# PRELIMINARY CHECKLIST
# OF THE
# GASTROPODS OF GUAM

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## INTRODUCTION

This report is a listing of the gastropods found around the island of Guam. Many of these may be found in other islands of the Marianas, but it is not the intent of the author to identify this listing with any area other than Guam. The names are listed in alphabetical order by species, since their generic names are often disputed by various authors. Whenever possible the latest official name, author, and date has been used. Synonyms are shown for many of them. However, the list of synonyms should not be considered as complete. Parenthesis for authors names has been omitted for the synonyms.

The listing was compiled from three basic sources--published text material, as per the bibliography; from lists of shells in private collections; and from conversations with knowledgeable conchologists in the area. Particular mention should be made of the assistance given by the late Mr. B. Compton and Mr. H. Ward, and by Mr. T. Montgomery, all of whom resided on Guam.

The author of this project is an amateur cochologist who undertook it purely for his own satisfaction and to increase his knowledge regarding the gastropods of Guam. It is also likely that errors may be found in those listed. The nearly 950 species listed should be a starting point from which our entire knowledge of the gastropods of Guam can advance.

Finally, special thanks are extended to the Marine Laboratory of the University of Guam for their assistance in preparing this listing and to the Sea Grant Project which helped it through its publication.

Tamuning, Guam

Capt. Alexander Roth, Jr.

## ALPHABETICAL INDEX TO FAMILIES OF GASTROPODS FOUND ON GUAM



Names valid locally are shown on the left in the body of this paper: synonyms are indented. In the index the locally valid name is shown with an asterisk.

## TAXONOMIC INDEX OF FAMILIES FOUND ON GUAM

Phylum Mollusca
Class Gastropoda

Subclass Prosobranchia - Streptoneura

Order Archeogastropoda
Superfamily Pleurotomariacea
Family Haliotidae
Superfamily Fissurellacea
Family Fissurellidae
Superfamily Patellacea
Family Acmeadae
Patellidae
Superfamily Trochacea
Family Trochidae
Stomatellidae
Turbinidae
Angariidae
Cyclostrematidae (Liotiidae)
Superfamily Neritacea
Family Neritopsidae
Neritidae
Phenacolepadidae

Order Mesogastropoda
Suborder Taenioglossa
Superfamily Littoriniacea
Family Lacunidae
Littorinidae
Superfamily Rissoacea
Family Truncatellidae
Superfamily Cerithiacea
Family Vermetidae
Thiaridae
Planaxidae
Modulidae
Potamididae
Cerithiidae

Suborder Aglossa (Eulimacea only)
Superfamily Eulimacea
Family Eulimidae

Superfamily Strombacea
Family Strombidae
Superfamily Hipponicacea
Family Vanikoridae (Meriidae)
Hipponicidae
Superfamily Calyptraeacea
Family Calyptraeidae
Xenophoridae

Superfamily Cypraeacea
Family Cypraeidae
Ovulidae
Triviidae
Superfamily Naticacea
Family Naticidae
Superfamily Tonnacea
Family Cassidae
Tonnidae
Cymatiidae
Bursidae
Colubraridae

Order Neogastropoda
Suborder Rachiglossa
Superfamily Muricacea
Family Muricidae
Magilidae (Rapidae, Coralliophilidae)
Superfamily Buccinacea
Family Columbellidae (Pyrenidae)
Buccinidae
Nassariidae
Fasciolariidae
Superfamily Volutacea
Family Olividae
Vasidae
Harpidae
Mitridae
Marginellidae

Suborder Toxoglossa
Superfamily Conacea
Family Turridae
Conidae
Terebridae

Order Heterogastropoda
Suborder Ptenoglossa
Superfamily Architectonicacea
Family Architectonicidae
Superfamily Epitonacea
Family Epitoniidae
Janthinidae
Superfamily Triphoracea
Triphoridae

Subclass Opisthobranchia - Euthyneura

Order Entomotaeniata
Superfamily Pyramidellacea
Family Pyramidellidae

Order Cephalaspidea
Superfamily Acteonacea
Family Acteonidae
Hydatinidae

| | |
|---|---|
| Superfamily | Philinacea |
| Family | Scaphandridae |
| | Aglajidae |
| | Gastropteridae |
| | Runcinidae |
| Superfamily | Bullacea |
| | Bullidae |
| | Atyidae |
| | Smaragdinellidae |
| Order | Sacoglossa |
| Superfamily | Oxynoacea |
| Family | Oxynoidae |
| Superfamily | Elysiacea |
| Family | Elysiidae |
| | Caliphyllidae |
| | Stiligeridae |
| Superfamily | Juliacea |
| Family | Juliidae |
| Order | Anaspidea |
| Superfamily | Aplysiacea |
| Family | Aplysiidae |
| Order | Notaspidea |
| Superfamily | Umbraculacea |
| Family | Pleurobranchidae |
| Order | Nudibranchia |
| Superfamily | Doridacea |
| Family | Doridiidae |
| | Hexabranchidae |
| | Dendrodoridiidae |
| | Polyceridae |
| | Goniodoridiidae |
| | Vayssiereidae |
| | Phyllidiidae |
| Superfamily | Aeolidiacea (Dendronoticea) |
| Family | Aracunidae |
| | Bornellidae |
| | Tritoniidae |
| Superfamily | Eolidicea |
| Family | Favorinidae |
| | Glaucidae |
| | Tergipedidae |
| | Cuthonidae |
| Subclass | Pulmonata (Euthyneura) |
| Order | Basommatophora |
| Superfamily | Siphonariacea |
| Family | Siphonariidae |
| Superfamily | Ellobiacea |
| Family | Ellobiidae |

| | |
|---|---|
| Superfamily | Lymnaecea |
| Family | Lymnaeidae |
| Superfamily | Ancylacea |
| | Planorbidae |
| Order | Stylommatophora |
| Superfamily | Achatinellacea |
| Family | Partulidae |
| Superfamily | Achatinacea |
| | Achatinidae |
| | Subulinidae |
| Superfamily | Oleacinacea |
| Family | Oleacinidae |
| Superfamily | Streptaxacea |
| Family | Streptaxidae |

## ABBREVIATIONS

| | | | |
|---|---|---|---|
| A. & L. | Adams & Leloup | Hum. | Humphrey |
| Ad. & Rve. | Adams & Reeve | Ire. | Iredale |
| Al. & Han. | Alder & Hancock | Kel. | Kelaart |
| Auch. | Auchincloss | L. | Linnaeus |
| Bart. | Bartsch | Lam. | Lamarck |
| Blain. | Blainville | LeG. | Le Guillou |
| Brod. | Broderip | Less. | Lesson |
| Bros. & Sow. | Broderip & Sowerby | Light. | Lightfoot |
| Brug. | Bruguiere | Mart. | Martyn |
| Car. & Hoff | Carlson & Hoff | Met. | Metcalfe |
| Carp. | Carpenter | Meusch. | Meuschen |
| Chem. | Chemnitz | Phil. | Philippi |
| Col. | Collingwood | Pil. & Van. | Pilsbry & Vanetta |
| Cuv. | Cuvier | O. & G. | Quoy & Gaimard |
| Dautz. | Dautzenberg | R. & A. | Rehder & Abbott |
| Dill. | Dillwyn | Rod. | Roeding |
| D'Orb. | D'Orbigny | Rve. | Reeve |
| Ducl. | Duclos | Rec. | Recluz |
| Esch. | Eschscholtz | Rup. & Leuc. | Ruppell & Leuckart |
| Gar. | Garrett | Sch. & Sch. | Schilder & Schilder |
| Gmel. | Gmelin | Soul. | Souleyet |
| Grif. & Pidg. | Griffith & Pidgeon | Swain. | Swainson |
| Helb. | Helbling | Tok. | Tokioka |
| H. & J. | Hombron & Jaquinot | | |

HALIOTIDAE - The ormers or abalones are found in warm and tropical waters, with most of the species preferring the temperate waters. They are flat, with a fully depressed spire, marginal respiratory holes, and the columella flattened to form a thickened rim. There is no operculum. They are herbivorous and attach themselves to the underside of coral rocks in the intertidal reef zone with their very powerful foot.

*Haliotis asinina* Linnaeus, 1758
*Haliotis jacnensis* (Reeve, 1844)
*Haliotis ovina* Gmelin, 1791
    *H. latilabris* Phil., 1848
*Haliotis pulcherrima* Gmelin, 1791

FISSURELLIDAE - Although superficially resembling the Acmaeidae and Patellidae, the key-hole limpets are members of a different superfamily, the Fissurellacea. They are characterized by a slit or opening on the front margin of the shell, or a round, ovate, or key-hole shaped opening of the apex. Diodora mus Rve. has an opening on the apex. The interior bears a horseshoe shaped muscle scar. They are herbivorous and inhabit the underside of coral rocks in the intertidal zone.

*Diodora mus* (Reeve, 1850)

ACMAEIDAE - These limpets are very similar to the Patellidae. One author distinguishes the shell of Acmaeidae by saying they have a distinct, dark colored peripheral zone around the outer margin of the inner surface and are never iridescent inside. They live at the shore, often on limestone, but never on live coral.

*Collisella heroldi* Dunker, 1861
*Acmea saccharina*, Linnaeus, 1758
    *A. stellaris* Q. & G., 1834
    *A. paopsis* Ire., 1929
    *A. saccharinoides* Habe & Kosuge, 1966

PATELLIDAE - These limpets are spread worldwide from the Arctic to the Antarctic Circles and around the world. However, strangely no patellids are found on the East or West Coasts of North America, the Caribbean, or most of South America. They are normally found on rocks and along rocky coasts. The inside of the shell is often coated with a silver-white layer, whereas the Acmaeidae are not. (This inner layer is iridescent or lustrous, whereas in the Acmaeidae it never is.)

*Patella (Scutellastra) flexuosa flexuosa* Quoy & Gaimard, 1834
    *P. stellaeformis* Rve., 1842
    *P. cretacea* Rve., 1854
    *P. paumotensis* Gould, 1846
    *P. tuamutuensis* Dautz. & Bouge., 1933
    *P. inquisitor* Ire., 1929
    *P. arrecta* Ire., 1929
    *P. intraurea* Ire., 1929
*Cellana dorsuosa stearnsi* Pilsbry, 1891

TROCHIDAE - The topshells are found worldwide in temperate and tropical waters. They have a circular, corneous operculum, as compared to the Turbinidae's calcareous one. The base is usually flat and circular and the aperture circular. The interior is nacre lined. The animals are microphagous eaters, subsisting on protozoans and detritus.

*Gibbula affinis* Garrett,
*Mesoclanculus ater* Pilsbry, 1901
    *Clanculus microdon ater* Hirase, 1934
    *Clanculus (Mesoclanculus) microdon ater* Habe, 1964
*Euchelus atratus* (Gmelin, 1791)
*Monilea belcheri* (Philippi, 1849)
*Monodonta canalifera* Lamarck, 1816
*Trochus conus* Gmelin, 1791
*Clanculus denticulus* Gray,
*Tectus fenestratus* (Gmelin, 1791)
*Clanculus gemmulifera* Pilsbry,
*Umbonium gigantium* (Lesson, 1831)
    *Rotella gigantea* Kien., 1838
    *U. giganteus* Phil., 1853
    *U. giganteum* Pils., 1889
    *U. ojiensis* Yokoyama, 1927
    *U. giganteum* Kira, 1962
*Ethalia guamensis* Quoy & Gaimard, 1833
*Trochus histrio histrio* Reeve, 1848
*Trochus incrassatus* (Lamarck, 1810)
*Cantharidus infuscatus* (Gould, 1861)
*Monodonta labio* (Linnaeus, 1758)
    *M. novaezeelandiae* Rod., 1798
    *M. confusa* Tap. - Can., 1876
    *M. immanis* Fischer, 1880
*Trochus maculatus* Linnaeus, 1758
    *T. vernus* Gmel., 1791
    *T. tentorium* Gmel., 1791
    *T. verrucosus* Gmel., 1791
    *T. grandinatus* Rod., 1798
    *T. granosus* Lam., 1822
*Trochus niloticus maximus* (Philippi, 1844)
*Monodonta neritoides* (Philippi, 1847)
*Trochus niloticus* Linnaeus, 1767
    *T. flammeus* Rod., 1798
*Trochus ochroleucus* Gmelin, 1791
*Chlorostoma paradoxum* (Born, 1780)
*Monilea philippeana* Dunker, 1871
*Tectus pyramis* (Born, 1780)
    *T. obeliscus* Gmel., 1791
    *T. acutus* Lam., 1822
    *T. tabidus* Rve., 1861
*Trochus sandwichensis* Souleyet, 1852
*Cantharidus serpentinus* Quoy,
*Trochus stellatus* Gmelin, 1791
*Diloma suavis* Philippi, 1848
*Trochus tubiferus* Kiener,
*Talopena vernicosa,* Gould,
*Umbonium vestiarium,* (Linnaeus, 1758)

STOMATELLIDAE - These flat shells are relatively small with few whorls; a depressed spire; a large open aperture; and a non-umbilicated base. They resemble the Haliotidae. They are coral-reef dwellers.

