERRILL, 1882. TRANS. CONN. ACAD. SCI., VOL. 5, P. 538, SEE ALSO: BARTSCH, 1909, PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 84, PL. 12, FIGS. 30, 31.
- ELEGANTULA BRANFORDENSIS BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34(4), P. 85, PL. 12, FIG. 27.
- ENNA BARTSCH, 1927. PROC. U.S.N.M., VOL. 70, (2667), P. 81.
- EXARATA HOLMES, 1859, P. PL. FOSS. S. CAR., P. 82, PL. 13, FIGS. 2, 2A, 2B. RENAMED T. VIRGATA BY DALL.
- EXILIS C. B. ADAMS, 1850. CONTR. TO CONCH., P. 74. SEE ALSO: DALL, 1889, BULL. U.S.N.M., NO. 31 AND DALL, 1892, T.W.I.F.S., VOL. 3, PT. 2, P. 256.
- FASCIATA ORBIGNY, 1847 (?), VOY. AM. MERID., P. 496, PL. 76, FIGS. 4-6. SEE ALSO: BUSH, 1899, PROC. ACAD. NAT. SCI., PHILA., P. 155, 175 AND TRANS. CONN. ACAD. SCI., VOL. 10, P. 530.
- FLAVOCINCTA C. B. ADAMS, 1850. CONTR. TO CONCH., 5, P. 74. SEE ALSO: BUSH, 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 175.
- FULVOCINCTA (JEFFREYS) DALL, SEE: BUSH, 1899, PROC. ACAD. NAT. SCI., PHILA. VOL. 51, 1. 174. (NOT OF THOMPSON, WHICH IS EUROPEAN).
- GRANDIS VERRILL, 1885. FROM: JOHNSON, PROC. BOST. SOC. NAT. HIST., VOL. 40, 1, P. 88.
- HAYCOCKI DALL AND BARTSCH, 1911. PROC. U.S.N.M., VOL. 40 (1820), P. 280, PL. 35, FIGS. 6, 6A.
- HECUBA DALL AND BARTSCH, 1913. BULL. VICT. MEM. MUS., VOL. 1, P. 141, PL. 10, FIG. 6.
- HYBRIDUS BARTSCH, 1955. SMITH. MISC. COLL., VOL. 125 (2), P. 57, PL. 10-14, FIG. 1-61.
- IDOTHEA BARTSCH, 1927. PROC. U.S.N.M., VOL. 70, (2667), P. 82.
- INCISA BUSH, 1899. PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 156, PL. 8, FIG. 2.
- INCISA CONSTRICTA BUSH, 1899. IBID., P. 157.
- INSULARIS DALL AND SIMPSON, 1901. MOLL. PORTO RICO, P. 415, PL. 53, FIG. 21.
- INTERRUPTA STIMPSON. SEE DALL, 1885. NO FURTHER INFORMATION.
- INTERRUPTA TOTTEN, 1835. AM. J. SC., 1ST. SER., 28, P. 352, FIG. 7. SEE ALSO: HOLMES, 1859, P. 83, PL. 13, FIGS. 4, A, B, AND BARTSCH, 1909, PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 87, PL. 12, FIGS. 18, 23.
- KURTZII MAZYCK, 1913. CAT. MOLL. S. CAR., CONTR. CHARL. MUS. 2.
- LATIOR C. B. ADAMS, 1850. CONTR. TO CONCH., 5, P. 72. SEE ALSO: BUSH, 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 176. PLACED BY DALL IN SYNONYMY WITH T. PUPOIDES.

- LETA BARTSCH, 1927      PROC. U.S.N.M., VOL. 70 (2667), P. 80.
- LINEATA HOLMES, 1859      P. PL. FOSS. S. CAR., P. 85, PL. 13, FIGS. 7 A-B.  
MENTIONED AS SYNONYM OF T. FULVOCINCTA (JEFFREYS)  
DALL, NOT THOMPSON, BY BUSH 1899, PROC. ACAD. NAT.  
SCI., PHILA., VOL. 51, P. 174.
- LOUISAE CLARKE, 1954.      NAUTILUS, VOL. 67, P. 118, PL. 9
- MIGHELSI BARTSCH, 1909      PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 88,  
PL. 14, FIGS. 52, 54. NEW NAME FOR T. COSTULATA  
VERRILL.
- MINOR BUSH      NO FURTHER INFORMATION.
- MIONA BARTSCH, 1927.      PROC. U.S.N.M., VOL. 70 (2667), P. 83.
- MODESTA C. B. ADAMS, 1850. CONTR. TO CONCH., 8, P. 132, 133. DESCRIBED AS A  
TRUNCATELLA.
- MULTICOSTATA C. B. ADAMS, 1850. CONTR. TO CONCH., 5, P. 72, SEE ALSO: DALL,  
1892, T.W.I.F.S., VOL. 3, PT. 2, P. 261.
- MYIA BARTSCH, 1927.      PROC. U.S.N.M., VOL. 70 (2667), P. 81.
- NEMEA BARTSCH, 1927.      IBID. P. 78.
- NONICA BARTSCH, 1927.      IBID. P. 82.
- OBELISCUS C. B. ADAMS, 1850. CONTR. TO CONCH., P. 72. SEE ALSO: DALL,  
T.W.I.F.S., VOL. 3, PT. 2, P. 261. NOT T. OBELIS-  
CUS GOULD 1861 WHICH WAS RENAMED T. SECURA BY DALL  
1906.
- ORNATA ORBIGNY, 1853.      HIST. L'ISLE CUBA, 1, P. 221. ATLAS, PL. 16, FIGS.  
18-20. (NOT GOULD 1861).
- PALMERAE AGUAYO AND JAUME, 1936. PUB. MEM. SOC. CUBANA HIST. NAT.,  
VOL. 10, P. 119, FIGS. 1-3.
- PEILEI DALL AND BARTSCH, 1911. PROC. U.S.N.M., VOL. 40 (1820), P. 280, PL.  
35, FIGS. 9, 9A.
- PERLEPIDA VERRILL 1885      FROM JOHNSON, PROC. BOST. SOC. NAT. HIST., VOL. 40,  
1, P. 88.
- PHRYKALEA WATSON, 1885. CHALLENGER REPT., 15, P. 493, PL. 32, FIG. 7.  
CONSIDERED BY BUSH SYNONYMOUS WITH T. PUPOIDES.
- PILSBRYI BUSH, 1899      PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 151,  
PL. 8, FIG. 9. NOT BARTSCH 1955.
- POCOHONTASAE HENDERSON AND BARTSCH 1914. PROC. U.S.N.M., VOL. 47 (2055),  
P. 415, PL. 14, FIG. 4.
- PORTORICANA DALL AND SIMPSON 1901. MOLL. PORTO RICO, P. 414, PL. 53, FIG. 15,
- POWHATANI HENDERSON AND BARTSCH, 1914. PROC. U.S.N.M., VOL. 47 (2055),  
PL. 13, FIG. 5.
- PROTRACTA DALL, 1889.      U.S.N.M., BULL. 37, NO. 612; T.W.I.F.S., VOL. 3,  
PT. 2, P. 260-262, PL. 13, FIG. 11A.
- PUNCTA C. B. ADAMS, 1850. CONTR. TO CONCH., 5, P. 72; SEE ALSO: BUSH, 1899,  
PROC. ACAD. NAT. SCI., PHILA., P. 162, 174; VERRILL  
AND BUSH, TRANS. CONN. ACAD. SCI., VOL. 10, P. 530,  
PL. 64, FIGS. 19, 19A.
- PUNCTA OBSOLETA DALL, 1892. T.W.I.F.S., VOL. 3, PT. 2, P. 256.
- (VIRIDARIA VAR?) PUNICEA DALL, 1883. PROC. U.S.N.M., 6, P. 332. SEE ALSO:  
DALL, 1892, T.W.I.F.S., VOL. 3, PT. 2, P. 261.
- PUPOIDES ORBIGNY 1842.      MOLL. CUBA, 1, P. 224. (ATLAS, 1842, PL. 16, FIG.  
32, 36). SEE ALSO: BUSH, 1899, PROC. ACAD. NAT.  
SCI., PHILA., P. 152, 176, PL. 8, FIG. 5.
- PUPOIDES ISCHNA VERRILL AND BUSH, 1900. TRANS. CONN. ACAD. SCI., VOL. 10,  
PL. 15, FIG. 22.
- PYRRHA BUSH, 1899.      PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 160,  
PL. 8, FIG. 1. (NOT OF BARTSCH, 1927).



4.68 MM. , SOUTH PAORE ISLAND  
AT BRIDGE , FEB. 27 , 1965

5.68 MM. , PORT ARANSAS CAUSEWAY ,

- PYRRHA BARTSCH , 1927. PROC. U.S.N.M. , VOL. 70 (2667) , P. 78.
- QUINQUESTRIATA HOLMES , 1859. P. PL. FOSS. S. CAR. , P. 85 , PL. 13 , FIGS. 5 ,  
A , B. PLACED BY DALL IN SYNONYMY WITH INTERRUPTA  
TOTTEN.
- RATHBUNI VERRILL AND SMITH , 1880. AM. J. SCI. , SER. 3 , VOL. 20 , P. 389. SEE  
ALSO: BARTSCH , PROC. BOST. SOC. NAT. HIST. , VOL. 34 ,  
(4) , PL. 12 , FIGS. 33 , 37.
- RETICULATA C. B. ADAMS , 1850. CONTR. TO CONCH. , P. 75.
- RETICULATA CINGULATA DALL , 1892. T.W.I.F.S. , VOL. 3 , PT. 2.
- RHEA BARTSCH , 1927. PROC. U.S.N.M. , VOL. 70 (2667) , P. 79.
- RIISEI MORCH , 1875. SYN. MOLL. IND. OCC. , P. 165. (NOT OF DALL , 1889.)
- RIISEI DALL , 1889. SEE SYNONYMY T. INTERRUPTA IN T.W.I.F.S. , PT. 3.
- RUFA PHILIPPI , 1836. MOLL. SIC. 1 , P. 156 , PL. 9 , FIG. 7 , (IS EUROPEAN)
- RUFA FULVOCINCTA JEFFREYS. P.Z.C. , P. 356.
- RUSHII BUSH , 1899. PROC. ACAD. NAT. SCI. , PHILA. , VOL. 51 , P. 160 ,  
PL. 8 , FIG. 11. (URUGUAY)
- SIRENA BARTSCH , 1927. PROC. U.S.N.M. , VOL. 70 (2667) , P. 79.



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GALVESTON, FEB. 1970



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MARCH 12, 1957

- SPEIRA RAVENEL, 1859. PROC. ELLIOT SOC. NAT. HIST., 1, P. 280. SEE ALSO:  
HOLMES, 1859, P. PL. FOSS. S. CAR., P. 82, PL. 13,  
FIGS. 1, 1A AND DALL, 1892, T.W.I.F.S., VOL. 3,  
P. 25.
- SPIRATA KURTZ AND STIMPSON, PROC. BOST. SOC. NAT. HIST., 4, P. 151,  
ACCORDING TO DALL, 1885.
- STIMPSONI BUSH, 1899. PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 156, PL.  
8, FIG. 7.
- SUBCARINATA ORBIGNY SEE DALL, 1885.
- SUBCORONATA HOLMES, 1859. P. PL. FOSS. S. CAR., P. 87, PL. 13, FIG. 12A-B,  
DALL HAS INDICATED A POSSIBLE SYNONYMY WITH PUPOIDES.
- SUBSTRIATA C. B. ADAMS, 1850. CONTR. TO CONCH., 5, P. 73-74. SEE ALSO:  
TRYON, MAN. 8, P. 330, P. 176, FIG. 21 AND BUSH,  
1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 164.
- SUBULATA AD. SEE DALL, 1855. NO FURTHER INFORMATION.
- SUBULATA HOLMES, 1859. P. PL. FOSS. S. CAR., P. 85, PL. 13, FIGS. 8A-B.  
PLACED BY DALL IN SYNONYMY WITH INTERRUPTA TOTTEN.

