

# A Preliminary Survey of Mollusks for Consag Rock and Adjacent Areas, Gulf of California, Mexico

BY

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(1 Map)

## INTRODUCTION

CONSAG ROCK, GULF OF CALIFORNIA, MEXICO is at Latitude 31°07'N, Longitude 114°27'W in the extreme upper reaches of the Gulf of California, east by north of San Felipe Bay, offshore approximately 20 miles. As far as we have been able to determine, no extensive collecting of mollusks has been done in the waters surrounding Consag Rock. For this reason we consider it desirable to publish the results of a 3-day trawling expedition in this and the immediately adjacent areas.

The list of mollusks which follows is based on the results of a joint trip made by the authors and other individuals on June 27, 28, and 29, 1968 during which 217 species were collected. The trip was organized primarily for members of the Conchological Club of Southern California by Ellen Brennan. The following persons have made their collections from this trip available to us: Twila Bratcher, Don Cadien, Billee Dilworth, Joseph DuShane, William and Joyce Gemmell, Roy Poorman, William E. Viney, Erwin and Gertrude Wahrenbrock.

The nudibranch fauna of the Panamic province is only recently becoming better known through the efforts of FARMER (1963, 1966, 1967), LANCE (1961, 1966, 1968), and MARCUS (1967). Therefore, a determined effort was made by Don Cadien of the Los Angeles County Museum of Natural History to collect representatives of this group of animals and to transport them back alive.

Some of the other areas in the Gulf of California have been rather extensively explored over a period of years

by the California Academy of Sciences (1888 - 1921), the *Velero III* of the Allan Hancock Foundation (1931 to 1941), and the Puritan - American Museum of Natural History Expedition (1958). Poorman dredged mollusks over a period of years (1961 - 1967) in the areas of San Carlos and Bacoichampo Bays, Guaymas, Sonora, Mexico. The specimens collected have been reported (DUSHANE & POORMAN, 1967).

## PREVIOUS COLLECTING IN THE VICINITY OF CONSAG ROCK

Historically, the Jesuit, Father Fernando Consag was among the first to make a reconnaissance trip in 1746 to the extreme northern reaches of the Gulf of California (ENGELHARDT, 1929: p. 266). The rock named for him is 289 feet high. A manuscript map by Consag (ADDINGTON MSS), with notations in his own handwriting, states that at Santa Isabel, "*hasta aqui llegan los placeros de perlas*" (thus far extend the pearl grounds). Santa Isabel was at a point on the east coast of peninsular Lower California about where Puertecitos is today.

Two records of molluscan collecting in the vicinity of Consag Rock appear in the literature: (1) The Allan Hancock Pacific Expeditions of 1937 and 1940 collected on and around Consag Rock and in San Felipe Bay. FRASER (1943) listed 6 dredging stations and 2 shore stations, but the mollusks remain largely unreported. (2) The 1957 Puritan - American Museum of Natural History Expedition reported 2 dredging stations 14 miles SW of Consag Rock. A general account of this expedition was given by EMERSON (1958).

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## OCEANOGRAPHIC CONSIDERATIONS

Very little is known concerning meteorological and oceanographic conditions at San Felipe and Consag Rock. Since the Jesuit missionaries established no mission at San Felipe we must rely on other, more recent, reports for information on air and water temperatures. No year around water temperature data are available (RODEN & GROVES 1959: p. 11). The air temperature in the northeastern section of the peninsula shows extremes from 18° F in winter to 128° F in summer (NELSON, 1922: p. 102), making this the hottest and driest part of Lower California. Occasionally violent storms come up the Gulf of California from the south or are driven over the high Peninsular Range from the Pacific ocean. The most recent devastating storm occurred at San Felipe on September 1, 1967. Summer rains are capricious and irregular; one place may be deluged while another close by may not receive a single drop. These rains are commonly in the form of cloudbursts, usually in July, August, or September with resultant heavy runoff into the western edge of the Gulf of California. Winter rains are also irregular and sometimes last only a few hours. Some years no winter rains fall. Average yearly rainfall is about 2.5 inches (Nelson, 1922: pp. 96, 98, 99).

One cannot discuss oceanographic conditions in this area without due consideration of the effects of the Colorado River upon the waters of the Gulf of California. Prior to 1938, when Boulder Dam was completed, the Colorado River watershed annually discharged billions of tons of silt into the waters of the Gulf. Since the tidal current in the Gulf is counterclockwise (BERRY, 1954: p. 24; RODEN, 1958: pp. 24, 33) this detrital material had been carried from the Colorado River as far south as San Felipe Point, an isolated volcanic part of the Peninsular Range on the western shore of the Gulf. As a result of this deluge of silt there are many pockets of mud in the northern end of this body of water. According to SYKES (1937: p. 107), "Driftwood, plainly of Colorado River origin, has been observed as far to the southward as the San Luis Islands, along the Lower California shore (latitude 30° N), and in this case the transporting agency was probably tidal current rather than wind." In the literature no such phenomenon has been reported on the Sonoran coast. With the completion of Boulder Dam and the further construction of an impounding and diversion dam at Parker, the movement of fresh detrital material is practically stopped (SYKES, 1937: p. 175).

San Felipe Bay is a shallow depression on the west side of the Gulf, with a sandy bottom and a tidal range of about 22 feet (7 m). The sea floor outside the bay slopes

very gradually to a depth of 27 fms (48 m) beyond Consag Rock at Lat. 31°12'N, Long. 114°22'W with many mud holes and sandy ridges present. Extensive evaporation, which increases salinity, occurs on the shallow protected bays of San Felipe as well as at Adair Bay on the Sonoran side and Concepción Bay on the Lower California side (RODEN & GROVES, 1959: p. 16). In the 30 years since the completion of Boulder and Parker Dams the silt, being more dense than the current-driven sand, still lies in pockets on the ocean floor. The current U. S. Navy Oceanographic map (Chart 620) shows these deposits.

## FAUNAL RELATIONSHIPS

The following lists record 217 species of mollusks, of which 58 are pelecypods, 5 are scaphopods, and 154 are gastropods. One is doubtfully identified ("cf.") and 7 are identified only to genus.

Because, to us, there are no known records of mollusks collected this far north in the Gulf of California we consider all specimens collected to represent northern extensions of the known range with the exceptions of *Calliostoma palmeri*, *Crepidula arnata*, *Crepidula incurva*, *Terebra glauca*, *Terebra armillata*, *Nassarius iodes*, and *Nassarius moestus* which the senior author collected intertidally in November 1967 at El Gulfo, Sonora, Mexico.

Although the molluscan fauna is predominantly Panamic, some members of the Californian province are represented in the northern Gulf. Specimens of the following species occurring in both the Californian and Panamic provinces are also to be found in trawling at Consag Rock and in the immediate vicinity of San Felipe Bay: *Nucula linki* DALL, *Hiatella arctica* (LINNAEUS), *Aesopus chrysalloides* CARPENTER, and *Iselica fenestrata* CARPENTER.