*Stomatella auricula* (Lamarck, 1816)
*Stomatella rufescens* (Gray, 1847)

TURBINIDAE - The turban shells are medium to large in size, solid, and turbinate. The columella is smooth and the aperture lined with nacre. The operculum is either circular or oval; the attachment side is flat, although the exterior may be spherical, smooth, pustulated, or striated, and it is calcareous. Some members of the genus Astraea are flattened and have spines, while those of the genus Guildfordia have long spines. The turbans are inhabitants of the reefs and are found under coral rocks often exposed in the intertidal zone.

*Turbo (Marmarostoma) argyrostomus* Linnaeus, 1758
    *T. margaritaceus* L., 1758
    *T. princeps* Phil., 1846
    *T. carduus* Fscher, 1873
*Turbo (Marmarostoma) brunneus* (Roeding, 1798)
    *T. intercostalis* Menke, 1829
    *T. squamosa* Rod., 1798
    *T. disjunctus* Anton., 1839
    *T. ticaonicus* Rve., 1842
    *T. concinnus* Phil., 1846
    *T. elegans* Phil., 1846
*Turbo (Marmarostoma) chrysostomus,* Linnaeus, 1758
*Turbo (Batillus) cornutus,* Lightfoot, 1786
    *T. cornutus* Rve., 1848
    *T. japonicus* Rve., 1848
    *T. cornutus* Pils., 1888
    *Batillus cornutus* Kira, 1962
*Astraea haematraga* Menke, 1829
    *Calcar haematragus* Fischer, 1849
    *A. haematragum* Pils., 1888
    *A. haematragum* Kira, 1962
*Astraea heimburgi* Dunker,
*Turbo imperialis* Gmelin, 1791
*Galeostraea (Harisazaea) modesta* Reeve, 1843
*Phasianella modesta* Gould, 1861
    *P. modesta gouldii* Pils., 1895
*Turbo niloticus* Linnaeus, 1758
*Turbo pentholatus* Linnaeus, 1758
    *T. variabilis* Rve., 1842
*Turbo reevei* Philippi, 1847
*Astralium rhodostoma* Lamarck
*Turbo (Marmarostoma) setosus* Gmelin, 1791
*Phasianella variabilis* Reeve, 1843

ANGARIIDAE - Members of this family are sometimes listed as Genus Angaria Roeding of the family Trochidae. The shells are moderate in size, solid, with a depressed (almost flat) spire, and with branching spines on each whorl. The aperture is round, and a wide umbilicus is seen. The operculum is thin, round, and corneous. It lives on the coral reefs.

*Angaria delphinus* (Linnaeus, 1758)
*A. nodulosus* Gmel., 1791
*A. spinosa* Montfort, 1810
*A. laciniata* Lam., 1819
*A. ungulata* Schum., 1817
*A. aculeata* Rve., 1842
*A. formosa* Rve., 1842
*A. incisa* Rve., 1842
*A. euracantha* A. Adams, 1850
*A. venusta* Phil., 1853
*A. martinii* A. Adams, 1854

CYCLOSTREMATIDAE (LIOTIIDAE) - These small white shells have a depressed spire and are prominently sculptured with axial ribs and spiral chords. The umbilicus is open and the aperture round. The corneous operculum is round, concave in the center, and multi-spiral with small calcareous granules. The shells prefer fine sandy bottoms from 2 to 10 fathoms deep.

*Liotinaria solidula* (Gould, 1859)

NERITOPSIDAE - Only one species of this family is found in the tropical Pacific. It has a globular body, spire higher than most of the nerites, a large final whorl, and an edentulous concave columella. The aperture is almost round.

*Neritopsis radula* (Linnaeus, 1758)

NERITIDAE - The nerites are among the oldest of families, and the only one of the Order Archeogastropoda which has genera living in fresh water with some living in rivers and mangrove swamps of brackish water. The marine specimen are globular, with low or depressed spires; a flattened base with a calloused columellar pad that may be either smooth, granulated, or plicate, denticulate on the margin, and with an aperture that may also be marginally denticulate. The operculum is ovate and calcareous, smooth or granulose on the outside, and equipped with an apophysis, or hooklike projection, on the inside, that hooks under the columella when closed. On Guam they are found under rocks or in crevices, normally at the high water level of the intertidal region.

*Theliostyla albicilla* (Linnaeus, 1758)
*T. imperfecta* Rod., 1798
*T. venusta* Dunker, 1844
*T. ustulata* Sow., 1883
*Nerita amoena* Gould, 1859
*Septaria (Navicella) borbonica* Bory
*Nerita (Ritena) chameleon* Linnaeus, 1758
*N. bizonalis* Lam., 1816

NERITIDAE - continued

*Neritina communis* (Quoy & Gaimard, 1832)
*Neritina cornea* (Linnaeus, 1758)
*Nerita (Ritena) costata* Gmelin, 1791
    *N. grossa* Born, 1780
    *N. scabricosta* De Lessert, 1841
*Nerita insculpta* Recluz, 1842
*Nerita (Septaria) janella* Recluz, 1841
*Heminerita japonica* (Dunker, 1860)
    *N. pica* Gould, 1859
    *Puperita japonica* Kira, 1962
*Nerita helicinoides laevilabris* Pilsbry
*Septaria laperouse* Recluz, 1841
*Neritina oualaniensis* Lesson, 1831
*Nerita (Theliostyla) picea* (Recluz, 1842)
*Nerita plexa* Dillwyn, 1817
*Nerita (Ritena) plicata* Linnaeus, 1758
    *N. lactaria* L., 1771
    *N. eburnea* Rod., 1798
    *N. otaitensis* Lesson, 1831
    *N. versicolor* Q. & G., 1834
*Nerita (Theliostyla) polita* Linnaeus, 1758
    *N. bifasciata* Gmel., 1791
    *N. litterata* Gmel., 1791
    *N. doreyana* Q. & G., 1834
    *N. vitiensis* H. & J., 1854
*Neritina pulligera* Linnaeus, 1758
*Clithon sowerbianus* Recluz, 1842
*Nerita (Theliostyla) squamulata* (LeGuillou, 1841)
    *N. modesta* H. & J., 1854
*Nerita turrita* Dillwyn, 1786
*Neritina turtani* (Recluz, 1842)
*Neritina variegata* Lesson
*Provittoida ziczac* (Lamarck, 1816)

PHENACOLEPATIDAE - These cap-shaped shells have a backward pointing apex and have an anteriorly pointing horseshoe-shaped muscle scar. The interior is a porcelaneous white.

*Phenacolepas crenulata* (Broderip, 1847)

LITTORINIDAE - The Littorinidae are a worldwide family, ranging from shallow water below the intertidal zone to areas high above the sea where they are only wet occasionally by spray. Certain species can survive long periods without immersion in sea water. Although members of the family vary from smooth to elaborately sculpted shells, the Littorinidae generally have thick-walled turbinate shells, are usually nonumbilicate, and have a paucispiral corneous opercula. They differ from Planaxidae in that the former has a simple syphon, and the columella of the latter terminates in a short pinched syphon. The Littorinidae differ also from the Lacunidae as the latter always have an umbilical chink and more conical shells. The nerites have calcareous operculum, as compared to the Littorinidae's chitinous one. Finally, the Littorinidae do not have a nacreous interior. They are herbivores.

*Littorina coccinea* (Gmelin, 1791)
*Limax coccinea* Martyn, 1788 (n.d.)
*Helix coccinea* Gmel., 1791
*L. obesa* Sow., 1832
*L. limax* Gray, 1839
*Tectarius grandinatus* (Gmelin, 1791)
*Trochus grandinatus* Gmel., 1791
*Monodonta coronaria* Lam., 1816
*Littorina pintado pintado* (Wood, 1828)
*Turbo pintado* Wood, 1828
*L. tenebrata* Jay, 1839
*L. ambigua* Phil., 1848
*L. serialis* Eydoux & Soul., 1852
*L. pindata* Phil., 1852
*L. ambigua* Rve., 1882
*Nodilittorina pyramidalis pyramidalis* (Quoy & Gaimard, 1833)
*Trochus nodulosus* Gmel., 1791
*Turbo trochiformis* Dill., 1817
*Littorina pyramidalis* Q. & G. 1833
*Littorina trochoides* Gray, 1839
*Litorina vilis* Phil., 1846
*Littorina malaccana* Phil., 1847
*Litorina cecilei* Phil., 1851
*Littorina monilifera* Eydoux & Soul., 1852
*Littorina capsula multistriata* Tokioka, 1950
*Littorina scabra* (Linnaeus, 1758)
*Buccinum foliorum* Rmph., 1705
*Helix scabra* L., 1758
*Buccinum lineatum* Gmel., 1791
*L. novaehiberniae* Less., 1831
*L. luteola* Q. & G., 1832
*L. intermedia* Phil., 1846
*L. intermedia punctata* Phil., 1846
*L. intermedia articulata* Phil., 1846
*L. intermedia strigata* Phil., 1846
*L. pallescens* Phil., 1846
*L. sieboldii* Phil., 1846
*L. cingulata* Phil., 1846
*L. sulcosa* Phil., 1846
*L. scabra flammulata* Phil., 1847
*Litorina scabra articulata* Phil., 1847
*Litorina scabra punctata* Phil., 1847
*Litorina scabra suturalis* Phil., 1847
*Litorina scabra lutea* Phil., 1847
*Litorina scabra rubra* Phil., 1847
*L. scabra ventricosa* Phil., 1847
*Litorina flammea* Phil., 1847
*Litorina sinensis* Phil., 1847
*L. albicans* Metcalfe, 1852
*L. philippiana* Rve., 1857
*L. arboricola* Rve., 1857
*L. newcombi* Rve., 1857
*L. fortunei* Rve., 1857
*L. strigata* Lischke, 1871

LITTORINIDAE - continued

*Littorina scabra* (Linnaeus, 1758) - continued
*Melaraphe blandfordi* Dunk., 1871
*Litorina scabra concolor* Weinkauff, 1878
*L. newkombi* Weinkauff, 1878
*L. scabra tenuis* Nevill, 1885
*L. pallescens erronea* Nevill, 1885
*L. filosa subcingulata* Nevill, 1885
*L. conica delicatula* Nevill, 1885
*Leptopoma ardovinianum* Heude, 1885
*L. philippina* Martens, 1900
*L. (Melaraphe) scabra rhodea* Biggs, 1958
*Echininus cumingi spinulosus* (Philippi, 1847)
*Litorina spinulosa* Phil., 1847
*Echinella cumingi* Pils., 1895
*Echinella cumingi luchuana* Pils., 1901
*Littorina undulata* Gray, 1839
*L. tenuis* Phil., 1846
*L. columna* Phil., 1847
*L. acuminata* Phil., 1849
*L. scabra concolor* Weinkauff, 1878
*L. undulata contracta* Nevill, 1885
*L. undulata sulcatula* Nevill, 1885
*L. conica subintermedia* Nevill, 1885

TRUNCATELLIDAE - The shells are small and cylindrical in the adult form; the apex becomes broken off (decollate) also in the adult. The operculum is corneous and multispiral, and the aperture small. Members live in the seaweed, rocks, and gravel marking the high water level of the intertidal zone.

*Truncatella amamiensis* Kuroda & Habe
*Truncatella guerinii* A. & J. Villa, 1841
*Truncatella valida* Pfeiffer

VERMETIDAE - These worm-like shells are often confused with annelid worm shells, but the distinction is clear: the gastropod shell is three layered and glossy inside, whereas the annelid is two layered and dull inside. The shell start with regular whorls, but after it attaches itself to the substrate as a young adult, it coils at a right angle to the nuclear whorls, and gradually becomes looser and more irregular in its coiling. It is usually found attached to rocks in gravelly or rock bottoms. Guam's shells have no operculum.

*Serpulorbis xenophorus* Habe

THIARIDAE - These are fresh water shells with an elevated spire of 7-9 whorls, often broken or eroded at the tip. The aperture is ovate and closed with a yellowish operculum. It has a greenish brown periostratum. They live in streams and lakes.

*Thiara granifera* Lamarck
*Thiara scabra* Muller
*Melanoides tuberculatus* Muller

PLANAXIDAE - These shells somewhat resemble the Littorinidae and live in the same habitat under rocks, in gravel or coral rubble near the high water mark. They can be distinguished from the Littorinidae by the notch below the truncated columella.

*Planaxis (Quoyia) decollatus* (Quoy & Gaimard, 1832)
    *Quoyia michaui* Crosse & Fischer, 1863
*Angiola inepta* (Gould)
*Planaxis lineolatus* Born, 1778
*Planaxis sulcatus* (Born, 1780)
    *P. pyramidalis* Gmel., 1791
    *P. undulata* Lam., 1822
    *P. buccinoides* Deshayes, 1828
*Planaxis virgatus* Smith

MODULIDAE - These shells only superficially resemble the Cyclostrematidae, being small, solid, and globose. However, the aperture is large and grooved with a single tooth at the inner side. It has a thin, corneous operculum. Guam's M. tectum is found in weedy-sand areas.

*Modulus tectum* (Gmelin, 1791)
    *M. candidus* Petit, 1853

POTAMIDIDAE - Members of this family closely resemble the ceriths, although they are all very dull colored, in browns and horn. The shells are thick, and elongated conically. The labial lip also sweeps in an arc to join the anterior canal which does not turn up as in the ceriths. The operculum is thin and horny. The Potamididae prefer muddy areas near the high water level; mangrove swamps; and often live out of the water, being wetted only by high water or sprays.