TO BE CONTINUED.....

RECENTLY, I SPENT SOME TIME IN THE LIBRARY LOOKING FOR BACKGROUND LITERATURE ON THE SOURCE OF ANTICANCER DRUGS. SUCH DRUGS MAY COME FROM VARIOUS SOURCES. TWO OF THE MOST USEFUL DRUGS (VINCRIStINE AND VELBAN) IN THE TREATMENT OF CANCER TODAY ARE EXTRACTED FROM THE COMMON PERIWINKLE PLANT. SOME DRUGS WITH ANTICANCER AND ANTIBIOTIC PROPERTIES ACTUALLY HAVE BEEN ISOLATED FROM MOLLUSKS. FOR EXAMPLE, THE SUBSTANCE "PAOLIN" FROM ABALONES AND EXTRACTS OF MERCENARIA HAVE SHOWN ANTICANCER ACTIVITIES IN LABORATORY STUDIES. (THESE INTERESTING ITEMS HAVE BEEN MENTIONED IN THESE PAGES PREVIOUSLY.)

WHILE BROWSING THROUGH THE STACKS, I CAME ACROSS SEVERAL PUBLICATIONS THAT HAD TO DO WITH ANOTHER ASPECT OF THE BIOPHYSIOLOGICAL CHARACTERISTICS OF MOLLUSKS, THAT IS, THE TOXINS AND VENOMS PRODUCED BY MOLLUSKS. SINCE THIS IS AN UNUSUAL SUBJECT, I JOTTED DOWN THOSE REFERENCES WHICH ARE LISTED BELOW:

1. LANE, C. E.: TOXINS OF MARINE ORIGIN. ANNUAL REVIEW OF PHARMACOLOGY 8:409-426, 1968.
2. RUSSELL, F. E.: MARINE TOXINS AND VENOMOUS AND POISONOUS MARINE ANIMALS. ADVANCES IN MARINE BIOLOGY. 3:255-384, 1965.
3. HALSTEAD, B. W.: POISONOUS AND VENOMOUS MARINE ANIMALS OF THE WORLD. U. S. GOVERNMENT PRINTING OFFICE. 3 VOLUMES. 1966.
4. CONFERENCE ON BIOCHEMISTRY AND PHARMACOLOGY OF COMPOUNDS DERIVED FROM MARINE ORGANISMS. ANNALS OF NEW YORK ACADEMY OF SCIENCES. 90:617-949, 1960.
5. RUSSELL, F. E. AND SAUNDERS, P. R. (EDITORS): ANIMAL TOXINS. A COLLECTION OF PAPERS PRESENTED AT THE FIRST INTERNATIONAL SYMPOSIUM ON ANIMAL TOXINS. ATLANTIC CITY, N. J. APRIL 9-11, 1966.

DRAMATIC EPISODES OF FATAL CONE STINGS HAVE BEEN WELL DOCUMENTED. AMONG THE CONES CONSIDERED TO BE MOST DANGEROUS ARE CONUS AULICUS, C. GEOGRAPHUS, C. STRIATUS AND C. TEXTILE. SYMPTOMATIC CONE STINGS HAVE BEEN INFLICTED BY C. MARMOREUS, C. OBSCURUS, C. LIVIDUS, C. OMARIA AND EVEN C. PULICARIUS. OTHER SPECIES OF CONES THAT ARE THOUGHT TO BE POTENTIALLY DANGEROUS INCLUDE C. REGIUS, C. GLORIA-MARIS, C. SPONSALIS, C. IMPERIALIS AND C. SPURIUS.

OTHER MOLLUSKS MAY CONTAIN HIGHLY TOXIC SUBSTANCES IN SOME PART OF THEIR BODY. THE CARNIVOROUS NEPTUNEA ARTHRITICA AND N. ANTIQUA ELABORATE TOXIC SECRETIONS IN THEIR SALIVARY GLANDS. INTOXICATION HAS OCCURRED AFTER INGESTING THESE MOLLUSKS AS WELL AS N. INTERSCULPTA, MUREX TRUNCULUS, MUREX BRANDARIS AND ARGOBUCCINUM OREGONENSE ALSO PRODUCE TOXIC SUBSTANCES. EVEN THE OCTOPUS, WHICH IS EATEN WIDELY BY MANY PEOPLE THROUGHOUT THE WORLD, IS KNOWN TO ELABORATE A "CEPHALO-TOXIN" IN THEIR SALIVARY GLANDS. THIS SUBSTANCE IS ESPECIALLY TOXIC TO CRUSTACEANS AND PLAYS A SIGNIFICANT ROLE IN THE PREDATORY ACTIVITIES OF THE OCTOPUS.

WILSON, B. R. AND GILLET, K.: AUSTRALIAN SHELLS. RUTLAND, VERMONT AND TOKYO, JAPAN. CHARLET E. TUTTLE COMPANY. COPYRIGHT 1971. FIRST TUTTLE EDITION, 1972. 168 PAGES. \$21.50.

AT LONG LAST, HERE IS A BOOK THAT DOES FULL JUSTICE TO THE SPARKLING ARRAY OF SEASHELL BEAUTIES THAT TYPIFY THE AUSTRALIAN MOLLUSCAN FAUNA. THE REVIEWER STRONGLY RECOMMENDS THAT EVERY COLLECTOR OF INDO-PACIFIC AND AUSTRALIAN SEASHELLS OBTAIN A COPY OF THIS BOOK.

WITH CONCISENESS AND CLARITY AND WITH GOOD ORGANIZATION, THE INTRODUCTORY SECTION PROVIDES GENERAL COMMENTS ON CLASSIFICATION, BIOLOGY, ANATOMY, SHELL CHARACTERISTICS AND GEOGRAPHIC DISTRIBUTION. 600 SPECIES IN 34 FAMILIES ARE THEN DESCRIBED AND ILLUSTRATED. THE DESCRIPTIONS ARE PROFESSIONAL IN CONTENT. THE AVERAGE SIZE OF EACH SHELL IS NOTED. RELATIVE ABUNDANCE OF THE SPECIES IS ESTIMATED. THE GENERAL DISTRIBUTION AS WELL AS SPECIFIC AUSTRALIAN DISTRIBUTION ARE INDICATED. ALL OF THE SHELLS ARE DEPICTED IN OUTSTANDING COLOR PLATES. THE MAGNIFICATION INDEX IS SHOWN FOR EACH PLATE. A GOOD BIBLIOGRAPHY IS INCLUDED

THE BOOK IS LIMITED IN SCOPE - ONLY THE GASTROPODS ARE DISCUSSED. AND EVEN AMONG THE GASTROPODS, ONLY CERTAIN SPECIES ARE DESCRIBED. ACCORDING TO THE AUTHORS, "CERTAIN FAMILIES OF SPECIAL INTEREST" HAVE BEEN SELECTED. THE GREATEST EMPHASIS IS PLACED ON THREE FAMILIES: VOLUTIDAE, CYPRAEIDAE, AND, CONIDAE. BUT THE OTHERS HAVE NOT BEEN NEGLECTED. MOST OF THE "USUAL" SPECIES AND MANY OF THE "RARITIES" ARE SHOWN.

THIS BOOK IS BIG - 9 1/4 BY 11 3/4 INCHES. THE COLOR PLATES ARE BEAUTIFUL AND CLEAR. (THE BOOK WAS PRINTED IN JAPAN.) PARTICULARLY STRIKING ARE THE MANY VIVID AND ARRESTING COLOR PHOTOGRAPHS OF THE LIVING MOLLUSKS IN THEIR NATIVE HABITATS. THE UNDERWATER PLATES ARE OUTSTANDING AND THE MANY FULL PAGE REPRODUCTIONS WILL TAKE AWAY THE READER'S BREATH.

SELDOM HAS THIS REVIEWER BEEN SO IMPRESSED BY THE COMPETENCE OF THE AUTHORS AND BY THE TECHNICAL SKILL THAT WENT INTO THE PUBLICATION OF THE VOLUME. BY ALL MEANS, ADD THIS BOOK TO YOUR LIBRARY. THIS IS A BOOK NOT ONLY TO BE USED BUT ALSO ONE TO BE ENJOYED. FROM THE MOMENT YOU SEE THE MUREX CORNUCERVI (MUREX MONODON) LITERALLY LEAPING OUT AT YOU FROM A BACKGROUND OF THE FOAMING SURF ON THE FRONT OF THE JACKET COVER UNTIL YOU CLOSE THE BOOK ON THE DRAWING OF LAMBIS CHIRAGRA ON THE BACK OF THE COVER, YOU ARE IN FOR A SUSTAINED TREAT.

oooOooo

WE WILL GO BEACHCOMBING ON APRIL 16TH ON SURFSIDE BEACH. MEET AT 9 O'CLOCK AT FISHING PIER WITH BUCKETS AND SHOVELS. LEADER: D. REYNOLDS.

TUESDAY, OCTOBER 26, 1971 - A SHELL COLLECTOR WHO IS ON VACATION IS APT TO OVERLOOK AREAS WHERE HE CAN FIND LIVE MOLLUSKS. WITH ALL THE RUSH IN PACKING AND GETTING AWAY, THE BEST SIGHT AT THE END OF THE FIRST DAY IS THE MOTEL WHERE HE WILL STAY AFTER A LONG DAY'S DRIVE FROM HOME. ON THIS PARTICULAR TRIP, AFTER STOPPING AT THIS SAME MOTEL ON PREVIOUS TRIPS, FIRST DAY OUT, I CANVASSED THE AREA OUTSIDE THE MOTEL AND FOUND WE WERE ON AN ESTUARY OF MOBILE BAY. I SAW REEDS GROWING AT THE WATER'S EDGE AND LOOKED FOR LITTORINA IRRORATA AND SAW SOMETHING THAT LOOKED DIFFERENT. UPON CLIMBING DOWN THE BULKHEAD AND WADING A DISTANCE, WHAT I SAW WAS NERITINA RECLIVATA. SCRUTINIZING THE BOGGY BOTTOM, I SPIED A BIT OF A BIVALVE WHICH TURNED OUT TO BE A RANGIA CUNEATA; I LOOKED FURTHER AND FOUND A SECOND ONE. BY THAT TIME, IT WAS NEARLY DARK, THE MOSQUITOES WERE THICK AND I WAS ABOUT TO LOSE MY SHOES IN THE BOGGINESS, ALSO THE WATER WAS OILY, SO I CLIMBED BACK UP THE BULKHEAD.

ON THE SECOND DAY OF DRIVING, BERKELEY AND I ARRIVED AT OUR DESTINATION, PANAMA CITY, FLORIDA, WHICH REPRESENTED TWO WEEKS OF SHELLING FOR ME AND MUCH BOAT WATCHING FOR HIM. TOWARD EVENING THERE WAS A KNOCK ON THE DOOR OF OUR MOTEL APARTMENT AND, UPON OPENING THE DOOR, THERE APPEARED A TWENTY-YEAR-OLD YOUNG MAN WHOM WE HAD MET THERE FOUR YEARS PREVIOUSLY, AND, WITH HIM, A YOUNG FRIEND TO WHOM WE WERE INTRODUCED AND HE HELD OUT HIS HAND TO ME AND IN IT WAS A LARGE (4 1/2 INCH) LIVE SPECIMEN OF CYMATIUM COSTATUM, ALL HAIRY AND BEAUTIFUL, WHICH HE PRESENTED TO ME, A PERFECT STRANGER. MY DAY WAS MADE.