The faunal element restricted to the northern and northwestern shores is less well known but includes: *Acmaea strongiana*, *Nomaeopelta dalliana*, *Cantharus macropsis*, *Turritella anactor*, *Terebra berryi*, *Terebra dushanae*, *Recluzia palmeri* and *Melampus mousleyi*. Specimens of *Nassarina pannicra* reported by McLEAN (1961) from Los Angeles Bay as a range extension northward from Nicaragua have also been collected at Gonzaga Bay by DuSHANE & SPHON (1968) as well as at Puertecitos by DuSHANE (1964). *Terebra berryi* and *Terebra dushanae* seem to have a very limited distribution on the northwestern shores of the Gulf of California (type locality for both: Puertecitos). The former has not been found living at San Felipe but occurs sparingly at Gonzaga Bay to the south. The latter species occurs inter-

tidally uncommonly at Agua Chale, 24 miles south of San Felipe. *Terebra variegata*, well known throughout the Gulf, is missing from the San Felipe fauna, but was trawled off Agua Chale. *Strombina dorsata* occurs at both Puertecitos and Gonzaga Bay but is unrecorded at Los Angeles Bay. It occurs uncommonly at San Felipe Bay. *Nassarina anitae*, described by CAMPBELL (1961) from Guaymas, occurs uncommonly on clumps of *Pteria sterna* in the vicinity of Consag Rock. Specimens collected are essentially the same as the ones PARKER (1963: p. 167) reported from 11 to 26 meters in the northern Gulf.

The more unusual extensions of range northward are represented by specimens including: *Nucula linki*, *Diplothyra curta*, *Ostrea megodon*, *Lophocardium cumingii*, *Psephidia cymata*, *Macoma undulata*, *Aequipecten palmeri*, *Iselicia fenestrata*, *Clathrodrillia adonis*, *Crassispira bacchia*, *Clathurella acapulcana*, *Vitulularia salebrosa*, and *Conus tornatus*.

Allan G. Smith (personal communication) reports that a new species of *Fusinus* was taken in the area of Consag Rock. Another species of *Fusinus* awaits determination after a comparison of the radula with intertidal specimens of *Fusinus ambustus*.

An unusual occurrence of an arthropod taken merits a note: *Eupagurus varians* BENEDICT, together with its commensal hydractinian *Janaria mirabilis* STECHOW (Treatise Inv. Paleo.: p. 84) was common at stations 7, 8, and 13.

## SYSTEMATIC ACCOUNT

The following format is adopted:

1. The order in the checklist, the nomenclature, and the species numbers are those given by KEEN (1958) with a few changes as new material was discovered. References to species listed by KEEN may be located in her bibliography. References to species described since 1958 are included in the present paper.
2. The habitat and relative abundance of species taken are given. Indications are made for those species not taken alive.
3. The collecting stations referred to in the list by numbers are shown on the accompanying map. All species reported are from depths of from 3 to 21 fms (5 to 38 m).
4. Unusual range extensions are indicated by an asterisk (\*) following the "Keen numbers." The area from which the range is extended follows the collector's initial.
5. The following collectors are designated by initials:

Twila Bratcher	B
Ellen Brennan	Br
Don Cadien	C
Billee Dilworth	D
Joseph & Helen DuShane	Du
William & Joyce Gemmill	G
Roy Poorman	P
William E. Viney	V
Erwin & Gertrude Wahrenbrock	W

The specimens reported are in the private collections of the individuals named and the Cadien collection is in the Los Angeles County Museum of Natural History.

## ACKNOWLEDGMENTS

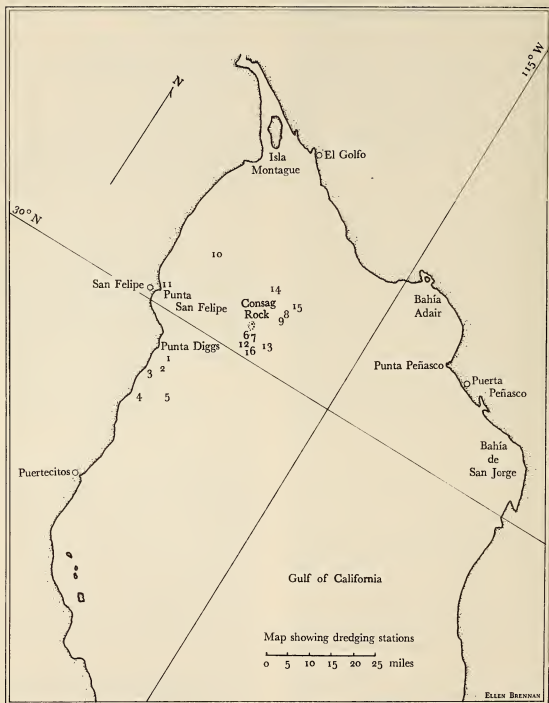
We wish to express our gratitude to Dr. A. Myra Keen and to Roy Poorman for identification of many of the small species; to Dr. James H. McLean of the Los Angeles County Museum of Natural History for critical evaluation of the manuscript; to Don Cadien of the same institution for identification of the nudibranchs.

## ECOLOGICAL NOTES ON 16 COLLECTING STATIONS

(see Map)

Over a three-day period mollusks were trawled at the following 16 stations. After an initial pull at 3 mph, which proved to be too rapid, all pulls were made at 2 mph, the minimum speed of the boat. In the notes below, longitude and latitude are given for the beginning of each pull.

1. Two miles off Punta Diggs, 12 miles S of the town of San Felipe; Lat. 30°51'12"N, Long. 114°39'W; course 160°. The nets were down for 40 minutes over sand bottom at a depth of 5 fm. Fish and sea stars comprised the bulk of the material trawled. The stomachs of one species of sea star yielded many mollusks, among them species of *Nuculana*, *Pitar*, *Pandora*, *Olivella* and *Acteocina*.
2. Two miles offshore from Alicia Playa, 18 miles S of the town of San Felipe; Lat. 30°46'N, Long. 114°40'W; course 130°. The nets trawled over sand bottom at a depth of 6 to 7 fm. A great number of sea stars were included in this haul and their stomachs yielded species of *Crassinella*, *Trigoniocardia*, *Nassarius*, and *Olivella*, along with *Chione mariae* and juvenile *Cosmioconcha palmeri*.