*Cerithidea cingulata* (Gmelin, 1791)
    *Murex cingulatus* Gmel., 1791
    *Cerithidea fluviatile* Potiez & Michaud, 1838
*Cerithidea djadjariensis* (Martin, 1899)
*Terebralia sulcata* (Born, 1778)
    *T. fuscus* Gmel., 1791
    *T. moluccanus* Gmel., 1791
    *T. mangos* Rod., 1798
    *T. semistriatum* Moerch, 1852
    *T. semitrisulcatus* Tryon, 1887

CERITHIIDAE - The horn shells vary from small to large size, and vary enormously even within a genus. They are characterized by thick and strong, elongate shells with many whorls. The siphonal canal is usually short and recurved, but occasionally may be moderately long; the outer lip extends to form a hook-like process passing in front of the siphonal canal. The anal canal is generally distinct, and the columella is either smooth, or with one fold. Ceriths have a multispiral, corneous, operculum, with an eccentrically located nucleus. The ceriths are scavengers living in weed or on sand, or among clean coral debris, in shallow, intertidal regions; some genera, such as Clypeomorus, live under rocks on a hard, sand covered substrate.

CERITHIIDAE - continued

*Rhinoclavis aluco* (Linnaeus, 1758)
*Cerithium (Semivertagus) alveolus* Hombron & Jaquinot, 1854
*C. piperitum* Sow., 1855
*Rhinoclavis articulatus* (Adams & Reeve, 1850)
*Rhinoclavis aspera* (Linnaeus, 1758)
*R. granulatus* L., 1758
*R. lineatum* Lam., 1816
*Cerithium bavayi* Vignal, 1902
*C. atromarginatum* Dautz. & Bouge, 1933
*C. minor* Couturier, 1907
*Cerithium bifasciata* Sow., 1855
*Cerithium boeticum* Pease
*Contumax citrinum* Sow., 1855
*Cerithium columna* Sow., 1855
*C. echinatum* Kien., 1841
*C. fusiforme* Sow., 1855
*C. proditum* Bayle, 1880
*C. menkei* Desh., 1863
*Cerithium echinatum* (Lamarck, 1822)
*Rhinoclavis fasciatus* (Bruguiere, 1792)
*R. carminatus* Rod., 1798
*R. bandatum* Perry, 1811
*R. martinianum* Pfeiffer, 1840
*R. procerum* Kein., 1841
*Cerithium kobelti* Dunker, 1877
*Bittium lacteum* (Philippi, 1836)
*Cerithium lineatum* Linnaeus, 1758
*Clypeomorus moniliferus* (Keiner, 1841)
*C. morus* Lam., 1822
*C. variegatum* Q. & G., 1834
*C. concisum* H. & J., 1854
*C. penthusarus* Ire., 1929
*C. sejunctum* Ire., 1929
*Cerithium morus* Bruguiere 1792
*Cerithium munitoides* Habe
*Cerithium nassoides* Sowerby, 1355
*C. maculosum* Mighels, 1845
*Cerithium (Semivertagus) nesioticum* Pilsbry & Vanetta, 1906
*C. lacteum* Kien., 1841
*C. pusillum* Jay, 1852
*C. collacteum* Ire., 1929
*Cerithium nodulosum* Bruguiere, 1792
*C. curvirostra* Perry, 1811
*C. tuberosus* Dill., 1817
*C. polygonum* Sow., 1855
*C. opportunum* Bayle, 1880
*C. decollata* Hedley, 1899
*Clypeomorus patulum* (Sowerby, 1855)
*Cerithium (Proclava) pfefferi* Dunker, 1882
*C. turritum* Sow., 1855
*Rhinoclavis Pharos* (Hinds, 1844)

CERITHIIDAE - continued

*Conocerithium pupa* (Sowerby, 1855)
*Cerithium planum* Anton, 1839
    *C. invaginatum* Gould, 1849
    *C. planum* Phil., 1849
*Clypeomorus purpurascens* (Sowerby, 1855)
*Cerithium (Ischnocerithium) rostratum* (Sowerby, 1855)
*Cerithium ravidum* Philippi, 1849
*Cerithium salebrosum* Sowerby, 1855
*Rhinoclavis sinensis* (Gmelin, 1791)
    *R. obeliscus* Brug., 1792
    *R. muricatus* Rod., 1798
    *R. cedonulli* Sow., 1855
*Cerithium tenellum* Sowerby, 1855
*Clypeomorus traillii* (Sowerby, 1855)
*Clypeomorus tuberculatus* (Linnaeus, 1758)
    *Cerithium janelli* H. & J., 1854
*Rhinoclavis vertagus* (Linnaeus, 1767)
*Bittium zebrum* (Keiner, 1841)
    *Cerithium aspersum* Desh., 1863
    *B. crossei* Desh., 1863
    *B. maillardi* Crosse, 1863
    *B. undulata* Dautz. & Bouge, 1933
*Clypeomorus zonatus* (Woode, 1828)
    *C. lemniscatum* Q. & G., 1834
    *C. vittatum* Sow., 1855
    *C. uranus* Bayle, 1880
    *C. philippinense* Cossman, 1906
    *C. probleema* Tre., 1929

EULIMIDAE - these are small, smooth, shining, ovate, slender shells with a sharp apex. The aperture is ovate, without a canal, and the umbilicus is usually closed. The operculum is thin, horny, and paucispiral. These animals are parasitic on molluscs and echinoderms, and have no radula.

*Balcis cumingii* A. Adams
*Eulima major* (Sowerby, 1834)
*Balcis thaanumi* Pilsbry
*Balcis tortusa* (Adams & Reeve, 1850)

STROMBIDAE - The family Strombidae is worldwide in scope, in tropical waters, with the genus Lambis limited to the tropical Indo-Pacific region. In the family are the following genera: Strombus, Lambis, Terebellum, Tibia, and Rimella. The Strombus are usually shallow water inhabitants from the low tide line to about 30 feet depth, with two species being found at depth to 66 fathoms. Strombus is normally only found in waters warm enough to support coral reefs. They are herbivorous, with a sickle-shaped corneous operculum located at the elongated posterior end of the foot (in the portion called the metapodium). Normal gastropod locomotion is a gliding motion; however, because of the pointed shape of the operculum, the animal is able to leap and kick its way forwards. The eyes of the members of the Strombidae are apparently keener and more complex than in any of the other gastropods. The

STROMBIDAE - continued - adult Strombus is characterized by a thickened, flaring outer lip, and the so-called "stromboid notch." As said earlier, all the nine species of spider (Lambis) conchs are limited to the Indo-Pacific region. They are active, and prefer algal-rich coral reefs or lagoons. In L. lambis, the males are smaller than the females, and have two small knobs on their shoulders; they also have smaller digital spines. The female digital spines tend to be longer and upward turning.

*Strombus aurisdianae aurisdianae* Linnaeus, 1758
*Lambis stiva* Rod., 1798
*Lambis buris* Rod., 1798
*Lambis lamarki* gray Sowerby, 1842
*S. chrysostomus* Kuroda, 1942
*S. striatogranosus* V. Martens, 1880
*Lambis chiragra chiragra* Linnaeus, 1758
*L. harpago* Rod., 1798
*L. undulata* Rod., 1798
*Pteroceras chiragra* Sow., 1842
*Pterocera kochii* Freyer, 1855
*L. chiragra* (L.) Hirase, 1938
*Pterocera chiragra* (L.) Wenz, 1940
*Lambis chiragra* (Linnaeus) Abbott, 1950
*Lambis crocata crocata* (Link, 1807)
*L. scorpius* Rod., 1798
*Pteroceras crocatus* Link, 1807
*Strombus aculeatus* Perry, 1811
*Pterocera aurantia* Lamarck, 1822
*Strombus lambis* Wood, 1825
*Pteroceras aurantiacum* Sow., 1825
*Pteroceras aurantia* Sow., 1842
*L. crocata* Kuroda, 1941
*Strombus dentatus* Linnaeus, 1758
*S. tridentatus* Gmel., 1791
*Lambis dentata* Rod., 1798
*S. samar* Dill., 1817
*S. samarensis* Rve., 1851
*Strombus erythrinus erythrinus* Dillwyn, 1817
*S. erythrinus* Chem., 1795 (n.d.)
*S. elegans* Sow., 1842
*S. radians* Duc., 1844
*S. ruppelli* Rve., 1850
*Strombidea erythrinus* Jousseaume, 1888
*Canarium dentatum* L. var. *erythrinum* Chem., 1900
*Rostellaria rubicunda* Perry, 1912
*Rostellaria rubicunda* Mathews, 1912
*Rostellaria rubicunda* Ire., 1912
*S. plicatus* Oostingh, 1925
*S. rugosus* Dietrich & Morris, 1953
*Strombus fragilis* (Roeding, 1798)
*S. samar* Dill., 1817
*S. dubius* Swain., 1823
*S. bulbulus* Sow., 1842

*Strombus fragilis* (Roeding, 1798) - continued
*S. bullatus* Sow., (Dodge, 1946)
*S. terebellatus* Abrard, 1946
*Strombus gibberulus gibbosus* (Roeding, 1798)
*Lambis gibbosa* Rod., 1798
*S. gibberulus* Sow., 1842
*S. praegibberulus* Abrard, 1946
*Strombus haemastoma* Sowerby, 1842
*Lambis lambis* Linnaeus, 1758
*L. lambis* Gmel., 1798
*L. lobata* Rod., 1798
*L. lamboides* Rod., 1798
*L. cerea* Rod., 1798
*L. hermaphrodita* Rod., 1798
*L. laciniata* Rod., 1798
*L. maculata* Rod., 1798
*Strombus lambis* Dill., 1817
*Strombus camelus* Gray, 1826
*Pteroceras lambis* Sow., 1842
*Pterocera crocata* Yonge, 1932
*Strombus lentiginosus* Linnaeus, 1758
*Lambis rana* Rod., 1798
*S. rana* Isis, 1834
*Strombus luhuanus* Linnaeus, 1758
*S. luguanus* Herbst, 1788
*Lambis luhuana* Rod., 1798
*S. pusillus* Anton, 1839
*S. luhuanus* Fischer, 1884
*Conomurex luhuanus* Ire., 1931
*Strombus microurceus* (Kira, 1959)
*Canarium microurceum* Kira, 1955 (n.n.)
*Canarium microurceum* Kira, 1959
*Strombus mutabilis* Swainson, 1821
*S. floridus* Lam., 1822
*Strombidea mutabilis* Swain, 1840
*S. epimellus* Duc., 1844
*S. flosculosus* Morch, 1852
*S. flammeus* Link, Issell & Tap.-Can., 1876
*Strombus maculatus* Sowerby, 1842
*S. maculatus* Jay, 1839 (n.n.)
*S. floridus depauperata* Dautz. & Bouge, 1933
*S. maculatus* Nuttall & Ostergaard, 1950
*Strombus pipus* (Roeding, 1798)
*Lambis pipa* Rod., 1798
*S. papilio* Dill., 1817
*S. exustus* Swain, 1822
*S. adustus* Rve., 1851
*Strombus plicatus pulchellus* Rve., 1851
*S. maleculensis* Abrard, 1946
*S. minimus minor* Abrard, 1946

*Lambis chiragra rugosa* (Sowerby, 1842)
*Strombus chiragra* Mawe, 1823
*Pteroceras rugosum* Sow., 1842
*Pterocera rugosa* Rve., 1851
*Pterocera (Harpago) rugosa* Dautz., 1911
*L. (Harpago) chiragra rugosa* Hirase, 1938
*L. rugosus* Platt, 1949
*L. arthritica* Abbott, 1949
*Harpago chiragra* Cotton, 1953
*L. chiragra rugosa* Sakurai, 1959
*Lambis scorpius scorpius* (Linnaeus, 1758)
*Strombus scorpius* L.,1758
*Strombus scorpio* Murray, 1771
*L. chiragra* Rod., 1798
*Pterocera scorpius* Roissy, 1805
*Pterocera scorpius* Fischer, 1807
*Pteroceres scorpius* Montfort, 1810
*Pterocera nodosa* Lam., 1816
*Pterocera scorpio* Lam., 1822
*Pteroceras scorpio* Sow., 1842
*Pterocera scorpio* Kien., 1843
*Pterocera scorpio* Kuster, 1845
*Pterocera scorpio* Rve., 1851
*L. scorpius* Butot, 1955
*Lambis truncata sebae* (Kiener, 1843)
*Pterocera sebae* Kien., 1843
*Pterocera (Heptadactylus) sebae* Morch, 1872
*Pterocera (Heptadactylus) sowerbyi* Morch, 1872
*L. bryonia* Hirase & Pils., 1935
*L. truncata* Hirase, 1938
*L. sebae* Butot, 1955
*L. truncata* Butot, 1955
*L. truncata* Oyama, 1958
*Strombus sinuatus* Humphrey, 1786
*Lambis lobata* Rod., 1798
*Pterocera palmata* Fischer, 1807
*S. laciniatus* Dill., 1817
*S. cristatus* Lam., 1822
*Strombus taurus* Reeve, 1857
*Terebellum terebellum* Linnaeus, 1758
*Conus terebellum* L., 1758
*Bulla terebellum* 1767
*T. punctatum* Chemnitz, 1788 (n.b.)
*Conus terebellum* Gmel., 1791
*T. nebulosum* Rod., 1798
*T. lineatum* Rod., 1798
*T. punctulorum* Rod., 1798
*T. terebellum* L., 1799
*T. terebra* Bosc., 1801
*T. variegatum* Link, 1807
*T. album* Link, 1807
*T. sabulatum* Lam., 1810

STROMBIDAE - continued

*Terebellum terebellum* Linnaeus, 1758 - continued
*T. subulatum* Lam., 1811
*T. lineatum* Perry, 1811
*T. spirale* Perry, 1811
*T. subulatum* Lam., 1848
*T. punctatum* Rve., 1863
*T. punctatum* Chem., 1886
*T. subulatum* Lam., 1910
*T. punctatum* Chem., 1911
*T. terebellum* Cox, 1931
*T. punctatum* Van Der Vlerk, 1931
*T. subulatum* Van Der Vlerk, 1931
*T. punctatum* Van Es, 1931
*T. terebellum* Oostingh, 1935
*T. terebellum delicatum* Kuroda & Kawamoto, 1961
*Strombus terebellatus terebellatus* Sowerby, 1842
*S. dentatus* Kien., 1843
*Strombus mutabilis zebriolatus* Adams & Leloup, 1938

VANIKORIDAE [-MERRIIDAE] - These are white, globose, with a low spire, and large body whorl. They have a large aperture with an open umbilicus. The operculum is oval, thin, and corneous. They live on detritus in weedy sand, clean or muddy, in the intertidal shallow.