FOR THREE DAYS TIDES WERE HIGH, BUT I WADED AND SCOOPED WITH A LONG-HANDLED NET AND FOUND MANY SPECIES OF MINIATURE MOLLUSKS. I FOUND NO LARGER SHELLS. I THINK THE MOLLUSKS WERE UNDERGROUND OR IN DEEPER WATER DUE TO THE COLD WEATHER. ON FRIDAY, I WAS DELIGHTED TO FIND THE COMMON STARFISH, ASTERIAS FORBESI, UNDER A BRIDGE, WHERE I WADED NEAR THE EDGE. ALSO, TO ONE SIDE OF THE BRIDGE, I FOUND A 7-INCH SPECIMEN OF BUSYCON CONTRARIUM, AND, AROUND THE BEND, LITTORINA IRRORATA ON REEDS. BUT, THIS IS AN AREA WHERE I HAVE PREVIOUSLY FOUND MANY SPECIES DURING APRIL AND MAY. AT ANOTHER AREA, ON THE SAME DAY, I FOUND MELOGENA CORONA NEAR THE WATER'S EDGE, AND, EATING ON A DEAD HORSESHOE CRAB, MANY NASSARIUS VIBEX. ON THE CRAB, TOPSIDE AND UNDERNEATH, WERE ABOUT 100 CREPIDULA FORNICATA (SOME VERY LARGE) AND A FEW CREPIDULA PLANA. THAT WAS THE BEST COLLECTING I COULD DO WITH THE TIDE SO HIGH.

A FOURTH DAY OF HIGH TIDES FOUND ME WADED AGAIN WITH A LONG-HANDLED NET AND SCOOPING UP OLD SHELLS, MOSTLY OYSTER, ON WHICH I PICKED OFF TINY MOLLUSKS.

ON SUNDAY, AFTER ATTENDING MASS, BERKELEY AND I DROVE BY OUR YOUNG FRIEND'S HOME AND VISITED WITH HIM AND A FRIEND. THEY OFFERED TO DIVE FOR ME AND TRY TO FIND SOME SHELLS. WE ALL CHANGED TOGS AND I MET THEM AT THE DIVING SPOT BY THE CITY DOCKS. THEY CAME UP WITH SEVERAL MUREX FULVESCENS. I WADED AROUND SOME PILINGS AND PICKED OFF NICE SPECIMENS OF LITTORINA ANGULIFERA, L. NEBULOSA, AND L. IRRORATA. ON ALL THESE PAST FIVE DAYS THERE WERE NORTHEAST WINDS WHICH CAUSED WAVES AND BLURRED VISIBILITY.

FINALLY, ON MONDAY, THE WIND SHIFTED TO THE SOUTH, AND I WAS ABLE TO COLLECT SOMETHING LARGER THAN MINIATURES; HOWEVER, ONLY TWO FASCIOLARIA HUNTERIA.



ON TUESDAY, WITH A NORTHEAST WIND, I COLLECTED THREE FASCIOLARIA HUNTERIA, ONE MUREX FULVESCENS, WHICH WAS TWO FEET UP A PILING, EATING ON OYSTERS. I COULD SEE TRAILS AT LOW TIDE, FOR THE FIRST TIME ON THIS TRIP, AND, WITH A LONG-HANDLED NET, FOUND THE TRAILS TO CONTAIN TEREBRA DISLOCATA, OLIVELLA JASPIDEA, POLINICES DUPLICATUS, MANY NASSARIUS VIBEX, OLIVA SAYANA, PITAR ALBIDA, AND OTHERS. AT ANOTHER LOCATION, I DISCOVERED HUNDREDS, PERHAPS THOUSANDS, OF ASTROPECTEN DUPLICATUS IN THE SAND NEAR THE WATER'S EDGE (I THINK THIS IS THE NAME OF THE GREY STARFISH). I COLLECTED AND TREATED SOME IN A TEN PERCENT FORMALDEHYDE SOLUTION, AFTER FIRST RELAXING THEM IN AN EPSOM SALTS SOLUTION. THERE WERE MANY LITTORINA NEBULOSA ON THE BULKHEAD. TWO FEET ABOVE THE WATER'S EDGE WAS A SIX-INCH FASCIOLARIA TULIPA, DUG IN THE SAND.

ON WEDNESDAY, WITH A NORTH WIND AND -0.3 TIDE, WE WENT TO ST. ANDREW'S STATE PARK AND COLLECTED TWO AQUIPECTEN IRRADIANS CONCENTRICUS SAY (I SAW ONLY ABOUT 6; THEY SEEM TO HAVE DISAPPEARED FROM ST. ANDREW'S BAY THE PAST TWO YEARS; PREVIOUSLY, I FOUND SO MANY THEY SEEMED TO BE A NUISANCE; I KEPT ONE CUT-RIBBED ARK, ANADARA LIENOSA FLORIDANA CONRAD - SCARCE - AND ONE CHIONE CANCELLATA - NUMEROUS; ONE MERCENARIA CAMPECHIENSIS BECAUSE IT WAS RUST-COLORED NEAR SOME SUNKEN IRON RAILS, AND A FEW MINIATURES ON OLD SHELLS. ON SEA SQUIRT I COLLECTED 3 CHIONE GRUS, A CAECUM, AND A MUSCULUS LATERALIS.

ON THURSDAY, THERE WAS A COLD NORTH WIND AND -0.4 TIDE. BERKELEY AND I SHELLED AT ALLIGATOR POINT. WE COLLECTED 1 OR 2 EACH OF FASCIOLARIA TULIPA, OLIVA SAYANA, TRACHYCARDIUM EGMONTIANUM, ATRINA RIGIDA, A LARGE SAND DOLLAR, MELLITA TESTUDINATA. THERE WERE MORE SPECIMENS AND OTHER SPECIES, BUT ALL SHELLS WERE IN TRAILS OR PARTIALLY EXPOSED AT LOW TIDE.

FRIDAY, NOVEMBER 5 WAS A DAY BOTH BERKELEY AND I LOOKED FORWARD TO, BECAUSE WE HAD PLANNED TO SHELL AT ST. JOSEPH'S STATE PARK, A PLACE WE HAD BEEN NEAR BEFORE BUT HAD OVERLOOKED. THE WIND WAS IN THE NORTHEAST AND THE TIDE WAS -0.4 (I THINK YESTERDAY WOULD HAVE EXPOSED MORE SHELLS THAN TODAY). ACRES OF SAND AND GRASS FLATS WERE EXPOSED; IT WAS A SIGHT; MELONGENA CORONA ABOUNDED, BUT WE WERE LOOKING FOR SOMETHING ELSE. WE ENJOYED ALL THE ACTIVITY GOING ON AT VERY LOW TIDE. BERKELEY COLLECTED A BEAUTIFUL ELEVEN-INCH BUSYCON CONTRARIUM WITH AN ALMOST COMPLETELY WHITE PORCELAIN-LIKE MOUTH AND TWO SOMEWHAT SMALLER ONES WITH LOTS OF COLOR. WE CHOSE TWO FASCIOLARIA TULIPA AND F. HUNTERIA - NOT MANY MORE. COULDN'T RESIST PICKING OFF THE LARGE CREPIDULA FORNICATA FROM BIG HORSESHOE CRABS. I PICKED UP A SOFT-SHELLED CRAB WITH TONGS WHICH I FRIED FOR MYSELF, AND A HARD-SHELLED BLUE CRAB WHICH I BOILED FOR BERKELEY. ANOTHER DAY, WE EACH ATE FOR HORS D'OEUVRE A ROCK CRAB CLAW OFF TWO CRABS WE RAN ACROSS. (INCIDENTALLY, WE BOUGHT MORE OF THESE CLAWS AND FLORIDA LOBSTER AND CRAWFISH WHICH WE BROUGHT HOME PACKED IN DRY ICE.) AFTER LEAVING THE PARK, WE STOPPED AT PORT ST. JOE AND I SCOOPED IN THE GRASSES AND PICKED UP MANY OLD SHELLS. SOME OF MY FINDS WERE TWO RETUSA CANDEI, THREE SEILA ADAMSI, ANACHIS SPECIES, CHITONS, AND TURRETS.

I SHELLED VERY WEAKLY ON SATURDAY AS THE TIDE WAS HIGH AGAIN, AND FRIDAY HAD BEEN SUCH A GOOD DAY.

ON SUNDAY, AT THE LOWEST TIDE OF THE DAY, I FOUND AN ALMOST EXPOSED SPOT OF ROCKS, CONCRETE, MANY COKE CHUNKS, SHELL, AND COARSE SAND. AMONG IT WERE VALVES AND PAIRS OF SEMELE PROFICUA. I SUPPOSED THEY HAD BEEN WASHED IN HERE

AND I WISHED FOR SOME, AS I HAD PREVIOUSLY, ONLY A FEW TIMES, FOUND A SINGLE LIVE SPECIMEN IN DRIFT ON THE BEACH AFTER A BLOW. I WONDERED WHERE THEY LIVED. SUDDENLY, WITHOUT REASONING, I BEGAN DIGGING TO ABOUT EIGHT INCHES, AND I NOTICED SOME SMALL LIVE SPECIMENS OF SEMELE PROFICUA AND SOME FINE MATURE SPECIMENS OF CERITHIUM FLORIDANUM. I KEPT DIGGING AND UP CAME SOME LARGE SPECIMENS OF SEMELE PROFICUA, TWO LARGE CHIONE GRUS, CHIONE CANCELLATA, TRACHYCARDIUM EGMONTIANUM, LAEVICARDIUM MORTONI, MERCENARIA CAMPECHIENSIS - AND - ON THE ROCKS I HAD TO MOVE IN ORDER TO DIG WERE ANOMIA SIMPLEX, CREPIDULA FORNICATA, TECTONATICA PUSILLA, OLIVELLA JASPIDEA, PRUNUM APICINUM, SEILA ADAMSI, MITRELLA LUNATA, TURBONILLA INTERRUPTA, DIODORA CAYENENSIS, THREE SPECIES OF TURRETS, AND OTHERS. DIGGING IN A LARGER AREA PRODUCED NOTHING. I FELT LUCKY, PARTICULARLY AFTER GOING BACK THE NEXT DAY AND FINDING NOTHING - THE TIDE WAS MUCH HIGHER AND I SUPPOSE THE MOLLUSKS WERE DEEP IN THE RUGGED GROUND. THIS WAS UNDOUBTEDLY MY MOST EXCITING SHELLING EXPERIENCE OF THE TWO WEEKS.

SHELLING NOW WAS AN ANTI-CLIMAX, BECAUSE FOR THE REMAINDER OF OUR STAY THE TIDES WERE HIGH, THE WATER TURBULENT, AND SCOOPING WITH A NET WHILE WADING WAS THE MOST I COULD DO. THIS ALLOWED FOR PLENTY OF TIME TO COMPLETE CLEANING OUR SHELLS AND PACKING THEM, BEING THANKFUL FOR ALL THE PLEASURES WE ENJOYED DURING THE TWO WEEKS.