3. Four rope tangles were set south of Alicia Playa, 18 miles S of the town of San Felipe, Lat. 30°44'30" N, Long. 114°41' W, in 3 fm of water over rocks. They were baited with decaying fish contained in nylon bags. The tangles were left in the water about 3 hours and when retrieved, the bait was gone. Quick examination on the spot revealed no mollusks; however, later careful examination revealed several specimens of *Anachis varia*, *A. milium*, and a juvenile *Muricanthus nigrilus* which had crawled high into the untwisted strands of the tangle. If a way could be devised to keep the bait in the tangles, this could prove to be a good collecting device.
4. Two miles offshore from Agua Chale, 24 miles S of the town of San Felipe; Lat. 30°41' N, Long. 114°40'06" W; course 195°. This pull covered one mile of sand bottom at a depth of 5 fm paralleling an offshore rock reef. It yielded fish, crustaceans, and 2 species of sea stars. Examination of the stomachs of these echinoderms produced several species of *Nuculana*, *Pandora brevifrons*, *Calliostoma palmeri*, and *Eupleura muriciformis*.
5. Eight miles E of Agua Chale, 24 miles S of San Felipe; Lat. 30°41' N, Long. 114°32' W; course 340°. This one-mile pull over sand and mud pockets at a depth of 10 fm yielded a large quantity of fish and 2 species of sea stars, their stomachs containing species of *Nuculana*, juvenile *Trachycardium senticosum*, *Chione mariae*, *C. gnidia*, and *C. pulicaria*.
6. Two miles SW of Consag Rock, Lat. 31°06' N, Long. 114°30'30" W; course 095°. On this pull and all subsequent ones, more weight was added to the nets, producing better results. The nets trawled over one mile of sand bottom at a depth of 12 fm, producing quantities of *Hexaplex erythrostomus*, *Muricanthus nigrilus* with eggs. *Calyptraea*, *Crepidula*, and *Crucibulum* were common attached to dead shells.
7. Two miles S of Consag Rock, Lat. 31°05' N, Long. 114°28'30" W; course 100°. On this pull the nets trawled over  $\frac{3}{4}$  of a mile of sand bottom at a depth of 11 fm. Among the mollusks trawled were *Calliostoma palmeri*, *Ficus ventricosa*, *Murex elenensis*, *M. recurvirostris lividus*, *Pteropurpura erinaceoides*, *Acanthina tuberculata*, and *Cancellaria cassidiiformis*. Basket stars of the genus *Crinoidea* were common as were sponges, red-brown in color, each growing upon and completely enveloping a shell.
8. Eight miles ENE of Consag Rock, Lat. 31°08'30" N, Long. 114°21' W; course 340°. A one mile pull over sand bottom at a depth of 18 fm produced many clumps of living *Pteria sterna* among the lamellae of which were *Septifer zetekii*, *Hiatella arctica*, *Epitonium keratium*, *Isella fenestrata*, and *Nassarina anitae*. *Vitularia salebrosa* was taken living on dead *P. sterna* shells, as was *Modiolus capax*.
9. Seven miles ENE of Consag Rock, Lat. 31°08' N, Long. 114°21' W; course 020°. A one mile pull over sand bottom at 15 fm depth produced approximately the same mollusk species as were trawled at Station 8, with the addition of *Lioberus splendida* and *Atrina tuberculosa*.
10. Seventeen miles NW of Consag Rock, Lat. 31°20'18" N, Long. 114°41' W. After a one mile pull at a depth of 14 fm over mud bottom, the nets were full of *Astropecten*. Examination of the stomachs of the sea stars produced such mollusks as *Natica linki*, *Natica broderipiana*, and *Strombina dorsata*.
11. Three-fourths of a mile offshore, beginning north of San Felipe Point and ending south of San Felipe Point; Lat. 31°02'30" N, Long. 114°48' W. This pull was  $\frac{3}{4}$  of a mile long, over sand and mud bottom at a depth of 6 fm. The nets yielded a coral-related material containing *Diplothyra curta* and *Lithophaga attenuata rogersi*. A large mass of aborted egg strings was found to contain a multitude of small shells. Among the genera represented were *Nucula*, *Nuculana*, *Balcis*, *Niso*, *Epitonium*, *Cyclostremiscus*, *Seila*, *Aesopus*, *Nassarina*, *Anachis*, *Clavus*, *Clathrodrillia*, and *Mangelia*.
12. Three miles SW of Consag Rock, Lat. 31°04'30" N, Long. 114°31'30" W; course 080°. This was a one mile pull over sand bottom at a depth of 13 fm. The otter trawl brought up *Polinices intemeratus*, *Hexaplex erythrostomus*, *Muricanthus nigrilus* with eggs, and *Solenosteira capitaneus*.
13. Five miles SSE of Consag Rock, Lat. 31°02'12" N, Long. 114°26'24" W; course 070°. A one mile pull over sand bottom at 11 fm depth produced such mollusks as *Ficus ventricosa*, *Murex recurvirostris lividus*, *Pteropurpura erinaceoides*, *Cancellaria cassidiiformis*, and *Conus poormani*.
14. Eight miles NE of Consag Rock, Lat. 31°12' N, Long. 114°22' W; course 080°. A  $\frac{3}{4}$  mile pull over sand and clay bottom at a depth of 21 fm produced essentially the same species as were trawled at Stations 8 and 9.
15. Ten miles ENE of Consag Rock, Lat. 31°09'12" N, Long. 114°17'36" W; course 314°. This was a one mile pull over sand and clay bottom at 16 fm depth. The trawl was full of clumps of *Pteria sterna* attached to which were *Ostrea conchaphila*, *O. megodon*, *O. pal-*

*mula*, *Chama sordida*, *C. buddiana*, and *Nassarina pam-mira*.

16. Five miles S of Consag Rock, Lat. 31°03'N, Long. 114°31'30"W; course 270°. This one mile pull over sand bottom at 11 fm depth produced essentially the same mollusk species as were trawled at Station 13.