*Vanikoro distans* (Recluz, 1844)
*V. imbricata* Pease, 1861
*Vanikoro helicoidea* (LeGuillou, 1842)
*V. semiplicata* Pease, 1860
*Merria ligata* (Recluz, 1844)

HIPPONICIDAE - The hoof-shells are moderately small, saucer shaped, and cap shaped on the obverse side, with a spire situated off-centre and recurved backwards. The inside is smooth with a horseshoe shaped muscle scar opening anteriorly. They are mainly gastropod parasites.

*Hipponix (Sabia) conicus* (Schumacher, 1817)
*Patella australis* Lam., 1919
*Antisabia foliacea* (Quoy & Gaimard, 1834)
*Pilosabia pilosa* Deshayes, 1832

CALYPTRAEIDAE - The cup-and-saucer shells are mostly thin, flatly conical, or low-domed shaped. The shells are characterized by a cup-shaped appendage in the inner side and have no operculum. They are usually white and attach to the bottom of dead coral.

*Cheilea equestris* (Linnaeus, 1758)
*C. dillwyni* Gray, 1952
*C. scutulum* Rve., 1846

CYPRAEIDAE - The cowries vary in size from very small to more than six inches. They are, with few exceptions, smooth, with a porcelaneous finish. There is no operculum, and the periostratum is also absent, because of the enveloping mantle of the animal. The shell is ovate to pyriform with very small anterior and posterior canals, a flat base, and, in the adult, the spire and protoconch are usually absent because of being overlaid with enamel. Both the labial and columellar lips are denticulate. Cowries are found worldwide in temperate to warm seas, with the greater number of species being found in the tropics. Cowries live in a variety of habitats, varying from the calm intertidal lagoon flats, to the wave-pounded outer reef margin, and to 100 or more fathoms in depth. [Burgess, 1970, Cate, 1969].

*Cypraea (Ornamentaria) annulus annulus* Linnaeus, 1758
- *Cypraea annularis* Perry, 1811
- *Cypraea coerulea* Perry, 1811
- *Cypraea noumeensis* Marie, 1869
- *Cypraea camelorum* Rochebrune, 1884
- *Cypraea harmandiana* Rochebrune, 1884
- *Monetaria ornamentaria annulus scutellum* Schilder & Schilder, 1937
- *Monetaria annulus dranga* Iredale, 1939

*Cypraea (Arabica) arabica arabica* Linnaeus, 1758
- *Cypraea arabica* var. *intermedia* Gray, 1824
- *Mauritia (Arabica) arabica asiatica* Schilder & Schilder, 1939
- *Mauritia (Arabica) arabica dilacerata* Sch. & Sch., 1939
- *Mauritia (Arabica) arabica immanis* Sch. & Sch., 1939
- *Mauritia (Arabica) arabica brunnescens* Cate, 1964

*Cypraea argus* (Linnaeus, 1758)
- *Cypraea contrastricta* Perry, 1811
- *Cypraea argus* var. *ventricosa* Gray, 1824
- *Cypraea concatenata* Dautzenberg, 1903

*Cypraea (Palmadusta) asellus* (Linnaeus, 1758)
- *Cypraea bitaeniata* Geret, 1903
- *Cypraea vespacea* Melvill, 1905
- *Adusta asellus latefasciata* Schilder, 1930
- *Evenaria asellus kawakawa* Steadman & Cotton, 1943

*Cypraea aurora* (Schroter, 1789)
- *Cypraea aurantium* Gmelin, 1791
- *Callistocypraea aurantium turanga* Steadman & Cotton, 1943

*Cypraea (Paulonaria) beckii* (Gaskoin, 1836)

*Cypraea (Pustularia) bistrinotata* Schilder & Schilder, 1937
- *Cypraea cicercula* Kiener, 1843
- *Cypraea cicercula* Reeve, 1846
- *Pustularia (Pustularia) bistrinotata* Sch. & Sch., 1937
- *Pustularia (Pustularia) mediocris* Sch. & Sch., 1938
- *Pustularia (Pustularia) sublaevis* Sch. & Sch., 1938
- *Pustularia (Pustularia) keelingensis* Sch. & Sch., 1940

*Cypraea caputserpentis caputserpentis* (Linnaeus, 1758)
*Cypraea reticulum* Gmelin, 1791
*Cypraea caputanguis* Philippi, 1849
*Cypraea caputcolubri* Kenyon, 1898
*Erosaria (Ocellaria) caputophidii* Schilder, 1927
*Cypraea argentata* Dautzenberg & Bouge, 1933
*Erosaria (Ravitrona) caputserpentis mikado* Sch. & Sch., 1938
*Erosaria (Ravitrona) caputserpentis kenyonae* Sch. & Sch., 1938

*Cypraea carneola* Linnaeus, 1758
*C. crassa* Gmelin, 1791
*C. sowerbyi* Anton, 1839
*C. loebbeckeana* Weinkauff, 1881
*C. (Luponia) propinqua* Garrett, 1879
*Ponda carneola thepalea* Iredale, 1939
*Lyncina titan* Sch. & Sch., 1962

*Cypraea caurica* Linnaeus, 1758
*C. dracaena* Born, 1778
*C. corrosa* Gronovius, 1781
*C. derosa* Gmelin, 1791
*C. quinquefasciata* Roeding, 1798
*C. elongata* Perry, 1811
*C. obscura* Rossiter, 1882
*C. oblongata* Melvill, 1888
*C. cairnsiana* Melvill & Standen, 1904
*Erronea caurica longior* Iredale, 1935
*Erronea caurica thema* Iredale, 1939
*Erronea caurica blaesa* Iredale, 1939

*Cypraea childreni* Gray, 1825
*Pustularia (Ipsa) childreni novaecaledoniae* Sch. & Sch., 1932
*Pustularia (Ipsa) childreni lemurica* Sch. & Sch., 1938
*Pustularia (Ipsa) childreni samurai* Sch. & Sch., 1940

*Cypraea chinensis* Gmelin, 1791
*C. variolaria* Lamarck, 1810
*C. cruenta* Dillwyn, 1817
*C. violacea* Rous, 1905
*C. tortirostris* Sowerby, 1906
*C. amiges* Melvill & Standen, 1915
*C. splendens* Taylor, 1916
*Cribraria (Ovatipsa) chinensis sydneyensis* Sch. & Sch., 1938
*Cribraria (Ovatipsa) chinensis whitworthi* Cate, 1964

*Cypraea cicercula* Linnaeus, 1758
*Cypraea lienardi* Jousseaume, 1874
*Cypraea tricornis* Jousseaume, 1874
*Pustularia tricornis vuluvala* Steadman & Cotton, 1943

*Cypraea clandestina* Linnaeus, 1767
*C. moniliaris* Lamarck, 1810
*C. candida* Pease, 1865
*C. clandestina* var. *passerina* Melvill, 1888
*Palmadusta clandestina whitleyi* Iredale, 1939
*Palmadusta clandestina extrema* Iredale, 1939
*Cypraea contaminata* Sowerby, 1832
*Palmadusta (Palmadusta) contaminata distans* Sch. & Sch., 1938
*Palmadusta (Palmadusta) contaminata malaysiae* Sch. & Sch., 1940
*Cypraea cribraria* Linnaeus, 1758
*C. comma* Perry, 1811
*C. fallax* Smith, 1881
*C. cribraria* var. *exmouthensis* Melvill, 1888
*Nivigena melwardi* Iredale, 1930
*Cribraria (Cribraria) northi* Steadman & Cotton, 1943
*Cribraria (Cribraria) zadela* Iredale, 1939
*Cribraria (Cribraria) cribraria orientalis* Sch. & Sch., 1940
*Cypraea cylindrica* Born, 1778
*Cypraea subcylindrica* Sowerby, 1870
*Erronea (Blasicrura) cylindrica sowerbyana* Schilder, 1932
*Palangerosa cylindrica lenella* Iredale, 1939
*Palangerosa cylindrica sista* Iredale, 1939
*Palangerosa cylindrica wangga* Steadman & Cotton, 1943
*Cypraea depressa* Gray, 1824
*C. arabica* var. *depressa* Gray, 1824
*C. intermedia* Redfield, 1847
*C. gillei* Jousseaumme, 1893
*Mauritia (Arabica) depressa dispersa* Sch. & Sch., 1939
*Cypraea eglantina* Duclos, 1833
*C. niger* Roberts, 1885
*C. couturieri* Vayssiere, 1905
*Arabica perconfusa* Iredale, 1935
*Arabica eglantina monokiti* Steadman & Cotton, 1943
*Cypraea erosa* Linnaeus, 1758
*C. similis* Gmelin, 1791
*C. erosa* var. *phagedaina* Melvill, 1888
*C. erosa* var. *chlorizans* Melvill, 1888
*C. purissima* Vredenburg, 1919
*C. lactescens* Dautzenberg & Bouge, 1933
*Cypraea errones* Linnaeus, 1758
*C. coerulescens* Schroter, 1804
*C. bimaculata* Gray, 1824
*C. ovum* Kiener, 1843
*C. coxi* Brazier, 1872
*C. chrysophaea* Melvill, 1888
*Erronea nimiserrans kalavo* Steadman & Cotton, 1943
*Erronea errones vivili* Steadman & Cotton, 1943
*Erronea nimiserrans* Iredale, 1935
*Erronea nimiserrans proba* Iredale, 1939
*Erronea nimiserrans magerosea* Iredale, 1939

*Cypraea felina* Gmelin, 1791
*C. ursellus* Kiener, 1843
*C. fabula* Kiener, 1843
*C. melvilli* Hidalgo, 1906
*Palmadusta (Melicerona) felina pauciguttata* Sch. & Sch., 1938
*Melicerona melvilli velesia* Iredale, 1939

*Cypraea fimbriata* Gmelin, 1791
*C. marmorata* Schroter, 1804
*C. unifasciata* Mighels, 1845
*Palmadusta waikikiensis* Schilder, 1933
*Palmadusta (Melicerona) fimbriata durbanensis* Sch. & Sch., 1938

*Cypraea goodallii* Sowerby, 1832
*C. fuscomaculata* Pease, 1865
*C. adelinae* Roberts, 1885
*C. dautzenbergi* Hidalgo, 1907

*Cypraea globulus* Linnaeus, 1758
*Cypraea affinis* Gmelin, 1791
*Pustularia (Pustularia) globulus sphaeridium* Sch. & Sch., 1938
*Pustularia (Pustularia) globulus brevirostris* Sch. & Sch., 1938

*Cypraea gracilis* Gaskoin, 1849
*C. fimbriata* Sowerby, 1837
*C. notata* Gill, 1858
*C. macula* Angas, 1867
*C. irescens* Sowerby, 1870
*C. macula* var. *cholmondeleyi* Melvill, 1888
*C. interpunctata* Henn, 1896
*Erronea (Erronea) fimbriata subcoerulea* Sch. & Sch., 1931
*Erronea japonica* Schilder, 1931
*Cupinota macula hilda* Iredale, 1939

*Cypraea helvola* Linnaeus, 1758
*C. chalcedonia* Perry, 1811
*C. helvola* var. *mascarena* Melvill, 1888
*C. helvola* var. *argella* Melvill, 1888
*C. helvola* var. *hawaiiensis* Melvill, 1888
*C. callista* Shaw, 1909
*C. gareti* Vayssiere, 1910
*Erosaria helvola citrinicolor* Iredale, 1935
*Erosaria (Ravitrona) helvola meridionalis* Sch. & Sch., 1938

*Cypraea hirundo* Linnaeus, 1758
*C. neglecta* Sowerby, 1837
*C. rouxi* Ancey, 1882
*Blasicrura (Derstolida) hirundo francisca* Sch. & Sch., 1938
*Evenaria hirundo cameroni* Iredale, 1939
*Evenaria hirundo peropima* Iredale, 1939
*Evenaria hirundo korolevu* Steadman & Cotton, 1943