P. S. I MUST ADD THIS: I DID NOT ALWAYS MENTION SPECIFIC AREAS WHERE I SHELLED IN PANAMA CITY, FLORIDA BECAUSE I HAVE FOUND LIVING MOLLUSKS IN EVERY LOCATION WHERE I HAVE SHELLED BUT NOT EVERY SPECIES IN THE SAME SPOT EVERY TIME. THE ECOLOGY THERE IS CONSTANTLY CHANGING, AND, NOW (JANUARY, 1972) FROM OUR YOUNG FRIEND COMES THIS NEWS: THE GRAND LAGOON IS NOW BEING DREDGED; ALSO THE PASS BETWEEN THE JETTIES IS BEING DREDGED. YOU KNOW HOW THAT WILL AFFECT THE SHELLING FOR SOME TIME TO COME.

oooOooo

WANTED ! !

FOR THE SHELL FAIR, SHARPSTOWN MALL, MAY 11, 12, 13  
MEAT & VEGETABLE TRAYS - TO USE IN PACKAGING THE SHELLS TO SELL IN  
THE STORE AT THE FAIR.

BAGS - ALL SIZES EXCEPT THE LARGE BAGS USED TO TOTE HOME GROCERIES; MAY BE GROCERY BAGS, DEPARTMENT STORE BAGS OR ANY OTHER KIND. EVEN PLASTIC BAGS WILL DO. WE NEED THEM TO PUT MERCHANDISE IN AT THE SHELL STORE. HELP ECOLOGY AND SAVE THE CLUB MONEY.

BOXES - GIFT OR CARD BOXES THAT HAVE CELLOPHANE TOPS. NEEDED FOR SPECIAL SHELLS.

BEACH SHELLS - WE USE THEM IN PACKAGES THAT WE SELL AT THE FAIR. PLEASE CLEAN AND OIL AND, IF POSSIBLE, SORT THE SHELLS.

SPECIMEN SHELLS - WE DESPERATELY NEED GOOD SPECIMEN SHELLS THAT WE CAN SELL TO THE SERIOUS CONCHOLOGIST. DATA REQUESTED!

HELPERS - FOR PACKAGING SHELLS AND FOR SALESPEOPLE IN THE STORE.

FOR DELIVERY OR PICKUP OR OFFERS TO HELP IN CLEANING OR PACKAGING, CALL  
FANNIE MIRON - 723-3628  
MARY LEE BIVONA - 862-5087

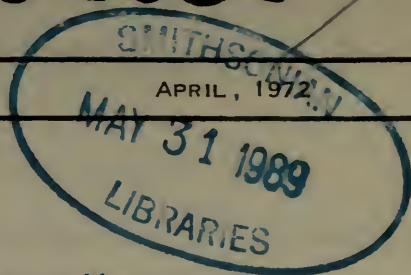
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# CONCHOLOGIST

VOLUME VIII, No. 8

## NOTES & NEWS



### MOLLUSKS ON STAMPS FOR APRIL MEETING

DR. W. W. SUTOW WILL TALK ON ONE OF HIS FAVORITE SUBJECTS, MOLLUSKS ON STAMPS, AT THE APRIL 26 MEETING. HE WILL ILLUSTRATE HIS DISCUSSION WITH SLIDES. THE TIME IS 8 P.M. AT THE HOUSTON MUSEUM OF NATURAL SCIENCE.

MRS. FANNIN MIRON WILL HAVE SPECIMEN SHELLS DONATED FOR THE SHARPSTOWN SHELLORAMA IN MAY ON DISPLAY FOR PURCHASE BY MEMBERS. SO BRING YOUR POCKET BOOKS FOR THIS CHANCE TO BUY BEFORE THE FAIR!

### SHELLORAMA AT SHARPSTOWN

REMEMBER THE DATES ARE MAY 11 THROUGH 13 AT SHARPSTOWN MALL FOR OUR SHELLORAMA. YOU WILL SET UP DISPLAYS ON MAY 10. PLEASE CONTACT RUTH GOODSON OR FANNIN MIRON ON DISPLAY SPACE YOU NEED AND CONFIRM YOUR EXHIBIT. THIS IS NECESSARY SO THAT ENOUGH TABLES WILL BE AVAILABLE.

SOME OF THE SPECIAL DISPLAYS INCLUDE A NUMBER FROM THE GALVESTON SHELL SHOW, MARJORIE SARGENT'S MINI MUSEUM (THIS PROMISES TO BE A WHOLE ROOM OF HER COLLECTION MOVED TO THE MALL!), DISPLAY ON HOW TO CLEAN SHELLS, COLLECTIONS OF STROMBUS, MUREX, VOLUTES, CYPRAEA, CONES AND OLIVES; FRESH WATER SHELLS FROM TEXAS WHICH WILL HELP YOU WITH IDENTIFICATION, SHELLS TAKEN FROM DIVING EXPEDITIONS AROUND THE WORLD, AND SPECIAL SELECTIONS OF BEAUTIFUL SHELLS FROM MEMBERS' COLLECTIONS.

ONE FEATURE WILL BE THE VERY RARE CONUS BENGALENSIS OKUTANI 1968 WHICH IS TO BE DISPLAYED IN CORRIGAN'S WINDOW BY MRS. MELBA BRIDGES, THE PROUD OWNER OF A PAIR OF THIS UNUSUAL CONE. ONLY ABOUT A DOZEN HAS BEEN COLLECTED SINCE THE DISCOVERY. THE CONE COMES FROM THE BAY OF BENGAL, TRAWLED FROM DEEP WATERS.

BE SURE TO LOOK FOR CLARICE VAN ERP ON THE JOANNE KING NOON SHOW ON CHANNEL 11 ON EITHER MAY 4 OR 5. TAPED AHEAD OF TIME, IT IS SCHEDULED FOR EITHER OF THE TWO DATES. CLARICE WILL TALK ABOUT OUR SHELLORAMA AND WILL FEATURE THE SPECIAL SHELL TABLE THAT WILL BE SET UP FOR THE BLIND AND HANDICAPPED CHILDREN WHO WILL VISIT THE SHOW ON FIELD TRIPS. DR. W. W. SUTOW WILL DONATE SPECIMEN SHELLS WITH DATA TRANSCRIBED INTO BRAILLE BY MRS. SEYMOUR MANN FOR THE CHILDREN TO HANDLE. TITLED "HANDLED WITH LOVING HANDS," THIS TABLE WILL BE SOMETHING NEW FOR OUR SHOW. SHELLS WILL BE GIVEN TO THESE CHILDREN TO TAKE HOME ALSO.

### MARCH MINUTES

TREASURER PAUL HUDSON REPORTED THE NEW BALANCE OF GENERAL FUND WAS \$1329.43 AFTER MONTH'S BUSINESS. LIBRARY FUND STANDS AT \$77.94.

Fritz Lang, Secretary

...CONTINUED ON PAGE 89

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Spears

### SUPERFAMILY PYRAMIDELLACEA (CONTINUED)

- SUMNERI BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 92, PL. 14, FIGS. 53, 55.
- SUTURALIS GOULD, 1862. OTIA, 237 (FROM DALL, 1885). SEE ALSO: BUSH, 1899, PROC. ACAD. NAT. SCI., PHILA., VOL. 51, P. 174.
- TEXTILIS KURTZ, 1860. CAT. REC. MAR. SHELLS N. AND S. CAR., P. 8, ACC. TO DALL CLOSELY ALLIED TO MULTICOSTATA.
- TOYATANI HENDERSON AND BARTSCH, 1914. PROC. U.S.N.M., VOL. 47 (2055), P. 416, PL. 14, FIG. 5.
- VALIDA VERRILL AND BUSH, 1900. TRANS. CONN. ACAD. NAT. SCI., VOL. 10, P. 528, PL. 64, FIG. 20.
- VERRILLI BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 82, PL. 12, FIGS. 21, 26.
- VINEAE BARTSCH, 1909. IBID., P. 83, PL. 12, FIGS. 22, 36.
- VIRGA DALL, 1883. (VIRIDARIA VAR?). PROC. U.S.N.M., 6, P. 332; SEE ALSO: REPT. BLAKE GASTROPODA, P. 336.
- VIRGATA DALL, 1892. T.W.I.F.S., VOL. 3, PT. 2, P. 255. NEW NAME FOR T. EXARATA HOLMES, 1859.
- VIRGINICA HENDERSON AND BARTSCH, 1914. PROC. U.S.N.M., VOL. 47 (2055), P. 416, PL. 13, FIG. 4.
- VIRIDARIA DALL, 1883. PROC. U.S.N.M., 6, P. 332. LATER CONSIDERED BY DALL TO BE SYNONYMOUS WITH INTERRUPTA TOTTEN. (T.W.I.F.S.).
- WINKLEYI BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 90, PL. 12, FIGS. 35, 37.
- WINKLEYI SENILIS BARTSCH, 1909. IBID., P. 42, PL. 12, FIG. 41.
- WHITEAVESI BARTSCH, 1909. PROC. BOST. SOC. NAT. HIST., VOL. 34 (4), P. 93, PL. 12, FIGS. 32, 38.

WE ARE BY NO MEANS SURE THAT ALL TAXA IN THIS LIST BELONG IN PYRGISCUS AS DEFINED BY US AND SOME SPECIES COULD BE EITHER CHEMNITZIA OR STRIOTURBONILLA. IN OLDER LITERATURE MANY PYRAMIDELLIDS OTHER THAN TURBONILLAS HAVE BEEN LISTED AS TURBONILLAS. THESE HAVE BEEN OMITTED HERE. WE FIND IT AT PRESENT IMPOSSIBLE TO MAKE ANY FURTHER DIVISIONS IN THIS GROUP. ALL FOSSIL PLIOCENE SPECIES OF BARTSCH ALSO HAVE BEEN OMITTED.

THE INTERRUPTUS-COMPLEX. THIS IS A VERY DIFFICULT COMPLEX OF SPECIES. SPECIMENS OF ALL FORMS AND VARIABILITY ENUMERATED BY DALL (1892) CAN BE TAKEN FROM DRIFT, SPOIL MATERIAL AND DREDGE SAMPLES ALONG THE TEXAS COAST. WHETHER ALL FORMS ENUMERATED BELOW ARE DISTINCT OR NOT IS IMPOSSIBLE TO DECIDE HERE AND THE PROBLEM MUST REMAIN UNSOLVED UNTIL THE BIOLOGY OF THE VARIOUS ANIMALS HAS BEEN INVESTIGATED IN DETAIL. THEY ALL ARE TO QUOTE DALL 1892, "CHARACTERIZED BY DIFFERENCES IN STRENGTH AND SPACING OF THE SPIRAL SCULPTURE, WHICH AS A LITTLE REFLECTION WILL CONVINCE ANYONE WHO HAS WORKED OVER LARGE COLLECTIONS, IS OF BUT THE SLIGHTEST SYSTEMATIC IMPORTANCE IN SUCH CASES AS THIS".

BARTSCH, 1909, DESCRIBED A COMPLEX OF SPECIES FROM NEW ENGLAND WHICH CAN BE VERY CLOSELY DUPLICATED BY MATERIAL FROM THE TEXAS COAST. P. VERRILLI AND P. VINEAE ARE TWO SPECIES, PERHAPS IDENTICAL, WHICH APPEAR TO US EXTREMELY CLOSE TO WHAT WE HAVE CALLED P. INTERRUPTUS TOTTEN. THEY HAVE 5-9 REGULARLY PLACED SPIRALS IN THE INTERCOSTAL SPACES. TO THE SAME GROUP PROBABLY BELONG P. ELEGANTULUS BARTSCH, P. AREOLATUS VERRILL, P. TOYATANI HENDERSON AND BARTSCH AND P. POWHATANI HENDERSON AND BRATSCH, FORMS WHICH ALSO HAVE A SMALL NUMBER OF SPIRALS. TO US P. INTERRUPTUS TOTTEN, AS DESCRIBED BY BARTSCH 1909, P. WINKLEYI AND P. BUTEONIS BARTSCH APPEAR TO BE VERY SIMILAR IF NOT IDENTICAL. IF THIS GROUP OF THREE SPECIES WILL PROVE TO BE SPECIFICALLY DIFFERENT FROM THE VERRILLI-AREOLATA GROUP OUR TEXAS MATERIAL NEEDS TO BE RENAMED. WE HAVE DECIDED UPON THE NAME T. INTERRUPTUS TOTTEN BECAUSE OF A REFERENCE BY DALL, 1892, TO THIS SPECIES FOR GALVESTON.