### PELECYPODA

- 1 *Nucula declivis* HINDS, 1843. Uncommon (10, 11), 6 - 14 fm, mud and sand bottom, in sea star stomachs and entangled in aborted egg mass (B, C, D, G, P).
- 3\* *Nucula linki* DALL, 1916. Rare (10), 14 fm, mud and sand bottom, from sea star stomachs; Pt. Fern, Gulf of California (Du, G).
- 10 *Nuculana elenensis* (SOWERBY, 1833). Uncommon (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (Br, C, Du).
- 12 *Nuculana impar* (PILSBRY & LOWE, 1932). Common (1, 4, 5, 10, 15), 5 - 16 fm; sand, mud, and clay bottom; in sea star stomachs (B, Br, C, D, G).
- 13 *Nuculana laeviradius* (PILSBRY & LOWE, 1932). Common (4, 5, 9, 10, 14), 5 - 21 fm; sand, mud, and clay bottom; in sea star stomachs (B, C, D, Du, G, P).
- 87 *Septifer zeteki* HERTLEIN & STRONG, 1946. Rare (8), 18 fm, sand bottom (C, Du).
- 91a *Lithophaga attenuata rogersi* BERRY, 1957. Uncommon (11), 6 fm, in chunks of coral-related material (C, W).
- 101 *Modiolus capax* (CONRAD, 1837). Rare (8), 18 fm, attached to *Pteria sterna* (Du).
- 106 *Lioberus splendida* DUNKER, 1857. Uncommon (7, 14), 11 - 21 fm, sand bottom and on *Pteria sterna* (Br, Du, G).
- 107 *Pteria sterna* (GOULD, 1851). Common (8, 9, 14, 15), 15 - 21 fm, sand and clay bottom (B, Br, C, D, Du, G, P, V, W).
- 113 *Atrina tuberculosa* (SOWERBY, 1835). Rare (9), 15 fm, sand bottom (C).
- 119 *Ostrea conchaphila* CARPENTER, 1857. Uncommon (9, 10, 14, 15), 15 - 21 fm, sand and clay bottom, on dead *Pteria sterna* shells (Du).
- 123 *Ostrea megodon* HANLEY, 1846. Rare (15), 16 fm, sand and clay bottom (D).
- 124 *Ostrea palmula* CARPENTER, 1857. Uncommon (9, 10, 14, 15), 15 - 21 fm, sand and clay bottom, on *Pteria sterna* (Du).
- 126 *Pecten vogdesi* ARNOLD, 1906. Uncommon as valves and dead specimens (8, 13), 11 - 18 fm, sand bottom (Br).
- 128 *Aequipecten palmeri* (DALL, 1897). Common (7, 8, 9, 13, 16), 11 - 18 fm, sand bottom (Br, C, Du, G, P).
- 132 *Aequipecten circularis* (SOWERBY, 1835). Common (6, 7, 8, 9, 12, 13, 14, 15, 16), 11 - 21 fm, sand and clay bottom; attached to *Pteria sterna*, gastropods, and in sea star stomachs (Br, C, Du, G, P).
- 147 *Plicatula anomioides* KEEN, 1958. Uncommon (15), 16 fm, sand and clay bottom, on dead *Pteria sterna* shells (Du).
- 159 *Crassinella pacifica* (C. B. ADAMS, 1852). Uncommon (2, 11), 6 fm, sand and mud bottom, in sea star stomachs and entangled in aborted egg mass (B, Br, C, D, Du, P).
- 231 *Myrella compressa* (DALL, 1913). Rare (9), 15 fm, sand bottom, in sea star stomachs (P).
- 238 *Chama buddiana* C. B. ADAMS, 1852. Uncommon (8), 18 fm, sand bottom, juveniles attached to dead shells (C, Du).
- 241 *Chama sordida* BRODERIP, 1835. Common (8, 9, 14, 15), 15 - 21 fm, sand and clay bottom, attached to *Pteria sterna* (Br, C, Du, G).
- 251 *Trachycardium senticosum* (SOWERBY, 1833). Common (5, 16), 10 - 11 fm, sand bottom, juveniles in sea star stomachs (Br, C, Du, P).
- 256 *Trigoniocardia granifera* (BRODERIP & SOWERBY, 1829). Uncommon (2, 4), 5 - 7 fm, sand bottom, juveniles in sea star stomachs (C, Du, G, P).
- 262 *Laevicardium elatum* (SOWERBY, 1833). Rare (6), juvenile, 12 fm, sand bottom (C).
- 263 *Laevicardium elenense* (SOWERBY, 1840 [?1841]). Uncommon (11, 12), 6 - 13 fm, sand and mud bottom, juveniles in crevices of coral-related material and in sea star stomachs (Br, C, G, P).
- 264 *Lophocardium annettae* (DALL, 1889). Rare (14), valve only, 21 fm, sand and clay bottom (Br).
- 265 *Lophocardium cumingii* (BRODERIP, 1833). Rare (9), valve only, 15 fm, sand bottom (Du).
- 282 *Transennella tantilla* (GOULD, 1853). Rare (9), 15 fm, sand bottom, in sea star stomachs (P).
- 286 *Pitar helenae* OLSSON, 1961. Uncommon (6, 10), 12 - 14 fm, sand and mud bottom, in sea star stomachs (Br, Du).
- 287 *Pitar perfragilis* PILSBRY & LOWE, 1932. Rare (4), 5 fm, sand bottom, in sea star stomachs (P).
- 296 *Pitar concinnus* (SOWERBY, 1835). Common (1, 2, 4, 5), 5 - 10 fm, sand and mud bottom, in sea star stomachs (C, Du, G, P).
- 306 *Dosinia ponderosa* (GRAY, 1838). Uncommon (2, 13), 6 - 11 fm, sand bottom, juveniles in sea star stomachs (C, Du, P).



- 315 *Psephidia cymata* DALL, 1913. Uncommon (10, 14, 15), 14-21 fm, sand and clay bottom, in sea star stomachs (C, Du, P).
- 326 *Chione gnidia* (BRODERIP & SOWERBY, 1829). Common, juveniles (1, 2, 4, 5), 5-10 fm, sand and mud bottom, in sea star stomachs (C, Du, G, P).
- 327 *Chione pulicaria* (BRODERIP, 1835). Uncommon (2, 3, 5), 5-10 fm, sand and mud bottom, juveniles in sea star stomachs (Br, C, Du, P).
- 331 *Chione mariae* (D'ORBIGNY, 1845). Common (2, 4, 5, 10, 13, 16), 5-14 fm, sand and mud bottom, in sea star stomachs (Br, C, Du, G, P).
- 335 *Chione picta* WILLETT, 1944. Rare (2), 6-7 fm, sand bottom, in sea star stomachs (B).
- 392 *Tellina amianta* DALL, 1900. Common (10, 14, 15), 14-21 fm, mud, sand, and clay bottom; from washings of *Pteria sterna* and in sea star stomachs (Br, C, Du, P).
- 425 *Macoma undatella* (HANLEY, 1844). Uncommon (10), 14 fm, mud bottom, in sea star stomachs (Br, Du, G, P).
- 436 *Macoma pacis* PILSBRY & LOWE, 1932. Uncommon (4), 5 fm, sand bottom, in sea star stomachs (G).
- 438 *Strigilla cicercula* (PHILIPPI, 1846). Rare (9), 15 fm, sand bottom, in sea star stomachs (G).
- 441 *Strigilla lenticula* PHILIPPI, 1846. Rare (7), 11 fm, sand bottom, in sea star stomach (P).
- 450 *Donax gracilis* HANLEY, 1845. Uncommon (4, 5), 5-10 fm, sand and mud bottom, in sea star stomachs (Br, Du, G).
- 475 *Tagelus politus* (CARPENTER, 1857). Uncommon (11), 6 fm, sand and mud bottom, juveniles entangled in aborted egg mass (C, P).
- 483 *Semele guaymasensis* (PILSBRY & LOWE, 1932). Uncommon (6), 12 fm, sand bottom, in sea star stomachs (Du, G, P).
- 489 *Semele pacifica* DALL, 1915. Uncommon (7), 11 fm, sand bottom, in sea star stomachs (Du, G).
- 507 *Abra tepocana* DALL, 1915. Rare (5), 10 fm, sand and mud bottom, in sea star stomachs (G).
- 527 *Corbula nasuta* SOWERBY, 1833. Common (6 to 10, 12 to 16), 11-21 fm, sand, mud, and clay bottom; in sea star stomachs and in washings from *Pteria sterna* (B, Br, C, D, Du, G, P).
- 539 *Gastrochaena ovata* SOWERBY, 1834. Rare, valves only (11), 6 fm, sand and mud bottom, embedded in coral-related material (Br).
- 542 *Hiatella arctica* (LINNAEUS, 1767). Common (7, 8, 9, 13, 14, 15), 11-21 fm, sand and clay bottom, nestling on outer edges of *Pteria sterna* and on *Muricanthus nigrinus* (Br, C, Du, G, P).
- 545 *Panope globosa* DALL, 1898. Valve only (13), 11 fm, sand bottom (C).
- 553 *Diplothyra curta* (SOWERBY, 1834). Common (11), 6 fm, sand and mud bottom, boring in coral-related material (Br, C, W).
- 567 *Pandora brevifrons* SOWERBY, 1835. Common (4, 6, 7, 12, 13, 16), 5-13 fm, sand bottom, in sea star stomachs (Br, C, G).
- 569 *Pandora claviculata* CARPENTER, 1855. Uncommon (10), 14 fm, mud bottom, in sea star stomachs (Du).
- 576 *Pandora granulata* DALL, 1915. Uncommon (1, 2), 5-7 fm, sand bottom, in sea star stomachs (Du, P).
- 591\* *Asthenothaerus villosior* CARPENTER, 1864. Uncommon (10), 14 fm, mud bottom, in sea star stomachs; Cape San Lucas, Lower California (P).
- 597 *Cuspidaria didyma* (HINDS, 1843). Rare (14), valves only, 21 fm, sand and clay bottom, from sea star stomachs (Du).