CYPRAEIDAE - continued

*Cypraea irrorata* Gray, 1828

*Cypraea isabella* Linnaeus, 1758
- *Cypraea controversa* Gray, 1824
- *Luria (Basilitronia) isabella atriceps* Sch. & Sch., 1938
- *Luria (Basilitronia) isabella rumphii* Sch. & Sch., 1938
- *Basilitronia isabella cavia* Steadman & Cotton, 1943
- *Basilitronia isabella lemuriana* Steadman & Cotton, 1946

*Cypraea kieneri* Hidalgo, 1906
- *Cypraea hirundo* Sowerby, 1837
- *Erronea stolida hirundo reductesignata* Schilder, 1924
- *Erronea (Blasicrura) kieneri depriesteri* Sch., 1933
- *Blasicrura (Derstolida) kieneri schneideri* Sch. & Sch., 1938
- *Evenaria ursellus marcia* Iredale, 1939
- *Evenaria ursellus vitiensis* Steadman & Cotton, 1943
- *Bistolida kieneri landeri* Sch. & Sch., 1962

*Cypraea labrolineata* Gaskoin, 1849
- *Cypraea flaveola* var. *labro-lineata* Gaskoin, 1849
- *Cypraea flaveola* Gray, 1825
- *Cypraea helenae* Roberts, 1869
- *Erosaria labrolineata nashi* Iredale, 1931
- *Erosaria labrolineata percomis* Iredale, 1931
- *Erosaria labrolineata maccullochi* Iredale, 1939
- *Erosaria helenae nasese* Steadman & Cotton, 1943

*Cypraea leviathan* Sch. & Sch., 1937
- *Cypraea (Lyncina) carneola leviathan* Sch. & Sch., 1937

*Cypraea limacina* Lamarck, 1810
- *Cypraea interstincta* Wood, 1828
- *Purpurosa facifer* Iredale, 1935
- *Purpurosa limacina monstrans* Iredale, 1935
- *Staphylaea purpurosa ruvaya* Steadman & Cotton, 1943

*Cypraea listeri* Gray, 1825
- Note: Burgess (1970) considers this a variation of *C. felina* Gmel, 1791

*Cypraea lutea* Gmelin, 1791
- *Cypraea lutea* Gronovius, 1781 (name invalid)
- *Cypraea humphreysii* Gray, 1825 (See under *C. yaloka* S. & C., 1943)
- *Cypraea nivea* Wood, 1828
- *Palmadusta bizonata* Iredale, 1935

*Cypraea lynx* Linnaeus, 1758
- *Cypraea vanelli* Linnaeus, 1758
- *Cypraea caledonica* Crosse, 1869
- *Cypraea lynx* var. *williamsi* Melvill, 1888
- *Cypraea michaelis* Melvill, 1905
- *Lyncina lynx pacifica* Steadman & Cotton, 1943

*Cypraea maculifera* Schilder, 1932
*Cypraea reticulata* Martyn, 1784 (name invalid)
*Mauritia (Arabica) arabica maculifera* Schilder, 1932

*Cypraea mappa* Linnaeus, 1758
*Cypraea alga* Perry, 1811
*Cypraea mappa* var. *rosea* Gray, 1824
*Cypraea mappa* var. *susignata* Melvill, 1888
*Leporicypraea viridis* Kenyon, 1902
*Mauritia mappa geographica* Sch. & Sch., 1933
*Leporicypraea mappa rewa* Steadman & Cotton, 1943

*Cypraea margarita* Dillwyn, 1817 (Burgess: possible synonym for *C. circula* L., 1758)

*Cypraea mariae* Schilder & Schilder, 1927
*(Cypraea annulata* Gray, 1828)
*Pustularia (Pustularia) mariae* Sch. & Sch., 1927

*Cypraea mauritiana* Linnaeus, 1758
*Cypraea regina* Gmelin, 1791
*Cypraea calx-equina* Melvill & Standen, 1899

*Cypraea moneta* Linnaeus, 1758
*Cypraea icterina* Lamarck, 1810
*Cypraea tuberculosa* Quoy & Gaimard, 1834
*Cypraea barthelemyi* Bernardi, 1861
*Cypraea ethnographica* Rochebrune, 1884
*Cypraea mercatorium* Rochebrune, 1884
*Monetaria icterina rhomboides* Sch. & Sch., 1933
*Monetaria monetoides* Iredale, 1939
*Monetaria monetoides harrisi* Iredale, 1939
*Monetaria monetoides isomeres* Iredale, 1939
*Monetaria moneta endua* Steadman & Cotton, 1943
*Monetaria moneta erua* Steadman & Cotton, 1943
*Monetaria moneta etolu* Steadman & Cotton, 1943

*Cypraea nucleus* Linnaeus, 1758
*Cypraea madagascariensis* Gmelin, 1791
*Cypraea gemmosa* Perry, 1811
*Staphylaea (Nuclearia) nucleus sturanyi* Sch. & Sch., 1938

*Cypraea onyx* Linnaeus, 1758
*Cypraea succincta* Linnaeus, 1758
*Cypraea adusta* Lamarck, 1820
*Cypraea umbilicata* Dillwyn, 1823
*Cypraea nymphae* Jay, 1850
*Cypraea carnicolor* Morch, 1852
*Erronea (Adusta) onyx melanesiae* Schilder, 1937

*Cypraea ovum* Gmelin, 1791
*Cypraea cruenta* Gmelin, 1791
*Cypraea olivacea* Lamarck, 1810
*Cypraea sophiae* Brazier, 1876
*Erronea (Erronea) ovum chrysostoma* Schilder, 1927
*Erronea (Erronea) ovum palawensis* Sch. & Sch., 1938

*Cypraea poraria* Linnaeus, 1758
*Cypraea scarabaeus* Bory, 1827
*Erosaria poraria theoreta* Iredale, 1939

*Cypraea punctata* Linnaeus, 1771
*Cypraea atomaria* Gmelin, 1791
*Cypraea stercus muscarum* Lamarck, 1810
*Cypraea trizonata* Sowerby, 1870
*Palmadusta (Palmadusta) punctata iredalei* Sch. & Sch., 1938
*Evenaria persticta* Iredale, 1939
*Evenaria carula* Iredale, 1939

*Cypraea schilderorum* Iredale, 1939
*Cypraea arenosa* Gray, 1824
*Ponda schilderorum* Iredale, 1939

*Cypraea staphylaea* Linnaeus, 1758
*Cypraea cosobrina* Garrett, 1879
*Cypraea laevigata* Dautzenberg, 1932
*Staphylaea (Staphylaea) descripta* Iredale, 1935
*Styphylaea nukulau* Steadman & Cotton, 1943

*Cypraea stolida* Linnaeus, 1758
*Cypraea crossei* Marie, 1869
*Cypraea brevidentata* Sowerby, 1870
*Cypraea stolida* var. *moniontha* Melvill, 1888
*Cypraea stolida* var. *diauges* Melvill, 1888
*Cypraea irvinaenae* Cox, 1889
*Derstolida fluctuans* Iredale, 1935
*Derstolida fluctuans deceptor* Iredale, 1935
*Bistolida stolida thakau* Steadman & Cotton, 1943
*Bistolida fluctuans nandronga* Steadman & Cotton, 1943

*Cypraea scurra* Gmelin, 1791
*Cypraea retifera* Menke, 1829
*Cypraea indica* Sowerby, 1836
*Cypraea amarata* Morch, 1852
*Arabica antelia* Iredale, 1939
*Arabica scurra vono* Steadman & Cotton

*Cypraea talpa* Linnaeus, 1758
*Cypraea saturata* Dautzenberg, 1903
*Talparia (Talparia) talpa imperialis* Sch. & Sch., 1938

*Cypraea teres* Gmelin, 1791
*Cypraea subfasciata* Link, 1807
*Cypraea tabescens* Dillwyn, 1817
*Cypraea alveolus* Tapparone, 1882
*Cypraea punctulata* Hidalgo, 1907
*Talostolida teres pentella* Iredale, 1939
*Talostolida subteres hermani* Iredale, 1939

*Cypraea testudinaria* Linnaeus, 1758
*Cypraea testudinosa* Perry, 1811
*Callistocypraea (Chelycypraea) testudinaria ingens* Sch. & Sch., 1938

*Cypraea tigris* Linnaeus, 1758
*Cypraea pardalis* Shaw, 1795
*Cypraea tigris* var. *lyncichroa* Melvill, 1888
*Cypraea tigris volai* Steadman & Cotton, 1943
*Cypraea tigris amboolee* Steadman & Cotton, 1943
*Cypraea tigris schilderiana* Cate, 1961
*Note: Cyprea tigris schilderiana* Cate 1961 is believed to be the variation found on Guam.

*Cypraea ventriculus* Lamarck, 1810
*Cypraea achatina* Perry, 1811
*Ponda ventriculus topee* Steadman & Cotton, 1943

*Cypraea vitellus* Linnaeus, 1758
*Cypraea dama* Perry, 1811
*Cypraea vitellus* var. *sarcodes* Melvill, 1888
*Cypraea distorta* Cox, 1889
*Mystaponda orcina* Iredale, 1931
*Cypraea (Lyncina) vitellus polynesiae* Sch. & Sch., 1939

*Cypraea yaloka* Steadman & Cotton, 1943
*Palmadusta lutea yaloka* Steadman & Cotton, 1943
*Cypraea humphreysii* Gray, 1825

*Cypraea ziczac* Linnaeus, 1758
*Cypraea undata* Lamarck, 1810
*Cypraea misella* Perry, 1811
*Cypraea vittata* Deshayes, 1831
*Palmadusta ziczac signata* Iredale, 1939

OVULIDAE - These members of the superfamily Cypraecea are also called false cowries. The animals resemble the true Cypraeidae, but the shells frequently have extended or produced extremities; often the columella is smooth as may be the outer lip. In size they range from a quarter inch to more than 4 inches (that is, for Guam's species.) They are found associated with the corals and sea fans usually in deeper water and are distributed in warm and temperate seas worldwide. Periostratum and operculum are both absent.

*Phenacovolva (Phenacovolva) birostris* (Linnaeus, 1767)
- *Bulla birostris* L., 1767
- *Ovula biristris* Lam., 1810
- *Ovulum philippinarum* Sow., 1848
- *Ovulum birostris* Hanley, 1856
- *Birostra birostris* Chenu, 1859
- *Ovula philippinarum* Weinkauff, 1881
- *Birostra philippinarum* Paetel, 1887
- *Volva (Phenacovolva) birostris* Schilder, 1941
- *Pellasimnia subreflexa* Schilder, 1941
- *Volva sowerbyana* Allan, 1956
- *Volva philippinarum* Allan, 1956

*Calpurnus (Procalpurnus) lacteus lacteus* (Lamarck, 1810)
- *Ovula lactea* Lam., 1810
- *Ovulum album* Dufo, 1840
- *Ovulum lacteum* Sow., 1848
- *Ovulum alba* Tryon, 1885
- *Ovula lactea carnea* Praetel, 1887
- *Calpurnus lacteus* Thiele, 1931
- *Procalpurnus lacteus* Ire., 1935

*Ovula ovum* (Linnaeus, 1758)
- *Bulla ovum* L., 1758
- *Ovula cygnea* Rod., 1798
- *Ovula oviformis* Lam., 1801
- *Ovula alba* Perry, 1811
- *Ovulum ovum* Sow., 1825
- *Ovula pygmaea* Sow., 1828
- *Amphiperas ovum* H. & A. Adams, 1853
- *Ovulum gallinaceum* Rve., 1860

*Calpurnus (Procalpurnus) lacteus semistriatus* (Pease, 1862)
- *Amphiperas semistriata* Pease, 1862
- *Ovulum semstriatum* Rve., 1865
- *Ovula semistriata* Weinkauff, 1881
- *Ovula lactea* Tryon, 1885
- *Calpurnus (Procalpurnus) semistriata* Schilder, 1941

*Calpurnus (Calpurnus) verrucosus* (Linnaeus, 1758)
- *Radius gibbus* Rumphius, 1705
- *Bulla verrucosa* L., 1758
- *Ovula perla* Rod., 1798
- *Ovula verrucosa* Sow., 1825
- *Cyprella varrucosa* Swain, 1840
- *Ovulum verrucosum* Sow, 1842
- *Calpurnus verrucosus* H. & A. Adams, 1842
- *Ovulum verrucosa* Hanley, 1856

OVULIDAE - continued

*Calpurnus (Calpurnus) verrucosus* (Linnaeus, 1758) - continued
*Calpurnus (Ovula) verrucosa* Horst & Schepman, 1899
*Calpurnus (Calpurnus) verrucosus* Thiele, 1931

TRIVIIDAE - The triviidae are also members of the superfamily Cypraecea. There is no single identifier for the Trivia; they are all small shells and occasionally have a dorsal groove. They have neither an operculum nor a periostratum. Generally, they are more globose than the Cypraeidae. They normally may be found in the intertidal zone in shallow waters or under rocks and coral. Some species also inhabit deeper water on a coral rubble bottom.