IN OUR STUDY OF THIS GROUP WE EXPERIENCED SOME SURPRISES. P. INTERRUPTUS IS QUITE COMMON, BOTH IN DRIFT AND IN DREDGE SAMPLES ALONG THE TEXAS COAST BUT ON GALVESTON BEACH THE MOST COMMON SPECIES APPEARS TO BE A CLOSELY RELATED ONE WHICH WE HAVE VENTURED TO DESIGNATE AS P. SPEIRA RAVENEL. THE IDENTIFICATION OF OUR MATERIAL WITH THIS "LOST" SPECIES IS HIGHLY TENTATIVE, AND IS BASED MAINLY ON THE DESCRIPTION BY DALL. BEACH MATERIAL FROM EAST MATAGORDA BAY AND SOME FROM THE SPOIL AREAS AT PORT ARANSAS SHOW CLEARLY THAT THE GALVESTON MATERIAL IS IDENTICAL WITH IT. EVEN WORN BEACH MATERIAL RETAINS ITS PECULIAR SHOULDERED APPEARANCE.

AN OVERALL SOMEWHAT SMALLER AND MORE SLENDER FORM IN THE COMPLEX, OFTEN FOUND IN OUR MATERIAL, WE HAVE CALLED IN ACCORD WITH DALL'S NOTES P. OBELISCUS C. B. ADAMS. AS MOST FORMS IN THIS GROUP IT IS WHITE OR SLIGHTLY YELLOWISH WITH SOMETIMES AN INDICATION OF A BROWN BAND. APART FROM THIS FORM THERE ARE A NUMBER OF OTHER MODIFICATIONS IN THE COMPLEX, WHICH FOR THE TIME BEING WE HAVE NOT SEPARATED FROM P. INTERRUPTUS TOTTEN. ONE IS A SMALL SHELL WHICH HAS A CLEARLY DEFINED BROWN BAND AND A RATHER DEEP SUTURE. IN OUR OPINION IT IS POSSIBLY THE JUVENILE SHELL OF THE INFLATED MODIFICATION OF P. INTERRUPTUS. IT HAS BEEN CALLED P. FULVOCINCTUS JEFFREYS. THERE ARE ALSO IN OUR COLLECTION A NUMBER OF VERY SMALL SPECIMENS EXHIBITING A FINE AND DENSE SCULPTURE ON THE EARLY WHORLS. ALL THESE MODIFICATIONS SEEM TO GRADE INTO ONE ANOTHER WHEN SUFFICIENT MATERIAL IS AT HAND.

IN ORDER TO AVOID COMPLETE CONFUSION WE SHALL RECOGNIZE HERE ONLY THE FOLLOWING "SPECIES": P. INTERRUPTUS, P. SPEIRA, P. OBELISCUS AND P. CEDROSUS. THE LATTER NAME IS NOT MORE THAN A GUESS FOR A VERY INFLATED SPECIES WHICH EXHIBITS A BEAUTIFUL RETICULATE SCULPTURE. IT IS IN MANY RESPECTS QUITE DIFFERENT FROM ALL OTHER SPECIES OF THE COMPLEX, AND UNTIL RECENTLY WHEN WE RECEIVED FRESH LIVE MATERIAL FROM GALVESTON BAY WE COULD NOT PLACE IT. IT ALSO COULD



PYRGISCUS SPEIRA,

3.40 M.M. , PORT ARANSAS CAUSEWAY  
MARCH 10, 1957

PYRGISCUS OBELISCUS

3.26 M.M. , ARANSAS PASS CAUSEWAY  
MAY 31, 1957

BELONG IN THE "GENUS" STRIOPYRGUS BARTSCH , ERECTED FOR SOME SUPPOSEDLY HYBRID SHELLS.

IN TEXAS THE FOLLOWING SPECIES:

PYRGISCUS INTERRUPTUS TOTTEN , 1839. THERE IS PROBABLY NO TURBONILLA SPECIES IN THE WESTERN ATLANTIC , WHICH HAS AS MANY SYNONYMS AS THIS ONE. IT IS IN ALL RESPECTS QUITE VARIABLE , BUT FOR ALL WE KNOW THE FORMS WE RECOGNIZE AS P. INTERRUPTUS TOTTEN MAY BE A COMPLEX OF SEVERAL SPECIES. TEXAS SPECIMENS ARE WHITE OR SLIGHTLY YELLOWISH. P. INTERRUPTUS AND RELATED SPECIES CAN BE DIFFERENTIATED FROM SPECIES IN THE P. RETICULATUS-P. TEXTILIS COMPLEX BY THEIR SLENDER AND FINELY SCULPTURED EARLY POST-NUCLEAR WHORLS. QUITE COMMON IN OFFSHORE DREDGINGS.

PREVIOUS REFERENCES: REPORTED BY DALL , MAURY , PARKER AND HARRY.

LOCALITIES: DEAD IN BEACHDRIFT ALONG THE ENTIRE TEXAS COAST. ALIVE IN MOST BAYS , ESPECIALLY EAST MATAGORDA BAY.

PYRGISCUS SPEIRA RAVENEL , 1859. THIS SPECIES WE HAVE NAMED ON THE BASIS OF A REMARK BY DALL , 1892 , WHO STATED THAT ITS PRINCIPAL CHARACTERS ARE: "FEW BUT RATHER STRONG WAVELIKE RIBS , NOT INTERRUPTED AT BASE; WELL DEFINED SCULPTURE COVERING SHELL AND PROMINENT SPIRAL A LITTLE IN FRONT OF SUTURE WHICH

GIVES AN OBSCURE SHOULDER TO THE WHORL". THIS SPECIES, RATHER CONSTANT IN CHARACTER, CAN EVEN IN WORN CONDITION BE RECOGNIZED AS DIFFERENT FROM P. INTERRUPTUS. VERY RARE IN OFFSHORE DREDGINGS AND UNCOMMON AT PORT ARANSAS, BUT COMMON IN EAST MATAGORDA BAY AND ON GALVESTON BEACHES. HOWEVER, THIS LATTER MATERIAL IS IN POOR CONDITION.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, FREEPORT, PORT ARANSAS. FRESH MATERIAL EAST MATAGORDA BAY.

PYRGISCUS OBELISCUS C. B. ADAMS, 1850. THIS SMALL SPECIES IS OCCASIONALLY COLLECTED ON ALL BEACHES OF THE TEXAS COAST. DALL, 1892, STATES: "THE SPECIES HAS EXACTLY THE CHARACTERS OF T. INTERRUPTA EXCEPT THAT IT IS PROPORTIONALLY MORE SLENDER AND USUALLY A SMALLER SHELL". WE MAY ADD THAT ITS SUTURE IS LESS DEEP. AS ALL SPECIES IN THIS COMPLEX IT IS WHITE OR YELLOWISH. WE BELIEVE THAT IT WILL TURN OUT TO BE CONSPECIFIC WITH P. INTERRUPTUS. ALSO DREDGED OCCASIONALLY OFF GALVESTON.

PREVIOUS REFERENCES: REPORTED BY MAURY.

LOCALITIES: GALVESTON, MATAGORDA, PORT ARANSAS

PYRGISCUS C.F. CEDROSUS DALL, 1883. AMONG OUR MATERIAL THERE OCCURS IN SMALL NUMBERS A HIGHLY PECULIAR FORM OF A SMALL PYRGISCUS SPECIES. IT DIFFERS FROM ALL OTHERS IN THE SPIRALLY STRIATE EARLY POST-NUCLEAR WHORLS AND THE CLEAR RETICULATION OF THE BODY WHORLS. SPIRALS ARE OF ALMOST EQUAL STRENGTH AS THE RIBLETS. FRESH LIVE MATERIAL FROM GALVESTON BAY SHOWS MORE CLEARLY THAN THE WORN BEACHMATERIAL, - WHICH IS QUITE RARE -, THAT IT IS A GOOD SPECIES DIFFERENT FROM P. INTERRUPTUS. THE SPECIES IS FURTHER CHARACTERIZED BY ITS CYLINDRICAL SHAPE AND RAPIDLY TAPERING TOP, AND THE SOMEWHAT TUMID EARLY POSTNUCLEAR WHORLS. WE BELIEVE BUT CANNOT JUSTIFY THIS, THAT IT IS THE SAME AS DALL'S PARTHENIA CEDROSA, WHICH WAS FIGURED BY A POOR FIGURE ONLY.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, MATAGORDA, PORT ARANSAS

TO BE CONTINUED.....

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CONTINUED FROM PAGE 85

FAY DRYDEN REPORTED FROM THE NOMINATING COMMITTEE. BALLOTS WILL BE MAILED.

MRS. JONABETH EVANS, GREG SMITH AND DORTHA HORNE WERE INTRODUCED AS GUESTS, AND WELCOMED BY THE MEMBERS.

MR. WILSON REPORTED THAT THE COIN CLUB HAS COVERED DISPLAY CASES THAT CAN BE RENTED AT A DOLLAR FOR 3 DAYS. CALL HIM IF INTERESTED.

MRS. MIRON ASKED THAT PEOPLE DISPLAYING SHELLS THIS YEAR CALL HER AND GET ON THE LIST. ALSO THE SHELL STORE NEEDS BEACH SHELLS, SALES PERSONS, AND SPECIMEN SHELLS. VOLUNTEERS NEEDED TO SEW TABLE SKIRTS FOR THE STORE. PAPER BAGS ARE NEEDED. BRING TO APRIL MEETING. A VOLUNTEER STORE MINDER'S LIST WAS PASSED FOR SIGNATURES.

MR. AND MRS. ROGER KEWLEY ARE HOSTING A SHELL I.D. CLASS TO BEGIN MARCH 29 AT 2230 GOLDSMITH, 7:30 P.M., MRS. DEXTER REPORTED.

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LAST MONTH, THERE WAS MENTION OF MORBIDITY THAT CAN BE AFFLICTED BY MOLLUSKS. BUT WHAT ABOUT THE DISEASES THAT CAN VICTIMIZE THE MOLLUSKS THEMSELVES? SHELLFISHERY IS A MAJOR COMMERCIAL ENDEAVOR WORLDWIDE. CONSEQUENTLY ANY CONDITION THAT WOULD IMPAIR EITHER THE ACQUISITION OR THE PRODUCTION OF THE MARKETABLE SUPPLY WOULD HAVE ECONOMIC IMPACT.

IN THE BOOK ENTITLED PRINCIPAL DISEASES OF MARINE FISH AND SHELL-FISH BY CARL J. SINDERMANN (ACADEMIC PRESS, 1970) THE SUBJECT OF MOLLUSCAN DISEASE IS REVIEWED. DEFINING DISEASE AS "ABNORMALITIES RESULTING FROM MICROBIAL PATHOGENS OR PARASITE INVASION, TUMORS, GENETICALLY OR ENVIRONMENTALLY INDUCED ABNORMALITIES, AND PHYSIOLOGICAL DISTURBANCES", AFFLICTIONS OF BIVALVES, GASTROPODS AND CEPHALOPODS ARE SYSTEMATICALLY DISCUSSED.