## SCAPHOPODA

- 2 *Dentalium inversum* DESHAYES, 1826. Uncommon (14), 21 fm, sand and clay bottom, in sea star stomachs (B, D).
- 3 *Dentalium oerstedii* MÖRCH, 1860. Common (9, 11, 15), 6-10 fm, sand, clay, and mud bottom; in sea star stomachs and entangled in aborted egg mass (B, Br, C, D, Du, P).
- 5 *Dentalium sectum* DESHAYES, 1826. Uncommon (4), 5 fm, sand bottom, in sea star stomachs (G).
- 9 *Dentalium quadrangulare* SOWERBY, 1832. Uncommon (8), 18 fm, sand bottom, in sea star stomach (G).
- 12 *Cadulus panamensis* PILSBRY & SHARP, 1897. Common (1, 2, 8, 10, 11), 5-18 fm, sand and mud bottom, entangled in aborted egg mass, in sea star stomachs, and in washings from *Pteria sterna* (B, Br, C, D, Du, G, P).

## GASTROPODA

- 30 *Diodora alta* (C. B. ADAMS, 1852). Rare (8), 18 fm, sand bottom, attached to dead shell (C).
- 45 *Calliostoma marshalli* LOWE, 1935. Common (2, 4, 8, 9, 14, 15), 18 fm, sand and clay bottom, in sea star stomachs and in clumps of *Pteria sterna* (B, C, D, Du, G).
- 47 *Calliostoma palmeri* DALL, 1871. Uncommon (7, 8, 13), 11-18 fm, sand bottom, also in sea star stomachs (Br, C, Du, P).

- 60 *Solariella triplostephanus* DALL, 1910. Rare (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (G).
- 66 *Turbo mazatlanicus* PILSBRY & LOWE, 1932. Rare (4), 5 fm, sand bottom, in sea star stomachs (B, D). *Liotia balboa* STRONG & HERTLEIN, 1939. Rare (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (B, D, G). *Liotia stearnsi* DALL, 1918. Rare (2), 6-7 fm, sand bottom, in sea star stomachs (B, D). *Arene rammata* (DALL, 1918). Uncommon (4, 5), 5-10 fm, sand and mud bottom, in sea star stomachs (B, D). *Tricolia equilirata* CARPENTER, 1857. Uncommon (9), 15 fm, sand bottom, in sea star stomachs (B, D). *Balcis mexicana* BARTSCH, 1917. Rare (1, 11), 5-6 fm, sand and mud bottom, in sea star stomachs and entangled in aborted egg mass (Br, C, Du).
- 87 *Niso excolpa* BARTSCH, 1917. Uncommon (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (B, C, D, Du). *Epitonium keratium* DALL, 1919. Uncommon (8, 11), living on *Pteria sterna* shells, 18 fm; entangled in aborted egg mass, 6 fm, sand and mud bottom (Br, C, Du).
- 99 *Epitonium walkerianum* HERTLEIN & STRONG, 1951. Uncommon (2, 11), 5-6 fm, sand and mud bottom, in sea star stomachs and dead in aborted egg mass (Br, C, G).
- 105 *Epitonium reflexum* (CARPENTER, 1856). Uncommon (11), 6 fm, sand and mud bottom, dead in aborted egg mass (C, Du).
- 106 *Epitonium bahkanstranum* KEEN, 1962. Uncommon (11), 6 fm, sand and mud bottom, dead in aborted egg mass (Br, C, Du).
- 107 *Epitonium appressicostatum* DALL, 1917. Uncommon (11), 6 fm, sand and mud bottom, dead in aborted egg mass (Du).
- 108 *Epitonium barbarinum* DALL, 1919. Common (11), 6 fm, sand and mud bottom, dead in aborted egg mass (B, D, P).
- 118 *Epitonium durhamianum* HERTLEIN & STRONG, 1951. Rare (11), 6 fm, sand and mud bottom, dead in aborted egg mass (B, D, P).
- \* *Lacuna succinea* MÖRCH, 1860. Rare (8), 18 fm, sand bottom, juveniles in washings from *Pteria sterna*; Gulf of Nicoya, Costa Rica (C, Du). *Cyclostremiscus bifrontia* CARPENTER, 1857. Rare (4), 5 fm, sand bottom, in sea star stomach (G). *Cyclostremiscus tricarinatus* C. B. ADAMS, 1852. Common (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (B, Br, C, D, Du, P).
- Macromphalina* sp. Rare (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (Br). *Delphinoidea hambachi* STRONG & HERTLEIN, 1939. Rare (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (P). *Teinostoma amplexians* CARPENTER, 1857. Rare (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (C).
- \* *Teinostoma ecuadorianum* PILSBRY & OLSSON, 1941. Rare (11), 6 fm, sand and mud bottom, in aborted egg mass; Punta Blanca, Ecuador (B, D, P). *Vitrinella dalli* (BARTSCH, 1911). Uncommon (7), 11 fm, sand bottom, in sea star stomach (D). *Assiminea* sp. Uncommon (15), 16 fm, sand and clay bottom, on *Pteria sterna* shells (G).
- 180 *Turritella anactor* BERRY, 1957. Uncommon (7, 13), 11 fm, sand bottom, dead specimens and juveniles in sea star stomachs (Br, C, Du, G).
- 187 *Turritella nodulosa* KING & BRODERIP, 1832. Uncommon (11), 6 fm, sand and mud bottom, juveniles entangled in egg mass (P). *Metaxia* sp. Uncommon (11), 6 fm, sand and mud bottom, in aborted egg mass (G). *Seila assimilata* C. B. ADAMS, 1852. Common (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (B, Br, D, P). *Seila* sp. Uncommon (11), 6 fm, sand and mud bottom, entangled in aborted egg mass (C, Du). *Triphora hannai* BAKER, 1926. Rare (8), 18 fm, sand bottom, in washings from *Pteria sterna* (Du).
- \* *Iselia fenestrata* CARPENTER, 1864. Common (8, 9, 14, 15), sand and clay bottom, on *Pteria sterna*; San Diego, California (Br, C, Du, G, P).
- 233 *Calyptraea mamillaris* BRODERIP, 1834. Common (1, 7, 8, 9, 12 to 16), 5-21 fm, sand, clay, and mud bottom; attached to dead shells (Br, Du, P).
- 240 *Crepidula arenata* (BRODERIP, 1834). Common (7, 8, 13), 11-18 fm, sand bottom, on *Calliostoma palmeri* (Du).
- 242 *Crepidula incurva* (BRODERIP, 1834). Common (7, 8, 13), 11-18 fm, sand bottom, on *Calliostoma palmeri* (Du).
- 245 *Crepidula onyx* SOWERBY, 1824. Common on dead shells (6, 7, 12, 13), 11-13 fm, sand bottom (B, Br, D, Du, P).
- 248 *Crepidula striolata* MENKE, 1851. Uncommon (7, 11), 6-11 fm, sand and mud bottom, entangled in aborted egg mass and on dead bivalves (G, P).
- 251 *Crucibulum personatum* KEEN, 1958. Common (11, 13, 16), sand and mud bottom, on coral-related material and on dead shells (B, Br, C, D, Du, P).