*Trivirostra exigua* (Gray, 1831)
*Trivirostra hordacea* (Kiener, 1843)
*T. insecta* Mighels, 1845
*T. sandwichensis* Sow., 1870
*T. desirabilis* Ire., 1912
*Trivirostra oryza* (Lamarck, 1810)
*Lachryma sulcifera* (Sowerby, 1832)
*L. corrugatum* Hinds, 1845
*L. schmeltziana* Crosse, 1867
*L. capenesis* Schilder, 1833
*L. smithi* Schilder, 1833
*L. schneideri* Schilder, 1833

NATICIDAE - The moon snails are either small or moderately sized. The spire is very low and the last whorl large and inflated with a large, semi-ovate aperture. The umbilicus may or may not be open, and there is no siphonal canal. The operculum may be thick and calcareous, or thin and corneous. The animals are found worldwide, and prefer sandflats or sand beaches near the mid-intertidal region. They are carnivorous.

*Natica (Naticarius) alapapilionis* (Roeding, 1798)
*N. zonaria* Lam, 1816
*N. taeniata* Menke, 1828
*N. articulata* Phil., 1852
*N. crenata* Recluz, 1853
*Polinices aurantius* (Roeding, 1798)
*P. aurantia* Lam., 1822
*P. straminea* Recluz, 1844
*P. sulphurea* Recluz, 1844
*P. mellosum* Hedley, 1924
*Natica (Tectonatica) bougei* Sowerby, 1908
*Natica gualtieriana* Recluz, 1844
*N. tessellata* Phil., 1849
*Tanea hilaris* (Sowerby, 1914)
*Notocochlis hilaris* Kira, 1962
*Cryptonatica janthostomoides* Kuroda & Habe, 1949
*Polinices mammilla* (Linnaeus, 1758)
*P. pyriformis* Recluz, 1844
*Mammilla maura* (Bruguiere, 1816)

NATICIDAE - continued

*Polinices (Mammilla) melanostomus* (Gmelin, 1791)
*P. opaca* Recluz, 1851
*P. putamen* Moerch, 1852
*P. lactea* Phil., 1852
*P. subfasciata* Phil., 1852
*P. zonata* Phil., 1852
*P. succineoides* Rve., 1855
*Natica (Naticarius) onca* (Roeding, 1798)
*N. pavimentum* Rod., 1798
*N. litterata* Link, 1807
*N. chinensis* Lam., 1816
*N. candida* Wood, 1825
*Natica rufilabris* Reeve,
*Polinices sagamiensis* Pils., 1904
*Natica sagitifera* (Recluz, 1844)
*Polinices (Mammilla) simiae* (Deshayes, 1838)
*P. sigaretina* Menke, 1828
*P. samarensis* Recluz, 1844
*P. propesimiae* Ire., 1929
*Natica (Tectonatica) violacea* Sowerby, 1825
*N. glabra* Wood, 1828
*N. rhodostoma* Phil., 1842
*Natica vitellus* (Linnaeus, 1758)
*N. rufa* Born, 1778
*N. leucozonias* Gmel., 1791
*N. spadicea* Gmel., 1791
*Cochlis albula* Rod., 1798
*Cochlis rufescens* Rod., 1798
*N. fuscata* Link, 1807
*N. helvacea* Lam., 1822
*Notocochlis zebra* (Lamarck, 1822)

CASSIDAE - The helmet or bonnet shells are worldwide in distribution, inhabiting tropical and temperate seas, including some cooler areas from the low tide mark down to below 60 fathoms. Phalium strigatum, for example, is found on the Korean west coast, where the ocean beaches are ice covered in winter. The adults vary from one to fifteen inches in length and are characterized by an ovate shape, large body whorl, or more varices, a well-developed parietal or columellar shield, and a flat to moderately high spire. Most adults have a corneous operculum which is thin, semicircular, or fan-shaped, with the nucleus at the middle of the margin. The males of C. cornuta are smaller and usually have fewer and longer shoulder knobs; the males of genus Phalium are smaller than the females. C. cornuta live in colonies on sandy and broken coral rock bottoms. The food of Cassis and Phalium consists of various echinoderms, such as sea urchins, sand dollars, and sea biscuits. Cassis and Casmaria are found usually in clear oceanic waters, whereas Phalium are found on rich nitrogenous continental shores or well-vegetated island shores.

CASSIDAE - continued

*Phalium bisulcatum* (Schubert & Wagner, 1829)
*Buccinum areola* Burrows, 1815
*Buccinum tessellatum* Wood, 1825
*Cassis scrobiculata* Menke, 1828
*Cassis bisulcata* Sch. & Wag., 1829
*Cassis saburon* Sch. & Wag., 1829
*Cassis pila* Rve., 1848
*Cassis japonica* Rve., 1848
*Cassis saburon* Kuster, 1857
*Cassis pila* Kuster, 1857
*Cassis nucleus* Kuster, 1857
*Cassis japonica minor* Kuster, 1857
*Cassis pfeifferi* Hid., 1871
*Faurotis bisulcata* Sow., 1888
*Cassis pfeifferi* Sow., 1896
*Cassis booleyi* Sow., 1900
*Cassis pila* Tesch, 1920
*Semicassis diuturna* Ire., 1927
*Xenogalea nashi* Ire., 1931
*Cassis suburon pila* Yen, 1933
*Cassis japonica* Yen, 1933
*Phalium pila* Altena, 1943
*Semicassis persimilis* Kira, 1955 (n.n.)
*Semicassis persimilis* Kira, 1959
*Semicassis pila* MacNeil, 1960
*Cassis cornuta* (Linnaeus, 1758)
*Buccinum cornutum* L., 1758
*Cassidea cornuta* Brug., 1792
*C. caput-equinum* Rod., 1798
*C. hamata* Rod., 1798
*C. labiata* Dill, 1817
*C. madagascariensis* Lam., 1822
*C. amboiensis* Tryon, 1885
*C. brevirostrum* Tryon, 1885
*C. cornuta* Staub, 1916
*C. cornuta* Weaver, 1961
*Casmaria erinaceus erinaceus* (Linnaeus, 1758)
*Buccinum vibex* L., 1758
*Cassis denticulata* Rod., 1798
*Phalium edentulum* Link, 1807
*Cassis vibex* Kuster, 1857
*Cassis vibex ventricosa* Rigacci, 1866
*C. erinaceus* Ire., 1927
*C. vibex* Ire., 1927
*Phalium (Casmaria) erinaceum* Bayer, 1935
*Casmaria ponderosa ponderosa* (Gmelin, 1791)
*Buccinum ponderosum* Gmel., 1791
*Buccinum nodulosum* Gmel., 1791
*Cassidea erinaceus* Brug., 1792
*Phalium quadratum* Link, 1807
*Buccinum biarmatum* Dill., 1817
*Buccinum pantherina* Dill., 1817
*Cassis nodulosa* Menke, 1828

CASSIDAE - continued

*Casmaria ponderosa ponderosa* (Gmelin, 1791) - continued
*Cassis tenuilabris* Menke, 1828
*Cassis torquata* Rve., 1848
*Cassis turgida* Rve., 1848
*Cassis torquata* Kuster, 1857
*C. torquata* Jousseaume, 1888
*Cassis cernica* Sow., 1888
*Cassidea Nodulosa torquata* Hedley, 1910
*C. ponderosa* Ire., 1927

TONNIDAE - The tun shells are moderate to large in size, but surprisingly thin and light. The spire is short with an inflated last whorl; the aperture is very large, with the thin outer lip either fluted or denticulate. The columella has a prominent siphonal fasciole. There is no operculum. The animals are carnivorous sand dwellers and prefer deeper water.

*Tonna perdix* (Linnaeus, 1758)
*Dolium rufum* Blainville, 1829
*T. rufra* Osima, 1929
*T. coturnix* Rod., 1798
*T. meleagris* Rod., 1798
*T. reticulatus* Montfort, 1810
*T. plumatum* Green, 1830
*Malea pommum* (Linnaeus, 1758)
*M. labrosa* Gray, 1847
*M. macgregori* Ire., 1931

CYMATIIDAE - The triton shells are a large family, found worldwide. Adult shells are strong and vary in size from small to quite large. The shell is porcelaneous and covered with a fibrous or hairy periostratum. There is no anal canal; the siphonal canal may be short or long, sometimes twisted or recurved. In most species the inner lip is extensively wrinkled, and varices of the outer lip are formed by an inward folding. Varices are a characteristic of the family, and different genera form these at a constant angular distance apart, such as 120°, 180°, 270°, etc. The operculum is thick, horny, and ovate with the nucleus near the anterior end of the aperture. Cymatiidae are found in a variety of habitats, being both rock and sand dwellers. While many species are shallow-water dwellers, others live in deep water. They are carnivores, with Charonia tritonis being one of the major predators of the Crown-of-Thorns starfish.

*Distorsio anus* (Linnaeus, 1758)
*D. rotunda* Perry, 1811
*D. rugosa* Schumacher, 1817
*Cymatium aquatile* (Reeve, 1844)
*Cymatium clandestinum* (Lamarck, 1822)
*Cymatium gemmatum* (Reeve, 1844)
*C. mundum* Gould, 1849
*C. blacketi* Ire., 1929

CYMATIIDAE - continued

*Gyrineum gyrinum* (Linnaeus, 1758)
*G. verrucosum* Link, 1807
*G. variegata* Perry, 1811
*G. ranina* Lam., 1822
*Cymatium (Septa) hepaticum* (Roeding, 1798)
*Cymatium labiosum* (Wood, 1828)
*C. rutilum* Menke, 1843
*Cymatium lotorium* (Linnaeus, 1758)
*C. rhinoceros* Rod., 1798
*C. distortum* Lam., 1816
*Gutturnium muricinum* (Roeding, 1798)
*Cymatium nodulus* Link, 1807
*Cymatium tuberosum* Lam., 1822
*Cymatium nicobaricum* (Roeding, 1798)
*C. lotorium* Link, 1807
*C. chlorostomum* Lam., 1822
*Cymatium pileare* (Linnaeus, 1758)
*C. aquatilis* Rve., 1844
*C. vestitum* Hinds, 1844
*C. martinianum* D'Orb., 1845
*C. intermedius* Pease, 1869
*C. veliei* Calkins, 1878
*Distorsio pusilla* (Pease, 1860)
*Gyrineum pusillum* (Broderip, 1832)
*Cymatium lacunatum* Mighels, 1845
*G. facetum* Ire., 1936
*Cymatium pyrum* (Linnaeus, 1758)
*C. clavatum* Rod., 1798
*C. canaliculatum* Rod., 1798
*C. caudatum* Rod., 1798
*C. flexuosum* Rod., 1798
*C. muricatum* Rod., 1798
*Cymatium rubeculum* (Linnaeus, 1758)
*C. limabatum* Rod., 1798
*C. flaveola* Rod., 1798
*C. scarlatina* Rod., 1798
*Charonia tritonis* (Linnaeus, 1758)
*C. polosa* Rod., 1798
*C. marmoratus* Link, 1807
*C. variegatum* Lam., 1822
*Cymatium vespaceum* (Lamarck, 1822)

BURSIDAE - These moderate to large shells, called frog shells, resemble the Cymatiidae but lack the fuzzy periostratum. The aperture has deep openings for both the anterior and posterior siphonal canals, often with produced appendages. They have a corneous operculum, yellow-brown or brown in color. The Bursidae are primarily rock dwellers, living on or near coral reefs.

BURSIDAE - continued

*Bursa bubo* (Linnaeus, 1758)
*B. bufo* Rod., 1798
*B. nodifera* Lam., 1822
*B. rubeta gigantea* E. A. Smith, 1914
*Bursa buffonia* (Gmelin, 1791)
*B. mammata* Rod., 1798
*B. monitata* Rod., 1798
*B. leo* Shikama, 1964
*Ranella corrugata* Perry, 1811
*Bursa cruentata* (Sowerby, 1841)
*Bursa granularis* (Roeding, 1798)
*B. jabick* Rod., 1798
*B. elegans* Perry, 1811
*B. granifera* Lam., 1816
*B. semigranosa* Lam., 1822
*B. livida* Rve., 1844
*B. fijiensis* Watson, 1886
*B. alfredensis* Turton, 1932
*Bursa nobilis* (Reeve, 1844)
*B. pacator* Ire., 1931
*Bursa rhodostoma* (Sowerby, 1835)
*Bursa rosa* Perry, 1811
*B. siphonata* Rve., 1844
*Bursa tenuisgranosa* (Smith, 1914)

COLUBRARIDAE - The colubraria are warmwater dwellers and are found throughout the Indo-Pacific area. The shells are moderately sized and fusiform with the spire larger than the aperture. The canal is short. Guam's C. tortuosa is found under coral in shallow to deeper water.

*Colubraria distorta* Schilder & Wagner,
*Colubraria maculosa* Gmelin, 1791
*Colubraria muricata* (Lightfoot, 1786)
*Colubraria nitidula* (Sowerby, 1833)
*Colubraria tortuosa* (Reeve, 1844)

MURICIDAE - This large family, more commonly called rock shells, consists of seven subfamilies: Muricinae, Ocenebrinae, Aspellinae, Thaidinae, Trophoninae, Typhinae, and Rapaninae. The shells of this family probably vary more in shape and sculpture than do any of the other families, ranging from the long canal and spines of Murex pecten through the oddshaped members of the genus Homolocantha to the genera Drupa and Thais with their heavy shells and minimal canals. The muricids are found worldwide in cold as well as tropical waters. It is estimated that in the superfamily Muricacea, which includes the Columbariidae and Magilidae as well as the Muricidae, there are between 500 and 600 living species. The operculum is horny and brown, and the animals are predominantly carnivorous. They dwell in a variety of environments such as muddy or sandy areas, under rocks or on coral reefs, in calm, or in rough waters.