IN ADDITION THE PHENOMENON OF MASS MORTALITIES OF SHELLFISH (CATASTROPHIC AND SUDDEN) IS DISCUSSED SEPARATELY. SUCH MASS MORTALITY MAY OCCUR AS THE RESULT OF PHYSICAL ADVERSITIES, SUCH AS STORM OR COLD, AS THE RESULT OF EPIZOOTICS, OF KNOWN PATHOGENS, AS THE RESULT OF CHEMICAL POISONS, OR AS MORTALITIES OF UNDETERMINED CAUSES. SUCH MASS MORTALITIES HAVE OCCURRED AMONG CULTURED SHELLFISH, AMONG SHELLFISH IN THEIR NATURAL HABITAT AND EVEN AMONG DEEP WATER MOLLUSKS SUCH AS THE SEA SCALLOP (PLACOPECTEN MAGELLANICUS). OF COMMERCIAL CONCERN IN THE UNITED STATES ARE THE MASS MORTALITIES INVOLVING CRASSOSTREA GIGAS, MYA ARENARIA, MERCENARIA MERCENARIA AND MYTILUS EDULIS. SEVERAL SPECIES OF FUNGUS HAVE BEEN IMPLICATED IN A NUMBER OF OUTBREAKS.

OTHER DOCUMENTED PHYSICAL EVENTS CAUSING MASS MORTALITIES AMONG SHELLFISH INCLUDE VULCANISM, EARTHQUAKES AND SEAQUAKES AND SUDDEN SALINITY CHANGES. TOXIC PHYTOPLANKTON BLOOMS ("RED TIDES") ARE RECURRENT EVENTS IN SOME AREAS. SUCH BLOOMS NOT ONLY KILL MARINE LIFE BUT ARE RESPONSIBLE FOR HUMAN DEATHS WHEN CONTAMINATED SHELLFISH ARE EATEN.

ANOTHER WAY IN WHICH MOLLUSCAN POPULATION IS REDUCED INVOLVES STERILIZATION OF THE HOST MOLLUSKS BY PARASITIZATION, PARTICULARLY BY TREMATODES. TREMATODE LARVAE DESTROY THE GONADS OF BIVALVES AND GASTROPODS, THUS IMPAIRING THE REPRODUCTIVE POTENTIAL OF THE MOLLUSKS.

WHILE THE TENDENCY IS TO IMPLICATE DISEASE IN THE PRESENCE OF POPULATION DECREASE, THE POSSIBILITY OF A POPULATION PEAK OF SOME PREDATOR SPECIES SHOULD NOT BE IGNORED. OTHER FACTORS THAT MAY BE OF IMPORTANCE ARE THE ADEQUACY OF FOOD SUPPLY AND THE EFFECT OF POPULATION DENSITY AND OF MIGRATION.

MOLLUSCAN DISEASES MAY BE CAUSED BY MICROBES, BY FUNGI, AND BY PARASITES WHICH INCLUDE TREMATODES, CESTODES, OTHER GASTROPODS AND CRUSTACEANS. CEPHALOPODS TOO HAVE THEIR SHARE OF TROUBLES. APPARENTLY PARASITISM BY OTHER ORGANISMS OCCURS. IMPLICATED ARE CILIATES, MESOZOA AND LARVAL HELMINTHS. EVEN TUMORS HAVE BEEN DESCRIBED IN SHELLFISH.

THE PUN-INTENDED APPELLATION OF "CONCHOLOGICAL ONCOLOGIST" THUS MAY YET FIND APPLICATION TO A VALID SITUATION.

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NIGHT COLLECTING WAS SOMETHING NEW FOR ME, AND THE MINUS TIDES IN MARCH AT PANAMA, PACIFIC SIDE, WERE ESPECIALLY GOOD FOR TRYING THIS OUT. BY COLEMAN LANTERN FOR FIVE NIGHTS WE WALKED OUT ON A SAND BAR, AROUND EXPOSED BOULDER AND ROCK OUTCROPS, ACROSS MUD FLATS, AND THROUGH RUBBLE TO VENADO ISLAND IN PANAMA BAY. WE WERE TOLD IT WAS ABOUT A MILE AND A HALF TO THE ISLAND, BUT THAT WOULD BE BY STRAIGHT ROUTE. ONE MEMBER OF THE GROUP SAID IT WAS NEARER THREE MILES OUT AND "THIRTY MILES BACK." ONLY ON MINUS TIDES WOULD THIS ISLAND TRIP BY FOOT BE POSSIBLE.

FOR YOUR USE ON SUCH ADVENTURES, IT MIGHT BE INTERESTING TO NOTE THAT WE USED COLEMAN LANTERNS THAT EMPLOY THE USE OF CANS OF FUEL THAT CAN BE INSERTED ON THE BOTTOM. THIS IS A LIGHTER WEIGHT LANTERN TO USE, AND AN EXTRA FUEL CAN IS CARRIED IN ONE'S POCKET TO BE INSERTED IF NEEDED. ONE CAN USUALLY LASTS ABOUT THREE HOURS. THIS TYPE OF LANTERN MAY BE ORDERED BUT IS NO LONGER LISTED IN THE COLEMAN CATALOG, ALTHOUGH I DID FIND ONE HERE TO TAKE WITH ME ON THE PLANE. FUEL CANNOT BE TRANSPORTED BY PLANE, SO THAT IT IS NECESSARY TO DETERMINE IF SUCH FUEL IS AVAILABLE WHERE YOU GO.

THERE IS A NEW FRENCH-MADE LANTERN AVAILABLE NOW HERE IN HOUSTON (WESTBURY SQUARE) AND WAS IN PANAMA WHICH USED A CANNED FUEL. IT IS VERY LIGHT WEIGHT AND LASTED SOME FIVE HOURS.

SHELLING AT NIGHT WHEN YOU HAVE TO WALK SOME DISTANCE MEANS TRAVELLING AS LIGHT AS POSSIBLE. A SHELLING JACKET OR BELT WITH POCKETS FOR VIALS, FUEL, POCKET BOOK (WE COULDN'T LEAVE THIS IN THE CAR ON SHORE), KNIFE AND ANY OTHER SMALL TOOL IS HELPFUL. EACH NIGHT I LEFT MORE AT HOME. I FOUND THAT I PREFERRED TO WEAR GLOVES (PLASTIC-COATED KIND ARE BEST) AND TURN ROCKS INSTEAD OF USING THE PRONGED GARDEN TOOL MOST PEOPLE USED. I COULD TURN ROCKS BACK BEST THIS WAY. I SAW ONE COLLECTOR USE SHARP POINTED TWEEZERS TO INVESTIGATE THE CREVICES OF ROCKS WHERE THE MUCH- SOUGHT MUREXIELLAS AND FAVARTIAS WERE. ONE HAD MEDICAL FORCEPS ON A STRING AROUND HER NECK, LONG ENOUGH TO BE USED AS SHE BENT OVER A BOULDER.

THE MAIN PROBLEM IS TO KNOW HOW TO TILT A BUCKET ON A ROCK AT NIGHT, HOLD THE LANTERN HIGH ENOUGH FOR YOU TO SEE AS YOU BEND OVER A ROCK TO INVESTIGATE THE AREA AND PICK OUT THE SMALL, DEBRIS COVERED SHELLS. THE CYPRAEA UNDER THE ROCKS USUALLY FELL TO THE GROUND OR POOL BELOW THE ROCK AND HAD TO BE RESOUGHT. SOME OF THE VERY BEST SHELLS WOULD BE VERY CAMOUFLAGUED IN THE RUBBLE. THE ONLY STROMBUS PERUVIANUS SWAINSON, 1823, I FOUND HAD ONLY A SUGGESTIVE ORANGE SIPHON PROTRUDING.

THE FLATS WERE ESPECIALLY INTERESTING TO ME, BUT THE EXPERIENCED COLLECTOR IN PANAMA SOUGHT THE ROCKS WHERE THE MORE RARE SHELLS WERE. HOWEVER, IT WAS A FIRST TRIP FOR ME AND SEEING HUGE POLINICES AND NATICAS IN FULL VIEW WAS A DELIGHT. I ALSO ENJOYED SEEING MY FIRST LIVE ARCHITECTONICA NOBILIS RODING, 1798, ON THE PACIFIC SIDE, FLOATING OUT WITH THE TIDE AND FINDING MITRA GIGANTEA (REEVE, 1844) IN TRAILS.

EVERYBODY WANTED A "TIGER", BUT CYMATIUM TIGRINUM (BRODERIP, 1833) WAS SCARCE, ALTHOUGH A FEW WERE FOUND. THERE WERE PLENTY OF HEXAPLEX REGIUS (SWAINSON, 1821), SMALL ONES, AND PLENTY OF SMALL MURICANTHUS RADIX (GMELIN,

1791). EUPLEURA NITIDA (BRODERIP, 1833) WAS UNDER MANY ROCKS, AS WAS MURICOPSIS ZETEKI (HERTLEIN AND STRONG, 1951.) A FEW TYPHIS, TROPHON, CASSIS, AND ONE HARPA WERE FOUND. CONUS ORION BRODERIP, 1833, WAS RARELY FOUND, ALTHOUGH CONUS PURPURASCENS SOWERBY, 1833, WAS COMMON IN TIDE POOL SANDY AREAS. CONUS PATRICIUS HINOS, 1843, AND CONUS VITTATUS HWASS, 1792, WERE COLLECTED. THERE WERE OLIVES AND OLIVELLAS, PLENTY OF CANTHARUS, THAIS, AND DISTORSIOS. IT WILL BE QUITE A WHILE BEFORE I KNOW JUST WHAT I DO HAVE, AS COLLECTING TWO TIDES A DAY MEANT WORK AND NOT MUCH EXAMINATION OF SMALL SHELLS. IT WAS ALL I COULD DO TO SORT AND PUT THE MATERIAL IN PLASTIC GALLON JARS OF ALCOHOL. I Poured OFF MOST OF THE ALCOHOL FOR THE TRIP HOME BY PLANE, STUFFED THE TOP OF THE JARS WITH RAGS, AND WHEN I GOT HOME REFILLED THE JARS WITH ALCOHOL SO THAT I CAN GET TO THE CLEANING AT LEISURE.

SEEING LIVE FICUS VENTRICOSA (SOWERBY, 1825) FLAPPING IN THE RECEDING WATER WAS A THRILL. FASCIOLARIAS BEGAN TO BUMP UP FROM THE MUD ON THE FLATS. BIVALVES POPPED UP, AND I LIKE THEM!

HOWEVER, IF YOU ASK ME WHAT I BROUGHT HOME THAT I COLLECTED AND GOT THE BIGGEST KICK OUT OF I WILL HAVE TO SAY THAT FINDING, RECOGNIZING AND COLLECTING UMBRACULUM OVALE (CARPENTER, 1856) ONE NIGHT WAS MY PRIZE. HOLDING THE LANTERN HIGH ON MY JOURNEY OUT OF THE ROCK PILE, I SAW A FLUORESCENCE BLOB ON A ROCK AT THE EDGE OF THE LIGHT. I WENT OVER TO TOUCH THIS SEEMINGLY TWO-INCH HIGH ANIMAL AND FELT A HARD "SOMETHING" ON TOP. IMMEDIATELY THE THOUGHT FLASHED THROUGH MY MIND THAT THIS WAS A MOLLUSK OF SOME KIND, AND I ADMIT THAT I THOUGHT "UMBRACULUM," THE UMBRELLA SHELL. I HAVE NEVER FORGOTTEN THE ONE MILDRED TATE BROUGHT TO A SHELL CLUB MEETING ONCE BECAUSE SHE HAD THE SHELL AND THE HUGE ANIMAL PRESERVED (BROUGHT IN FROM THE GULF OF MEXICO BY SHRIMPER ALLEN KIGHT).