- 252 *Crucibulum scutellatum* (WOOD, 1828). Common (13, 16), 11 fm, sand bottom, on other shells (Br, C, Du, P).
- 254 *Crucibulum spinosum* (SOWERBY, 1824). Common (8, 11, 14, 15), 6 - 21 fm, sand, mud, and clay bottom; juveniles on other shells and entangled in aborted egg mass (Du, G, P).
- 261 *Natica idiopoma* PILSBRY & LOWE, 1932. Rare (8), 18 fm, sand bottom, in sea star stomachs (B, P).
- 263 *Natica broderipiana* RÉCLUZ, 1844. Uncommon. (10), 14 fm, mud bottom, in sea star stomachs (Br, G).
- 266 *Polinices bifasciatus* (GRIFFITH & PIDGEON, 1834 from GRAY MS.). Uncommon (13), 11 fm, sand bottom, juvenile in sea star stomach (Br).
- 269 *Polinices intemeratus* (PHILIPPI, 1853). Uncommon (12), 13 fm, sand bottom (Du).
- 272 *Polinices uber* (VALENCIENNES, 1832). Uncommon (1, 2, 4), 5 - 7 fm, sand and mud bottom, in sea star stomachs (B, D, G).
- 274 *Polinices reclusianus* (DESHAYES, 1839). Common (1, 4, 5), 5 - 10 fm, juveniles in sea star stomachs (B, Br, C, D, Du, G, P).
- 280 *Lamellaria inflata* (C. B. ADAMS, 1852). Rare (14), 21 fm, sand and clay bottom, in washings from *Pteria sterna* (B).
- 289 *Erató columbella* MENKE, 1847. Uncommon (15), 16 fm, sand and clay bottom with clumps of *Pteria sterna*, in sea star stomachs (D, P).
- 317 *Ficus ventricosa* (SOWERBY, 1825). Uncommon (7, 13, 14), 11 - 21 fm, sand and clay bottom (C, D, Du, G).
- 335 *Murex elenensis* DALL, 1909. Uncommon (7, 16), 11 fm, sand bottom (Du, V).
- 336a *Murex recurvirostris lividus* CARPENTER, 1857. Uncommon (7, 13), 11 fm, sand bottom (B, C, D, P).
- 339 *Hexaplex erythrostomus* (SWAINSON, 1831). Common (6, 7, 8, 12, 13, 14), 11 - 21 fm, sand and clay bottom (Br, C, Du, P, V, W).
- 344 *Muricanthus nigrinus* (PHILIPPI, 1845). Common (6, 7, 12, 13), 11 - 13 fm, sand bottom (B, Br, C, D, Du, G, P, V).
- 348 *Pteropurpura erinaceoides* (VALENCIENNES, 1832). Uncommon (7, 13), 11 fm, sand bottom (B, Br, D, V).
- 364 *Eupleura muriciformis* (BRODERIP, 1833). Common (4, 11), 5 - 6 fm, sand and mud bottom, juveniles in sea star stomachs and entangled in aborted egg mass (B, Br, C, D, Du, G, P).
- 370\* *Vitularia salebrosa* (KING & BRODERIP, 1832). Uncommon (8, 9, 14, 15), sand and clay bottom, attached to *Pteria sterna*; Guaymas, Sonora, Mexico (Br, C, Du, G).
- 409 *Acanthina tuberculata* (SOWERBY, 1835). Uncommon (7), 11 fm, sand bottom (C, Du).
- 417 *Aesopus sanctus* DALL, 1919. Uncommon (11), 6 fm, sand and mud bottom, in aborted egg mass (B, Br, D, P).
- \* *Aesopus chrysalloides* CARPENTER, 1864. Rare (11), 6 fm, sand and mud bottom; San Diego, California (Du, G).
- 429 *Anachis diminuta* (C. B. ADAMS, 1852). Uncommon (11), 6 fm, sand and mud bottom, dead in aborted egg mass (Du, P).
- 442 *Anachis milium* (DALL, 1916). Common (3, 11), taken in rope tangles, 3 fm, rocky bottom; in aborted egg mass, 6 fm, sand and mud bottom (Br, C, Du).
- 444 *Anachis nigricans* (SOWERBY, 1844). Uncommon (11), 6 fm, sand and mud bottom, dead in egg mass (P).
- 454 *Anachis sanfelipensis* LOWE, 1935. Uncommon (11), 6 fm, sand and mud bottom, juveniles dead in egg mass (Du).
- 464 *Anachis varia* (SOWERBY, 1832). Common (3, 7, 11), taken in rope tangle, 3 fm, rocky bottom; in sea star stomachs and on chunks of coral-related material, 6 - 11 fm, sand and mud bottom (B, Br, C, D, Du, G, P).
- 470 *Cosmioconcha palmeri* (DALL, 1913). Common as juveniles (2, 5, 8, 11), 6 - 18 fm, sand and mud bottom, in sea star stomachs and in egg mass (B, Br, C, D, Du, G, P).
- 490 *Nassarina pammicra* PILSBRY & LOWE, 1932. Rare (15), 16 fm, sand and clay bottom, on *Pteria sterna* (Du).
- Nassarina anitae* CAMPBELL, 1961. Uncommon (8), 18 fm, sand bottom, in washings from *Pteria sterna* (C, Du, P).
- Nassarina*, possibly new spec. Rare (11), 6 fm, sand and mud bottom, in aborted egg mass (Br, G).
- 508 *Strombina dorsata* (SOWERBY, 1832). Uncommon (10, 11, 14), 6 - 21 fm, sand, mud, and clay bottom; in sea star stomachs and dead in egg mass (Br, Du).
- 512 *Strombina gibberula* (SOWERBY, 1832). Uncommon (14), 21 fm, sand and clay bottom with clumps of *Pteria sterna*, in sea star stomachs (B, C, D, Du, G).
- 541 *Solenosteira capitaneus* (BERRY, 1957). Uncommon (8, 11), 6 - 13 fm, sand bottom (Br, P).
- 543 *Solenosteira macrospira* (BERRY, 1957). Uncommon (8, 11), 6 - 18 fm, sand bottom, dead specimens and juveniles entangled in egg mass (C, Du, G).
- 563 *Phos gaudens* HINDS, 1844. Common (11, 14), 6 to 21 fm, mud, sand, and clay bottom; in sea star stomachs and entangled in egg mass (B, Br, C, D, Du, G, P).