*Thais aculeata* (Deshayes, 1844)
*T. hippocastanum* L., 1758
*T. pseudohippocastanum* Dautz., 1929
*Aspella anceps* (Lamarck, 1822)
*Ranella producta* Pease, 1861
*Homolocantha anatomica* Perry, 1811
*H. rota* Mawe, 1823
*H. nitidus* Brod., 1833
*H. rota* Sow., 1857
*Morula anaxeres* (Kiener, 1835)
*Purpura cancellata* Kien., 1835
*M. squamosa* Pease, 1867
*Thais armigera* (Link, 1807)
*T. affinis* Rve., 1846
*Morula biconica* (Blainville, 1832)
*M. bicatenata* Rve., 1846
*M. variabilis* Pease, 1868
*Morula borealis* (Pilsbry, 1904)
*Sistrum morus borealis* Pils., 1904
*Morula brunneolabrum* Dall, 1904
*Chicoreus brunneus* (Link, 1807)
*Murex rubicundus* Perry, 1811
*Murex adustus* Lam., 1822
*C. australiensis* A. Adams, 1853
*C. huttoniae* Wright, 1878
*Boreotrophon candelabrum* (Reeve, 1848)
*Fusus candelabrum* Rve., 1848
*Trophon candelabrum* Sow., 1880
*Trophon subclavatus* Yokoyama, 1920
*B. stephanos* Isitaki, 1938
*Trophonopsis candelabrum* Kira, 1962
*Chicoreus capucinus* Roeding, 1798
*Drupella cariosa* (Wood, 1828)
*Drupa clathrata clathrata* (Lamarck, 1816)
*Ricinula clathrata* Lam., 1816
*Purpura clathrata* Kien., 1835
*Pentadactylus clathratus* H. & A. Adama, 1853
*Ricinula hystrix clathrata* Tryon, 1880
*Drupa rubuscaesia* Hedley, 1913
*Drupa rubuscaesia* Hirase, 1936
*Drupa rubuscaesius* Hirase & Taki, 1951
*Drupa rubuscaesium* Kira, 1954
*Drupa rubsidaeus* Kira, 1962
*Drupa rubusidaeus* Arakawa, 1965
*Drupa (Ricinella) rubusidaeus* Habe & Kosuge, 1967
*Drupa clathrata* Cernohorsky, 1969
*Thais clavigera* Kuster, 1858
*Purpura clavigera* Kuster, 1860
*Purpura clavigera* Lischke, 1869
*Purpura tumulosa* Lischke, 1860
*Purpura problematica* Baker, 1891
*T. clavigera* Kira, 1962

MURICIDAE - continued

*Phyllocoma convolutum* (Broderip, 1833)
*Thais cornigarum* Linnaeus, 1758
*Drupella cornus* (Roeding, 1798)
    *Purpura elata* Blain., 1832
    *Purpura spectrum* Rve., 1846
    *D. ochrostoma* Tryon, 1880
*Boreotrophon elegantula* (Dall, 1907)
*Morula fiscella* (Gmelin, 1791)
    *M. stellaris* H. & J., 1853
    *M. confragosa* H. & A. Adams, 1863
*Morula granulata* (Duclos, 1832)
    *M. tuberculata* Blain., 1832
    *M. cingulifera* Kien., 1835
    *M. chrysalis* Sow., 1908
    *M. ceylonica* Dall, 1923
*Drupina grossularia* (Roeding, 1798)
    *Murex morum globosum* Martini, 1777
    *Murex neritoideus* Gmel., 1791
    *D. grossularia* Rod., 1798
    *Ricinula digitata* Lam., 1816
    *Purpura monstuosa* Lesson, 1842
    *Murex fimbriatus* Mawe, 1823
    *Murex ricinus* Wood, 1825
    *Purpura digitata* Blain., 1832
    *Purpura laurentiana* Saussaye, 1850
    *Pentadactylus grossularius* H. & A. Adams, 1853
    *Ricinula hystrix laurentiana* Tryon, 1880
    *Pentadactylus digitatus* Horst & Schepman, 1908
    *D. grossularia* Ire., 1929
    *Sistrum digitatum* Morris, 1952
    *D. grossularia* Wu, 1965
    *Drupa (Drupina) grossularia* Orrmaes, 1968
*Thais intermedia* (Kiener, 1835)
*Murex laqueatus* (Gmelin, 1791)
*Indomitrella lischkei* (E. A. Smith, 1909)
*Drupa mancinella* Linnaeus, 1758
*Morula (Cronia) margariticola* (Broderip, 1832)
    *M. thiarella* Q. & G., 1833
    *M. rhyssa* Dall, 1923
*Drupa marginatra* (Blainville, 1832)
*Vitularia miliaris* (Gmelin, 1791)
    *V. vitulinus* Lam., 1816
    *V. purpura* Deshayes & Milne-Edwards, 1843
    *V. sandwicensis* Pease, 1860
    *V. longmani* Ire., 1929
*Drupa morum morum* Roeding, 1798
    *Nerita nodosa* L., 1758
    *Murex neritoides* L., 1767
    *Murex morum globosum* Martini, 1777
    *D. morum* Rod., 1798
    *Canrena neritoides* Link, 1807
    *Ricinula horrida* Lam., 1816
    *Ricinella violacea* Schumacher, 1817

MURICIDAE - continued

*Drupa morum morum* Roeding, 1798 - continued
*Ricinula horrida* Children, 1823
*Purpura horrida* Lam., 1832
*Sistrum horridum* Gray, 1850
*Ricinula globosa* Morch, 1852
*Pentadactylus globosus* H. & A. Adams,1853
*Pentadactylus horridus* Horst & Schepman, 1908
*D. morum* Adams & Leloup, 1938
*Morulina musina* (Kiener, 1834)
*Morula nodicostata* (Pease, 1868)
*Engina purpureocincta* Preston, 1909
*Drupella ochrostoma* (Blainvill, 1832)
*Chicoreus palmiferus* Sowerby, 1840
*Morula parva* (Reeve, 1846)
*M. echinata* Rve., 1846
*M. nodulifera* Pease, 1860
*M. angulatum* Sow., 1893
*Purpura persica* (Linnaeus, 1758)
*Morula prophyrostoma* (Reeve, 1846)
*Muricodrupa pothuanii* (Souleyet, 1852)
*Purpura pothuanii* Soul., 1852
*Sistrum fiscellum* Tryon, 1880
*Cronia pothuauii* Habe, 1964
*Thais pseudodiadema* (Yokoyama, 1928)
*Cuma pseudodiadema* Yokoyama, 1928
*Morulina pseudodiadema* Habe, 1964
*Chicoreus ramosus* (Linnaeus, 1758)
*Murex incarnata* Rod., 1798
*Murex inflatus* Lam., 1822
*C. frondosus* Moerch, 1852
*Drupa ricinus ricinus* (Linnaeus, 1758)
*Murex ricinus* L., 1758
*Murex hystrix* L., 1758
*Murex morum globosum* Martini, 1777
*D. tribulus* Rod., 1798
*D. rubuscaesius* Rod., 1798
*Sistrum album* Montfort, 1810
*Ricinula arachnoides* Lam., 1816
*Murex neritoideus* Mawe, 1831
*Purpura albo-labris* Blain., 1832
*Purpura arachnoides* Blain., 1832
*Sistrum arachnoides* Gray, 1850
*Pentadactylus ricinus* H. & A. Adams, 1853
*Ricinulus albolabris* Chenu, 1859
*Ricinula rininus* Tryon, 1880
*Pentadactylus arachnoides* Fischer, 1884
*Sistrum ricinus* Schepman, 1911
*D. ricinus* Hedley, 1913
*D. rubus-cestus* Dall, 1915
*D. ricinus* Theile, 1929
*Ricinula ricinus arachnoides* Dautz., & Bouge, 1933
*D. ricinus* Hertlein, 1960

*Drupa ricinus ricinus* (Linnaeus, 1758) - continued
*Drupa ricina albolabris* Hertlein, 1960
*D. albolabris* Arakawa, 1965
*D. arachnoides* Wu, 1965
Note: *Drupa albolabris* (Blainville) - white apertured form
*Drupa arachnoides* (Lamarck) - yellow orange spotted form. Recognized by some as separate species. Both forms have been found on Guam.
*Drupa rubusidaeus* Roeding, 1798
*Murex nodus* Gmel., 1791
*D. rubusidaeus* Rod., 1798
*D. fragum* Rod., 1798
*Mancinella hystrix* Link, 1807
*Ricinella purpurata* Schum., 1817
*Murex hystrix* Dill., 1817
*Purpura hystrix* Lam., 1822
*Murex hippocastanum* Wood, 1825
*Purpura spathulifera* Blain., 1832
*Purpura histrix* Q. & G., 1833
*Pentadactylus hystrix* H. & A. Adams, 1853
*Ricinula reeveana* Crosse, 1862
*Ricinula hystrix* Tryon, 1880
*Ricinula hystrix reeveana* Tryon, 1880
*Sistrum hystrix* Schep., 1911
*D. rubusidaeus* Hedley, 1913
*D. spathulifera* Hirase, 1936
*D. hystrix* A. & L., 1938
*D. rubuscaesia* Kaicher, 1957
*D. rubuscaesium* Rippingale & McMichaels, 1961
*D. rubuscaesius* Kira, 1962
*D. speciosa* Wu, 1965
*D. rubusidaea* Orr Maes, 1967
*Thais rudolphi* (Lamarck, 1816)
*Drupella rugosa* (Born, 1778)
*D. concatenatus* Lam., 1822
*D. fragum* Blain., 1832
*Maculotriton sculptile* (Reeve, 1844)
*Maculotriton serriale* (Deshayes, 1834)
*M. bracteatus* Hinds, 1844
*M. longus* Pils. & Van., 1904
*Nassa serta* (Bruguiere, 1789)
*N. hederacea* Schum., 1817
*Drupa speciosa* (Dunker, 1867)
*Ricinula clathrata* Lam., 1846
*Ricinula speciosa* Dunker, 1867
*Ricinula hystrix speciosa* Tryon, 1880
*D. speciosa* Cernohorsky, 1969
*Morula spinosa* (H. & A. Adams, 1853)
*M. chrysostoma* Rve., 1846
*M. iostomus* A. Adams, 1853
*M. coronata* H. Adams, 1869
*M. andewsi* E. A. Smith, 1909
*M. ambusta* Dall, 1923

MURICIDAE - continued

*Chicoreus torrefactus* (Sowerby, 1841)
*C. carneola* Rod., 1798
*C. elongata* Link, 1807
*Morula triangulatum* (Pease, 1867)
*Naquetia trigonulus* (Lamarck, 1822)
*Pterynotus tripterus* (Born, 1778)
*Pterynotus triqueter* (Born, 1778)
*Thais tuberosa* (Roeding, 1798)
*T. castaneum* Rod., 1798
*T. trapa* Rod., 1798
*T. pica* Blain., 1832
*T. major* Couturier, 1907
*Morula uva* (Roeding, 1798)
*M. aspera* Lam., 1816
*M. nodus* Lam., 1816
*M. papillosa* Schum., 1817
*M. morus* Fischer, 1807
*M. morus* Lam., 1822
*M. sphaeridea* Duc., 1832
*Morula undata* (Linnaeus, 1758)
*Vexilla vexillum* (Gmelin, 1791)
*Murex taeniata* Powis, 1836
*V. picta* Swain., 1840

MAGILIDAE [=RAPIDAE CORALLIOPHILIDAE] - Most of these shells live on or inside soft and hard corals and sea fans. They are mostly small to medium sized, ranging from strong to fragile in build. They all have a siphonal canal or notch, but the umbilicus may or may not be present. The operculum is brown and corneous. They are all found in tropical or warm seas and range from shallow to very deep waters.

*Magilus antiquus* Montfort, 1810
*M. leptoconchus* Ruppell, 1834
*Coralliophila bulbiformis* (Conrad, 1837)
*Coralliophila cantraini* (Souverbie, 1861)
*Coralliophila costularis* Lamarck, 1816
*Coralliophila erosa* (Roeding, 1798)
*C. exarata* Pease, 1861
*C. galea* Rve., 1846
*C. deformis* Lam., 1822
*C. plicatus* Wood, 1818
*C. dorbignyanum* Petit, 1851
*Rapa incurva* Dunker,
*Magilopsis lamarcki* (Deshayes, 1863)
*Quoyula madreporarum* (Sowerby, 1834)
*Purpura monodonta* Q. & G., 1833
*Quoyula monodonta* (Blainville, 1832)
*Rapa rapa* (Linnaeus, 1758)
*R. striata* Rod., 1798
*R. pellucida* Rod., 1798
*R. papyracea* Lam., 1822

*Coralliophila stearnsi* Pilsbry, 1895
*Coralliophila violacea* (Keiner, 1836)
*Murex neritoides* Gmel., 1791
*Fusus neritoideus* Lam., 1816
*C. diversiformis* Kiener, 1836
*C. squamulosa* Rve., 1846
*C. neritoidea* Sow., 1882

COLUMBELLIDAE [=PYRENIDAE] - The shells are small and thick. They are found in most warm seas and are frequently mistaken for miters. The aperture is usually narrow and denticulate with the outer lip sometimes incurving. The operculum is corneous and small. The animals prefer sandy bottoms.