MYRA KEEN'S NEW BOOK SAYS THAT THIS ANIMAL OF THE FAMILY UMBRACULIDAE FEEDS BY GRAZING ON MICROSCOPIC ORGANISMS IN THE SURFACE FILM ON SPONGES OR OTHER OBJECTS ATTACHED TO THE SEA FLOOR. MY SPECIES IS A LIMPET SHAPED SHELL EMBEDDED IN THE DORSAL SURFACE OF THE MUCH LARGER ANIMAL WHICH LOOKED SOMETHING LIKE AN ANEMONE. THE SHELL IS ORANGE FADING TO WHITE ON THE VERY THIN EDGES AND IS AN INCH AND A HALF LONG AND OVER INCH WIDE, VERY FLAT, WITH MUCOUS MEMBRANE EXTENDING OVER EDGES.

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CONTINUED FROM PAGE 89

CLARICE VAN ERP AUCTIONED OFF SHELLS FROM THE SAIPAN SHELL CLUB.

MEETING WAS TURNED OVER TO HELMER ODÉ. HELMER SHOWED SLIDES OF SHELLS FROM THE GULF OF MEXICO. PHOTOGRAPHY BY MR. HAROLD GEIS. HELMER'S DESCRIPTIONS AND COMMENTS WERE INTERESTING AND INFORMATIVE AND WE ENJOYED HIM A LOT, AS USUAL.

Texas

# CONCHOLOGIST

VOLUME VIII, No. 9

MAY 1972

## NOTES & NEWS

### DR. SUTOW SPEAKER FOR MAY

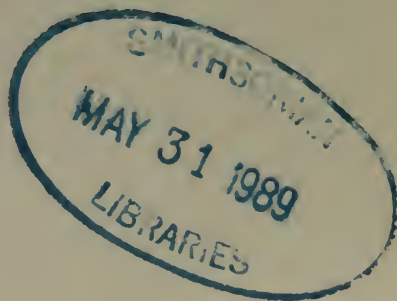
DR. W. W. SUTOW WILL GIVE HIS TALK ON "MOLLUSKS ON STAMPS" AT THE MAY 24 MEETING AT THE HOUSTON MUSEUM OF NATURAL SCIENCE. DUE TO THE VISIT WITH US OF ERNIE LIBBY AT THE APRIL MEETING, "WAT" POSTPONED HIS TALK UNTIL THIS MAY MEETING. AS USUAL, THE TIME IS 8 P.M. BRING YOUR FRIENDS.

THIS WILL BE THE LAST MEETING OF THIS CLUB YEAR. NEXT SEASON BEGINS WITH THE AUGUST MEETING, FOURTH WEDNESDAY.

PLEASE REMIT DUES NOW FOR 1972-73.

NEW DUES VOTED AT THE APRIL MEETING ARE AS FOLLOWS:

FAMILY MEMBERSHIP	\$6.00
SINGLE MEMBERSHIP	\$5.00
STUDENT MEMBERSHIP	\$2.00
SUBSCRIBER	\$4.00



PLEASE SEND CHECKS OR MONEY ORDERS TO TREASURER:

PAUL HUDSON  
 7530 IMOGENE  
 HOUSTON, TEXAS 77036  
 (PAYABLE TO HOUSTON CONCHOLOGY SOCIETY, INC.)

PLANS ARE BEING MADE TO PUBLISH TEXAS CONCHOLOGIST QUARTERLY NEXT YEAR.

### APRIL MINUTES

BY FRITZ LANG, SECRETARY

CHAIRMAN LLOYD MEISTER CALLED THE MEETING TO ORDER AT 8:15 P.M., APRIL 26, 1972 WITH ABOUT 39 MEMBERS PRESENT. MINUTES OF PREVIOUS MEETING WERE READ AND ACCEPTED.

TREASURER PAUL HUDSON REPORTED THE NEW GENERAL FUND BALANCE WAS \$1296.38 AFTER THE MONTH'S BUSINESS. LIBRARY FUND WAS \$142.84.

MINUTES OF BOARD OF DIRECTORS MEETING OF APRIL 14, 1972 WERE READ. MOTION WAS MADE BY SAM MIRON, SECONDED BY FAY DRYDEN THAT THE MINUTES BE APPROVED BY THE BODY AS READ. MOTION CARRIED.

FANNY MIRON REPORTED THAT THE CLUB WOULD NEED MORE SHELLS FOR THE STORE FOR THE NEXT SHELL FAIR. SHE SUGGESTED THAT MEMBERS ON SHELLING TRIPS COLLECT BOTH SPECIMEN SHELLS AND DRIFT SHELLS FOR THE CLUB, AS WE ARE RUNNING OUT THIS YEAR.

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## NOTES CONCERNING TEXAS BEACH SHELLS

Helmer Odé

Mrs. Anne B. Speers

### SUPERFAMILY PYRAMIDELLACEA (CONTINUED)

THE "RETICULATUS-TEXTILIS COMPLEX". SPECIES IN THIS COMPLEX DIFFER IN SEVERAL RESPECTS FROM THOSE OF THE INTERRUPTUS COMPLEX. AN IMPORTANT DIFFERENCE EXISTS IN THE STRUCTURE OF THE EARLY POSTNUCLEAR WHORLS. RIBBING IN THE RETICULATUS-TEXTILIS COMPLEX STARTS MUCH COARSER AND MUCH MORE SUDDENLY THAN IN THE INTERRUPTUS COMPLEX; THE SCULPTURE ON THE BODY WHORLS IS COARSER; LASTLY MOST SPECIES OR AT LEAST THOSE IN TEXAS, DISPLAY COLOR PATTERNS. IN OUR OPINION THIS COMPLEX IS SUFFICIENTLY DIFFERENT FROM THE INTERRUPTUS COMPLEX OF SPECIES TO JUSTIFY A DIFFERENT GENERIC DESIGNATION. WE SHALL NOT DO SO NOW. WE ALSO FIND IT IMPOSSIBLE TO ASSIGN ANY NAMES WITH CERTAINTY TO SPECIES IN THIS COMPLEX.

IN TEXAS THE FOLLOWING SPECIES:

PYRGISCUS C.F. RETICULATUS C. B. ADAMS, 1850. THIS SPECIES WHICH HAS A COARSER SHELL THAN P. INTERRUPTUS, IS ONLY RARELY FOUND AT GALVESTON, BUT BECOMES QUITE COMMON AT PORT ARANSAS AND PORT ISABEL, WHERE IT IS OFTEN COLLECTED ALIVE IN THE LAGUNA MADRE. THE SPIRAL RIBBING IS QUITE VARIABLE AND SOME SHELLS THAT DISPLAY A DIFFERENT PATTERN WE HAVE NAMED P. PUNICEUS DALL, ALTHOUGH WE CANNOT JUSTIFY THIS SEPARATION. SOME OTHER SPECIMENS DISPLAY THE SLIGHTLY SWOLLEN SPIRAL, WHICH GIVES A SHOULDERED APPEARANCE TO THE WHORLS AND WHICH DALL NAMED P. RETICULATUS CINGULATUS. BOTH P. RETICULATUS AND P. R. CINGULATUS ARE ALSO FOUND IN OFFSHORE DREDGINGS. NO FIGURE OF THE SPECIES SEEMS TO BE IN EXISTENCE AND THE TYPES ARE LOST.

PREVIOUS REFERENCES: REPORTED BY MAURY

LOCALITIES: DEAD SHELLS UNCOMMON AT GALVESTON, BUT COMMONLY ALIVE AT PORT ARANSAS AND SOUTH PADRE ISLAND.

PYRGISCUS PUNICEUS DALL, 1883. THIS SPECIES DIFFERS FROM THE PREVIOUS ONE IN ITS FAR MORE IRREGULAR SPIRAL PATTERN AND SLIGHTLY DIFFERENT COLOR PATTERN. IT IS USUALLY A DARKER BROWN WITH AN INDICATION OF A GRAYISH BAND CLOSE TO THE SUTURE. WE ARE BY NO MEANS SURE ABOUT THIS DESIGNATION AND EXPECT THAT THE SPECIES WILL TURN OUT TO BE CONSPECIFIC WITH P. RETUCULATUS.

PREVIOUS REFERENCES: NONE

LOCALITIES: ALIVE IN BAYS AT PORT ARANSAS; DEAD SPECIMENS IN DRIFT ALONG THE SOUTH TEXAS COAST.



TURBONILLA CEDROSUS

5.12 MM. PORT ARANSAS CAUSEWAY  
JULY 5, 1961

PYRGISCUS POCAHONTASAE

4.85 MM. PORT ARANSAS CAUSEWAY  
MARCH 10, 1957

PYRGISCUS TEXTILIS KURTZ, 1860. THIS SPECIES WHICH IS THE MOST STUBBY IN THIS COMPLEX HAS BEEN FOUND ON MOST BEACHES, BUT IS FAR MORE COMMON AT PORT ARANSAS THAN AT GALVESTON, WHERE IT IS RARE. LIVE SPECIMENS HAVE BEEN COLLECTED AT SOUTH PADRE ISLAND. IT HAS A SOMEWHAT CORONATED APPEARANCE DUE TO THE SUDDEN TERMINATION OF THE VERTICAL RIBBLETS AT THE SUTURE. FRESH SPECIMENS HAVE A BANDED COLOR PATTERN.

PREVIOUS REFERENCES: NONE

LOCALITIES: GALVESTON, EAST MATAGORDA BAY, PORT ARANSAS, SOUTH PADRE ISLAND.

THE NEXT TWO SPECIES BELONG IN A COMPLEX OF SPECIES WHICH IN TEXAS ARE APPARENTLY CONFINED TO DEEPER WATER. IN WHAT THE DIFFERENCES WITH THE TWO OTHER COMPLEXES CONSIST IS NOT EASY TO STATE. IN GENERAL THE OUTLINE OF MANY SHELLS IS SOMEWHAT CONCAVE AT THE TOP, THE RIBS ARE OFTEN SLANTING AND SOMEWHAT SQUARISH IN APPEARANCE AND THE SPIRAL PATTERN HAS USUALLY ONE OR TWO STRONG GROOVES CLOSE TO THE LOWER SUTURE AND A SINGLE STRONG ONE



PYRGISCUS C.F. CONRADI

5.00 MM. PORT ARANSAS BEACH AT JETTY  
AUGUST 2, 1964

PYRGISCUS C.F. TEXTILIS

3.20 MM. SOUTH PADRE ISLAND AT BRIDGE  
FEBRUARY 27, 1965

HALFWAY THE SUTURES. MOST SPECIES OF THIS GROUP HAVE A STURDY APPEARANCE

PYRGISCUS CONRADI BUSH, 1899. BEACHWORN SPECIMENS OF THIS SPECIES CAN BE FOUND IN SMALL NUMBERS ALL ALONG THE TEXAS COAST. IT IS MORE REGULARLY SHAPED THAN THE NEXT SPECIES. LIVE MATERIAL WHICH IS KNOWN WEST GALVESTON BAY, EAST MATAGORDA BAY AND ARANSAS BAY HAS A TYPICAL DULL GRAY WAXEN APPEARANCE. THE TEXAS MATERIAL DOES NOT CONFORM WELL WITH T. CONRADI AS DESCRIBED BY PERRY AND SCHWENDEL, BUT CONFIRMS REASONABLY WELL WITH BUSH'S ORIGINAL DESCRIPTION.