- 577 *Nassarius guaymasensis* (PILSBRY & LOWE, 1932). Common (11), sand and mud bottom, dead in egg mass (C, Du, G).
- 583 *Nassarius pagodus* (REEVE, 1844). Uncommon (2, 6, 10), 6-14 fm, sand and mud bottom (Br, Du, P).
- 586 *Nassarius taeniolatus* (PHILIPPI, 1845). Common (2, 10, 11), 6-14 fm, sand and mud bottom, in sea star stomachs and entangled in egg mass (B, Br, C, D, Du, G, P).
- 587 *Nassarius versicolor* (C. B. ADAMS, 1852). Common (9, 10, 11), 6-15 fm, sand and mud bottom, in sea star stomachs and in egg mass (B, Br, C, D, Du, G, P).
- 591 *Nassarius iodes* (DALL, 1917). Common (11), 6 fm, sand and mud bottom, entangled in egg mass (Du, G, P).
- 593 *Nassarius moestus* (HINDS, 1844). Uncommon (1, 2), 5-7 fm, sand bottom, in sea star stomachs (Du, P). *Nassarius howardae* CHACE, 1958. Uncommon (11), 6 fm, sand and mud bottom, entangled in egg mass (Br, P).
- 610 *Fusinus dupetitthouarsi* (KIENER, 1846). Uncommon (8), 18 fm, sand bottom, dead (Br, C).
- 612 *Fusinus ambustus* (GOULD, 1853). Uncommon (13), 11 fm, sand bottom, dead (G).
- 614 *Fusinus fredbakeri* LOWE, 1935. One dead specimen (11), 6 fm, sand bottom, entangled in egg mass (C). *Fusinus*, new spec. Uncommon (7, 13), 11 fm, sand bottom (C, Du).
- Fusinus* spec. (possibly new, or dredged form of *F. ambustus*). Common (7 to 10, 13, 16), 11-16 fm, sand and mud bottom (B, Br, D, Du, P, V).
- 625 *Oliva spicata* (RÖDING, 1798). Uncommon (11, 14), 6-21 fm, sand bottom (Br, C, Du, G).
- 627 *Oliva undatella* LAMARCK, 1810. Uncommon (11), 6 fm, sand bottom, dead (C, Du, P).
- 634a *Olivella fletcheriae* BERRY, 1958. Common (2, 4, 7, 11, 13, 16), 5-11 fm, sand bottom, in sea star stomachs and in egg mass (Br, C, Du, G, P). *Olivella steveni* BURCH & CAMPBELL, 1963. Rare (4), 5 fm, sand bottom, in sea star stomachs (P).
- 693 *Cancellaria cassidiformis* SOWERBY, 1832. Uncommon (6, 7), 11-12 fm, sand and mud bottom (C, Du, G).
- 717 *Daphnella bartschi* DALL, 1919. Rare (13), 11 fm, sand bottom, in sea star stomachs (B, D).
- 741 *Clavus roseolus* (HERTLEIN & STRONG, 1955). Rare (7), 11 fm, sand bottom, in sponge (P).
- 747 *Clavus aeolius* (DALL, 1919). Uncommon (1, 11), 5-6 fm, sand and mud bottom, in sea star stomachs and in egg mass (B, C, D, Du, G).
- 748 *Clavus aerope* (DALL, 1919). Rare (11), 6 fm, sand and mud bottom, in egg mass (Br).
- 753 *Clavus ianthe* (DALL, 1919). Common (11), 6 fm, sand and mud bottom, in egg mass (B, Br, C, D, Du, G).
- 758 *Clavus pembertoni* LOWE, 1935. Uncommon (7), 11 fm, sand bottom, in sponge (P).
- 765 *Clathrodrillia callianira* DALL, 1919. Rare (15), 16 fm, sand and clay bottom with clumps of *Pteria sterna*, in sea star stomachs (Br).
- 767 *Clathrodrillia maura* (SOWERBY, 1834). Rare (8), 18 fm, sand bottom, in sponge (Br).
- 769 *Clathrodrillia pilsbryi* LOWE, 1935. Uncommon (11, 14), 6-21 fm, sand, mud, and clay bottom; in sea star stomachs and in egg mass (B, Br, D, Du, G).
- 771 *Clathrodrillia adonis* (PILSBRY & LOWE, 1932). Uncommon (15), 16 fm, sand and clay bottom, from sea star stomachs (Du).
- 772 *Clathrodrillia alcestis* DALL, 1919. Rare (15), 16 fm, sand and clay bottom, in sea star stomach (P).
- 774 *Clathrodrillia duplicata* (SOWERBY, 1834). Uncommon (7), 11 fm, sand bottom, in sponge (B, Br, D).
- 776 *Clathrodrillia halis* DALL, 1919. Uncommon (11), 6 fm, sand and mud bottom, entangled in egg mass (B, D, P).
- 776a *Clathrodrillia halis soror* (PILSBRY & LOWE, 1932). Common (6, 7, 11, 13), 6-12 fm, sand and mud bottom; in sponge, in sea star stomachs, and in aborted egg mass (Br, C, Du, G, P).
- 790 *Crassispira bacchia* DALL, 1919. Common (6, 11), 6-12 fm, sand and mud bottom, in sea star stomachs and dead in egg mass (B, Br, C, D, Du, P). *Crassispira* cf. *C. pauxillus* REEVE, 1843. Uncommon (1), 5 fm, sand bottom, in sea star stomachs (Du, P).
- 825 *Crassispira pluto* PILSBRY & LOWE, 1932. Uncommon (11), 6 fm, sand and mud bottom, dead in egg mass (Br).
- 843 *Hindsiclava militaris* (REEVE, 1843 ex HINDS MS). Uncommon (7), 11 fm, sand bottom, in sponge (Br).
- 858 *Mangelia aethra* (DALL, 1919). Rare (11), 6 fm, sand and mud bottom, in egg mass (D).
- 862 *Mangelia melita* (DALL, 1919). Common (11), 6 fm, sand and mud bottom, in egg mass (B, Br, C, D, Du, P).
- 866 *Mangelia subdiaphana* CARPENTER, 1864. Rare (11), 6 fm, sand and mud bottom, in aborted egg mass (C, Du).
- 867 *Mangelia antiochroa* PILSBRY & LOWE, 1932. Common in sea star stomachs (B, D, G).
- 868 *Mangelia antipyrgus* PILSBRY & LOWE, 1932. Common (11), 6 fm, sand and mud bottom, in egg mass (C, Du, P).

- 869 *Mangelia cymatias* PILSBRY & LOWE, 1932. Uncommon (9, 11), 6 - 15 fm, sand and mud bottom, in sea star stomachs and in egg mass (B, Br, D).  
*Mangelia roperi* DALL, 1919. Uncommon (1, 11), 5 - 6 fm, sand and mud bottom, in sea star stomachs and entangled in egg mass (B, C, D, Du).
- 875 *Clathurella rigida* (HINDS, 1843). Rare (2), 6 - 7 fm, sand bottom, in sea star stomach (B).  
*Clathurella trichoides* (DALL, 1919). Rare (15), 16 fm, sand and clay bottom (B).
- 881 *Clathurella acapulcana* (PILSBRY & LOWE, 1932). Uncommon (10), 14 fm, mud bottom, in sea star stomachs (Du, G, P).
- 883 *Clathurella adria* (DALL, 1919). Uncommon (11), 6 fm, sand and mud bottom, in aborted egg mass (B, D, Du, P).
- 909 *Pleuroliria artia* BERRY, 1957. Uncommon (8), 18 fm, sand bottom, dead (G).
- 910 *Pleuroliria nobilis* (HINDS, 1843). Rare (13, 15), 11 - 16 fm, sand and clay bottom, in sponges and in *Pteria sterna* clumps (Du, G).
- 911a *Pleuroliria oxytropis albicarinata* (SOWERBY, 1870). Uncommon (7, 13), 11 fm, sand bottom, in sponges (Br, P).
- 913 *Pleuroliria picta* (REEVE, 1843, ex BECK MS). Uncommon (13), 11 fm, sand bottom, in sponges (Du, P).
- 926 *Conus perplexus* SOWERBY, 1857. Rare (8), 18 fm, sand bottom, juveniles (C).
- 928 *Conus tornatus* SOWERBY, 1833, ex BRODERIP MS. Uncommon (9), 11 fm, sand bottom (Du).  
*Conus poormani* BERRY, 1968. Rare (13), 11 fm, sand bottom (Br).
- 956 *Terebra armillata* HINDS, 1844. Juveniles common (11, 14), 6 - 21 fm, sand, mud, and clay bottom; in sea star stomachs and in aborted egg mass (B, Br, C, D, Du).
- 963 *Terebra glauca* HINDS, 1844. Common (6, 11), 6 - 12 fm, sand and mud bottom, juveniles in sea star stomachs and in egg mass (B, Br, C, D, Du, G).
- 966 *Terebra ira* PILSBRY & LOWE, 1932. Uncommon (11), 6 fm, sand and mud bottom, juveniles in aborted egg mass (B, Br, C, D, Du).
- 980 *Terebra variegata* GRAY, 1834. Uncommon (4, 5), 5 - 10 fm, sand and mud bottom, juveniles in sea star stomachs (G).  
*Terebra dushanae* CAMPBELL, 1964. Rare (11), 6 fm, sand and mud bottom, dead in aborted egg mass (G).
- 992 *Acteocina angustior* BAKER & HANNA, 1927. Common (2, 4, 8, 9, 14, 15), 5 - 18 fm, sand and clay bottom, in sea star stomachs and in washings from *Pteria sterna* (B, Br, C, D, Du).
- 994 *Acteocina inculta* (GOULD & CARPENTER, 1857). Uncommon (11), 6 fm, sand and mud bottom, in aborted egg mass (G).  
*Cylichna defuncta* BAKER & HANNA, 1927. Uncommon (1), 5 fm, sand bottom, in sea star stomachs (C, Du).
- 997 *Cylichna fantasma* (BAKER & HANNA, 1927). Rare (11), 6 fm, sand and mud bottom, in aborted egg mass (C, Du).  
*Cylichnella* sp. Rare (11), 6 fm, sand and mud bottom, in aborted egg mass (G).
- 1000 *Pyramidella adamsi* CARPENTER, 1864. Rare, in sea star stomachs (G).
- 1003 *Pyramidella mazatlanica* DALL & BARTSCH, 1909. Uncommon (10), mud bottom, in sea star stomachs (D).  
*Odostomia clathratula* C. B. ADAMS, 1852. Rare (11), 6 fm, sand and mud bottom, in egg mass (P).
- \* *Odostomia corintoensis* HERTLEIN & STRONG, 1951. Uncommon (6), sand bottom, in sea star stomach; Corinto, Nicaragua (Du).
- \* *Turbonilla academica* STRONG & HERTLEIN, 1939. Rare (11), 6 fm, sand and mud bottom, in egg mass; Bahía Honda, Panama (G).  
*Turbonilla amortajadensis* BAKER, HANNA & STRONG, 1928. Rare (11), 6 fm, sand and mud bottom, in egg mass (Du).  
*Turbonilla azteca* BAKER, HANNA & STRONG, 1928. Uncommon (11), 6 fm, sand and mud bottom, in egg mass (Du).  
*Turbonilla contrerasiana* HERTLEIN & STRONG, 1951. Rare (11), 6 fm, sand and mud bottom, in egg mass (Du).  
*Turbonilla gonzagensis* BAKER, HANNA & STRONG, 1928. Rare (11), 6 fm, sand and mud bottom, in egg mass (Du).  
*Turbonilla prolongata* CARPENTER, 1857. Uncommon (10, 11), 6 - 14 fm, mud and sand bottom, in sea star stomachs and in aborted egg mass (B, C, D, P).  
*Nembrotha eliora* MARCUS, 1967. Uncommon (14), 21 fm, sand and clay bottom with clumps of *Pteria sterna* (C).  
*Coryphella cynara* MARCUS, 1967. Uncommon (14), 21 fm, sand and clay bottom with clumps of *Pteria sterna* (C).  
*Flabellinopsis iodinea* (COOPER, 1862). Uncommon (8, 9, 14, 15), 15 - 21 fm, sand and clay bottom with clumps of *Pteria sterna* (C).  
*Spurilla chromosoma* COCKERELL & ELIOT, 1905. Uncommon (8, 9, 14, 15), sand and clay bottom, on *Pteria sterna* (C).

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