PREVIOUS REFERENCES: REPORTED BY MARLAND.

LOCALITIES: ALL ALONG THE TEXAS COAST IN BEACHDRIFT. LIVING IN MOST OF THE COASTAL BAYS.

PYRGISCUS POCAHONTASAE HENDERSON AND BARTSCH, 1914. ALTHOUGH OUR MATERIAL MAY BE MERELY A VARIANT OF P. CONRADI, WE WILL LIST THIS SPECIES HERE. IT DIFFERS FROM THAT SPECIES IN BEING COARSER AND HAVING MORE SLANT TO THE RIB-



PYRGISCUS C.F. FLAVOCINCTUS

3.84 MM. PORT ARANSAS BEACH AT JETTY  
NOVEMBER 24, 1961

PYRGISCUS SP. INDET.

4.50 MM. SAN LUIS PASS, GALVESTON  
FEBRUARY 1970

REMARKS. OUR IDENTIFICATION IS QUITE UNCERTAIN.

PREVIOUS REFERENCES: NONE

LOCALITIES: MATAGORDA, PORT ARANSAS

OF A FOURTH GROUP WE LIST HERE ONLY A SINGLE SPECIES, THE ONLY REPRESENTATIVE ON THE BEACH OF A MORE SPECIES RICH COMPLEX OF DEEPER OFFSHORE WATERS. THIS IS A GROUP OF FINELY SPIRATE FORMS, REGULARLY CONICAL, BUT VERY SLENDER AND IN GENERAL WITH A VERY SHALLOW SUTURE. THE DISC-LIKE NUCLEUS IS OFTEN PERCHED VERY HIGH ON THE INITIAL WHORLS AND IS NEVER SUNKEN IN AS IN THE RETUCULATUS-TEXTILIS COMPLEX.

PYRGISCUS FLAVOCINCTUS C. B. ADAMS, 1850. THIS SLENDER AND WHEN FRESH VERY BEAUTIFUL SPECIES IS UNCOMMON IN BEACHDRIFT AT GALVESTON, BUT INCREASES IN NUMBERS TOWARD THE SOUTH. FRESH MATERIAL HAS BEEN FOUND AT PORT ARANSAS AND PORT ISABEL, AND HAS BEEN DREDGED OFFSHORE GALVESTON TOGETHER WITH A NUMBER OF CLOSELY RELATED SPECIES. MANY SPECIMENS SHOW TWO BROWN BANDS CIRCLING THE BODYWHORL. THESE BANDS HAVE OFTEN COMPLETELY DISAPPEARED IN



PYRGISCUS PROTRACTUS

4.08 MM. PORT ARANSAS CAUSEWAY  
MARCH 1957



PYRGISCUS RETICULATUS

3 MM. PORT ARANSAS CAUSEWAY  
MARCH 1957

WORN BEACH MATERIAL. THE NAME FOR THIS SPECIES WE HAVE SELECTED ON VERY SLENDER GROUNDS AND EASILY COULD BE IN ERROR.

PREVIOUS REFERENCES: NONE

LOCALITIES: ALONG THE ENTIRE TEXAS COAST, BUT MORE COMMON IN THE SOUTH.

THERE REMAIN A NUMBER OF SPECIES WHICH WE FIND DIFFICULT TO FIT IN ANY OF OUR COMPLEXES. ONLY ONE OF THESE WE HAVE VENTURED TO IDENTIFY AND OF ANOTHER WE SHALL GIVE A PHOTOGRAPH. CAREFUL COLLECTING WILL UNDOUBTEDLY BRING TO LIGHT MORE SPECIES THAN ARE DISCUSSED HERE.

PYRGISCUS PROTRACTUS DALL, 1892. AT PORT ARANSAS AND SOUTH PADRE ISLAND A VERY CHARACTERISTIC SPECIES CAN BE COLLECTED IN SMALL NUMBERS. THE SHELL IS USUALLY COLORED A UNIFORM LIGHT BROWN. THE SPIRAL SCULPTURE IS DENSE AND A SOMEWHAT WIDER GROOVE EXISTS HALFWAY BETWEEN THE SUTURES. THE RIBBING EXTENDS OVER THE BASE. THE SPECIES APPEARS TO US UNRELATED TO ANY OF THE ABOVE DISCUSSED COMPLEXES. MITCHELL HAS REPORTED IT FROM MATAGORDA. BE-



CAUSE MANY OF HIS IDENTIFICATIONS WERE MADE BY DALL WE FEEL TO SOME EXTENT JUSTIFIED IN OUR GUESS. WE HAVE NOT COLLECTED IT AT GALVESTON, NOR HAVE WE SEEN DREDGED MATERIAL FROM OFFSHORE WATERS. IT COULD BE FOSSIL.

PREVIOUS REFERENCES: NONE

LOCALITIES: PORT ARANSAS, SOUTH PADRE ISLAND

PYRGISCUS SP. INDET. A SINGLE SPECIMEN OF AN UNIDENTIFIED SPECIES WAS ONCE TAKEN AT SAN LUIS PASS. (COLL. ODÉ). IT HAS A REGULAR PATTERN OF FINE SPIRALS, BUT FOR MORE PARTICULARS WE REFER TO THE PHOTOGRAPH IN THE NEXT ISSUE. IT IS PROBABLY A DEEPER WATER SPECIES SINCE IT WAS COLLECTED TOGETHER WITH A NUMBER OF OTHER RARE DEEPER WATER PYRAMIDELLIDS. A FEW OFFSHORE SPECIMENS ARE IN THE COLLECTION OF THE HOUSTON MUSEUM OF NATURAL SCIENCE.

LOCALITIES: SAN LUIS PASS

PHOTOS BY FRANK VAN MORKHOVEN

TO BE CONTINUED.....

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CONTINUED FROM PAGE 93

FAY DRYDEN MADE A MOTION THAT THE CLUB BEGIN A MUSEUM OF SHELLS FOR SCHOOLS THAT ARE STARTING OCEANOGRAPHY COURSES. THE CLUB IS TO PRESENT A MODEST COLLECTION OF DIFFERENT SAMPLES OF SHELL TYPES TO ONE DIFFERENT SCHOOL EACH YEAR. MOTION WAS SECONDED BY MR. MIRON AND CARRIED.

NUMEROUS VISITORS WERE WELCOMED ALONG WITH SELDOM SEEN MEMBERS. AMONG THEM WERE DELSSON CONWAY, BRUCE CALLISTER, MRS. FRED EISELMANN, MRS. BARNETTE, MISS FOLLETT, MR. AND MRS. ERNIE LIBBY, MR. SUZUKI AND OTHERS.

MRS. L. N. DEXTER REPORTED THAT FRED WILSON WILL SOON OFFER INSTRUCTION ON SHELL IDENTIFICATION. CALL MRS. DEXTER FOR INFORMATION ABOUT THIS STUDY GROUP.

CONNIE BOONE SPOKE OF THE A.M.U. MEETING JULY 9-14 IN GALVESTON. REGISTRATION IS A MUST TO ATTEND MEETINGS, SOCIAL FUNCTIONS AND ONE OF 3 FIELD TRIPS WHICH SHE DESCRIBED. INFORMATION IS AVAILABLE THROUGH OUR CONCHOLOGY SOCIETY ABOUT THESE MEETINGS. A CONSERVATION QUESTIONNAIRE FROM A.M.U. WAS GIVEN TO MRS. DEXTER TO BE SENT IN.

SAM MIRON SAID THAT \$92.71 WORTH OF SHELLS WERE SOLD WHILE THEY WERE BEING PACKAGED AT MRS. BIVONA'S RESIDENCE, AND \$88.60 WORTH OF SHELLS WERE SOLD TONIGHT BEFORE THE MEETING AT MUSEUM OF NATURAL SCIENCE.

DR. SUTOW INTRODUCED ERNIE LIBBY, WHO PRESENTED THE AREA OF MICRONESIA IN PICTURES, WITH INTERESTING COMMENTARY. MR. LIBBY PROVIDED US WITH MUCH INFORMATION ABOUT THESE BEAUTIFUL ISLANDS AND THE PEOPLE. ALSO THEIR CUSTOMS AND WAY OF LIFE, AS WELL AS VALUABLE TIPS OF SHELLING IN THAT AREA OF THE WORLD. OUR THANKS TO ERNIE FOR AN ENJOYABLE EVENING.

MR. LIBBY BROUGHT A BEAUTIFUL SPECIMEN SHELL OF STROMBUS TAURUS, WHICH WAS AUCTIONED BY CLARICE VAN ERP FOR \$87.00. THE MONEY WILL GO INTO A FUND FOR BOOKS AND STAMP PICTURES IN MEMORY OF GEORGE MAJOR.

STUDIES IN TROPICAL AMERICAN MOLLUSKS. EDITED BY F. M. BAYER AND G. L. VOSS. UNIVERSITY OF MIAMI PRESS, 236 PP., ILLUS., CLOTH, \$12.50. THREE OF THE FOUR STUDIES DEAL WITH THE MOLLUSCAN FAUNA OF THE GULF OF PANAMA, AND ONE BY F. M. BAYER ENTITLED "NEW AND UNUSUAL MOLLUSKS COLLECTED BY R/V JOHN ELLIOT PILLSBURY AND R/V GERDA IN THE TROPICAL WESTERN ATLANTIC" MAKES AN IMPORTANT CONTRIBUTION TO THE KNOWLEDGE OF THE ATLANTIC FAUNA. IT IS OF IMPORTANCE TO STUDENTS OF THE FAUNA IN THE GULF OF MEXICO. 59 SPECIES OF WHICH 17 ARE NEW ARE DESCRIBED AND FIGURED. ACCORDING TO THE FOREWORD THESE PAPERS FORM PART OF THE RESULTS OF THE DEEP-SEA BIOLOGY PROGRAM OF THE UNIVERSITY OF MIAMI. THIS RESEARCH WAS UNDERTAKEN TO STUDY THE IMPACT OF A PROPOSED INTEROCEANIC SEA-LEVEL CANAL CONNECTING THE WATERS OF THE GULF OF PANAMA AND THE CARIBBEAN SEA. SO MUCH NEW INFORMATION HAS COME TO LIGHT THAT IT IS DESIRABLE TO MAKE AS MUCH OF IT AS POSSIBLE AVAILABLE TO RESEARCHERS BEFORE THE TOTAL STUDIES ARE PUBLISHED.

BECAUSE A NUMBER OF SPECIES TREATED BY BAYER OCCURS IN THE WESTERN GULF OF MEXICO, HIS STUDY HAS STRENGTHENED MY BELIEF THAT THE FAUNA OF THE WESTERN GULF OF MEXICO CONTAINS MANY ELEMENTS OF SOUTHERN CARIBBEAN ORIGIN AND IS CLOSER TO THE FAUNA OF THAT AREA THAN TO THE FAUNA OF FLORIDA.

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"AND MAY ALL YOUR SHELLS BE GOOD ONES"

THE 7TH ANNUAL SHELL SHOW WAS A GRAND SUCCESS, AND WE WISH TO THANK EACH AND EVERYONE OF OUR MEMBERS WHO PARTICIPATED. WE ESPECIALLY WISH TO VOICE OUR GRATITUDE TO OUR MANY FRIENDS FROM HOUSTON AND NEARBY CITIES WHO HELPED TO MAKE THE EXHIBITIONS FOR THE PUBLIC MORE MEANINGFUL AND APPEALING.

MAY YOU HAVE A WONDERFUL SUMMER, WITH BEACHES AND NEW WATERS TO EXPLORE. MAY ALL YOUR SHELLS BE GOOD ONES.

RUTH GOODSON, CHAIRMAN











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