*Mitrella albina* (Kiener, 1841)
*M. egeria* Duc., 1846
*M. albaria : agonatodes : carneola : nubila : polychroa : straminea : zonifera* Hervier, 1899
*Pyrene (Columbella) deshayesii* (Crosse, 1859)
*Columbella anceps* Hervier, 1899
*Pyrene flava* (Bruguiere, 1789)
*P. tringa* Duc., 1840
*P. tringa* Kiener, 1841
*P. tringa* Sow., 1844
*P. tringa* Tryon, 1883
*P. flavida* Lam., 1822
*P. obtusa* Sow., 1832
*P. undata* Duc., 1840
*P. ouveana* Hervier, 1899
*P. lugubris* Kiener, 1841
*Mitrella ligula* (Duclos, 1840)
*Mitra insignis* A. Adams, 1853
*Mitrella marquesa* (Gaskoin, 1852)
*M. decolor* Gould, 1860
*M. lineolata* Gould, 1860
*M. sublaevis* Mont., 1864
*M. gowllandi* Brazier, 1875
*M. marquesana* Tryon, 1883
*M. elongata* Hervier, 1899
*Pyrene moleculina* (Duclos, 1840)
*Mitrella (Zafrona) nebulosa* (Gould, 1860)
*Triton pusilla* Pease, 1861
*Columbella isomella* Duc., 1840
*Pyrene ocellata* (Link, 1807)
*P. fulgurans* Lam., 1822
*P. puncturata* Lam., 1822
*P. fuliginosa* Dupuis, 1831
*Pyrene philippinarum* (Reeve, 1858)
*Mitrella puella* Sowerby, 1844
*M. conspersa* Gaskoin, 1852
*M. contaminata* Gas., 1852
*M. baculus* Rve., 1859
*M. sigaloessa* Melvill & Standen, 1896

COLUMBELLIDAE - continued

*Mitrella puella* Sowerby, 1844 - continued
*M. dilutа : intemerata : circulata : suspecta* Hervier, 1899
*M. brevis : nodosa* Schepman, 1913
*Pyrene punctata* (Bruguiere, 1789)
*P. rhombiferum* Rod., 1798
*P. torva* Dill., 1817
*P. semipunctata* Lam., 1822
*P. discors* Gmel., 1791
*Pseudomycia rorida* Reeve,
*Aesopus spiculum* (Duclos, 1846)
*Columbella cumingii* Rve., 1859
*Columbella clavsilia* Duc., 1846
*Pyrene splendidula* Sowerby, 1825
*Pyrene testudinaria* (Link, 1807)
*P. lactescens* Souv., 1866
*P. nigropardalis* Habe & Kosuge, 1966
*P. pardalina* Lam., 1822
*P. tylerae* Grif. & Pidg., 1834
*P. vulpecula* Sow., 1844
*P. japonica* Rve., 1858
*P. sagena* Rve., 1858
*P. elongata : laxa : nigrescens : minor : bifasciata : fulgurata : crocea : picturata : lanceolata : sublactescens* Hervier, 1899
*Zafra troglodytes* (Souverbie, 1866)
*Pyrene ornata* Pease, 1868
*Pyrene garretti* Tryon, 1833
*Pyrene fulvastra* Hervier, 1899
*Pyrene succinea* Hervier, 1899
*Pyrene obesula* Hervier, 1899
*Pyrene sinensis* Sow., 1894
*Pyrene (Columbella) turturina* (Lamarck, 1822)
*P. palumbina* Gould, 1845
*P. sandwichensis* Pease, 1861
*Pyrene (Columbella) varians* (Sowerby, 1832)
*P. nana* Duc., 1840
*P. daliola* Duc., 1840
*P. clarescens : lucescens : lucida : maculifera : fulvescens : scalaris : persignata* Hervier, 1899
*Mitrella venulata* (Sowerby, 1894)

BUCCINIDAE - The members of this family vary considerably in size from those of the genera Buccinum and Neptunea of 6 - 8 inches, to the small half inch of the Genus Engina. Ornamentation and shape also varies. Locations are also varied, as they inhabit very cold boreal regions to the hot tropics. The operculum is corneous; no plicae or folds are found on the columella; and most of them have heavy periostratum.

*Engina alveolata* (Kiener, 1836)
*E. lauta* Rve., 1846
*E. histrio* Rve., 1846
*E. fusiformis* Pease, 1865

*Clivipollia fragaria* (Wood,
*Cantharus fumosus* (Dillwyn, 1817)
    *Buccinum proteus* Rve., 1846
*Pisania gracilis* (Reeve, 1846)
    *P. marmoratum* Rve., 1846
    *Buccinum marmoratum* Link, 1807
    *P. billeheusti* Petit, 1853
    *P. crocatum* Rve., 1846
*Pisania (Ecmanis) ignea* (Gmelin, 1791)
    *P. buccinulum* Rod., 1798
    *P. flammulatum* Q. & G., 1833
    *P. pictum* Rve., 1846
*Engina lineata* (Reeve, 1846)
    *Ricinula maculata* Pease, 1869
*Engina mendicaria* (Linnaeus, 1758)
*Enzinopsis menkeana* (Dunker, 1860)
    *Cantharus menkeanus* Dunker, 1860
    *Tritonidea submenkeana* Pils., 1901
    *E. menkeana* Habe, 1964
*Cantharus (Pollia) pulchra* (Reeve, 1846)
*Ecmanis tritonoides* (Reeve, 1846)
    *Buccinum tritonoides* Rve., 1846
    *Pisania tritonoides* Hirase, 1908
    *E. tritonoides* Habe, 1964
*Pisania (Caducifer) truncata* (Hinds, 1844)
    *P. decapitatus* Rve., 1844
    *P. cylindricus* Pease, 1868
*Phos varicosum* Gould,
*Cantharus (Pollia) wagneri* (Anton, 1839)
    *Turbinella crenulata* Rve., 1847
*Engina zonalis* (Lamarck, 1822)
    *E. zonata* Rve., 1846
    *E. melanozona* Tomlin, 1928

NASSARIDAE - The dog-whelks or basket shells are small to medium sized. They are globose to elongate oval, and some species have a heavy callus over the parietal wall. The aperture is often denticulate, and also often lirate, with a conspicuous anterior notch; the operculum is horny. The animals are carnivorous and scavengers and bury themselves in the coral or muddy sand during the day but at night forage in large colonies.

*Zeuxis abyssicola* Reeve,
*Nassarius (Niotha) albescens albescens* (Dunker, 1846)
    *N. bicolor* H. & J., 1853
    *N. praecallosa* Marrat, 1877
*Nassarius arcularius arcularis* (Linnaeus, 1758)
    *N. arcularius coronata* Link, 1807
    *N. obvelatum* Deshayes, 1834
    *N. rumphii* Desh. & Edw., 1844
*Nassarius plicarcularia bellula* A. Adams, 1852

NASSARIIDAE - continued

*Nassarius coronatus* (Bruguiere, 1789)
*N. bronnii* Phil., 1849
*N. fasciolatus* Hirase, 1936
*N. fasciolatus* Cotton, 1955
*Nassarius (Zeuxis) crematus* (Hinds, 1844)
*N. siquijorensis* A. Adams, 1852
*N. crenellifera* A. Adams, 1852
*N. quadrata* Marrat, 1880
*N. eugypta* Sow., 1914
*Reticunassa fratercula* (Dunker, 1860)
*Nassa fratercula* Lischke, 1871
*Nassa hypolia* Pils., 1895
*Nassa hizenensis* Pils., 1904
*Nassa fuscolineata* Hirase, 1908
*Nassarius (Niotha) gaudiosus* (Hinds, 1844)
*N. pictum* Dunker, 1846
*N. reeveanum* Dunker, 1847
*N. marrati* E. A. Smith, 1876
*Nassarius (Alectrion) glans glans* (Linnaeus, 1758)
*N. lineatum* Rod., 1798
*N. suturale* Lam., 1822
*N. intermedia* Dunker, 1866
*N. dunkeri* Suter, 1908
*Nassarius granifer* (Kiener, 1834)
*N. verrucosus* Brug., 1789
*N. obliqua* H. & J., 1853
*Zeuxis hayashii* Habe, 1961
*Nassarius hirasei* Koroda & Habe
*Hebra horridus* (Dunker, 1847)
*Nassarius muricatum* Q. & G., 1833
*Nassarius scabrum* Dunker, 1846
*Nassarius curta* Gould, 1850
*Nassarius jonasi* (Dunker, 1846)
*Nassarius (Niotha) livescens* (Phillipi, 1849)
*Nassa livescens* Lischke, 1871
*Nassarius (Zeuxis) margaritiferus* (Dunker, 1847)
*Plicarcularia oneratus* (Deshayes, 1863)
*Nassarius (Alectrion) papillosus* (Linnaeus, 1758)
*Nassa papillosa seminuda* Dautz., 1929
*Nassarius (Hima) pauperus* (Gould, 1850)
*N. microstoma* Pease, 1860
*N. dermestina* Gould, 1860
*N. plebecula* Gould, 1860
*N. tringa* Souv., 1864
*N. balteata* Pease, 1869
*N. scalarina* Marrat, 1877
*Nassarius (Plicarcularia) pullus* (Linnaeus, 1758)
*N. thersites* Brug., 1789
*N. bimaculosa* A. Adams, 1852
*N. gracilis* Pease, 1868
*N. acypha* Martens, 1887

NASSARIIDAE - continued

*Zeuxis siquijorensis* (A. Adams, 1852)
*Nassarius gaelata* A. Adams, 1852
*Nassarius siqujorensis* Rve., 1853
*Nassarius euglypta* Sow., 1914
*Nassarius splendidulus* Dunker,
*Niotha stigmaria* (A. Adams, 1852)
*N. ranida* A. Adams, 1852
*N. densigranata* Rve., 1853
*Nassarius sufflatus* (Gould, 1860)
*N. desmoulea japonica* A. Adams, 1853
*N. balteatus* Lischke, 1869
*N. binominata* Pils., 1895
*N. kurodai* Tomlin, 1932

FASCIOLARIIDAE - The members of this family are usually found in tropical waters, although some species locate in warm temperate zone waters. They vary in size from moderately small (20 mm) to large (200 mm), as in Fasciolaria trapezium. They are spindle shaped with high spires, porcelaneous, and with siphonal canals ranging from short to very long, as in the Fusininae. The operculum is a thick, horny, brown one, usually claw-shaped, and the periostratum is either translucently brown or opaque. THe Fusinus live on sand and coral rubble bottoms at depths greater than 2 fathoms, whereas the Fasciolaria, Latirus, and Peristernia hide under coral rocks in shallow water.

*Pleuroploca trapezium audouini* Jones, 1846
*Latirus polygonus barclayi* (Reeve, 1847)
*Latirus craticulatus* (Linnaeus, 1758)
*Peristernia fastigium* (Reeve, 1847)
*P. rhodostoma* Dunker, 1860
*Peristernia nassatula* (Lamarck, 1822)
*Latirus nodatus* (Gmelin, 1791)
*L. rigidus* Wood, 1828
*L. robillardi* Tap.-Can., 1879
*Latirus (Latirolagena) smaragdulus* (Linnaeus, 1758)
*L. crassa* Schum., 1817
*L. rustica* Lam., 1852
*Peristernia thaanumi* Pils. & Bryan
*Fasciolaria (Pleuroploca) trapezium* (Linnaeus, 1758)
*F. lineata* Perry, 1811
*F. ferruginea* Lam., 1822
*F. ponderosa* Jonas, 1851
*F. lischkeana* Dunker, 1863

OLIVIDAE - These members of the superfamily Volutacea are inhabitants of warm and tropical waters and are found world-wide. The family Olividae is usually divided into four major divisions: Oliva, Olivella, Agaronia, and Ancilla, with these in turn divided into subgenera. Olives are usually cylindrical with a short spire. Like the cowries, their porcelaneous shell is formed by an enveloping mantle, and therefore they have no periostratum. With the exception of the Olivella, they do not have an operculum either.

OLIVIDAE - continued: Members of the family are sand dwellers, and carnivores. They are most active at night, especially at the turn of the tide. They can be easily followed, as they move just below the surface of the sand, by the trail they leave.

*Oliva annulata amethystina* Roeding, 1798
*Oliva (Oliva) annulata* Gmelin, 1791
    *O. emicator* Meuschen, 1787 (n.b.)
    *O. leucophaea* Lam., 1810
    *O. guttata* Lam., 1810
    *O. cruenta* Rve., 1850
*Oliva (Galeola) carneola* Gmelin, 1791
    *O. coffea* Rod., 1798
*Ancilla cylindrica* Sowerby, 1830
*Oliva (Omogymna) duclosi* Reeve, 1850
    *O. jaspidea* Duc., 1835
    *O. natalia* Duc., 1844
    *O. duclosiana* Jay, 1850
*Oliva (Neocylindrus) lignaria* Marrat, 1868
    *O. ornata* Marrat, 1867
    *O. cylindrica* Marrat, 1867
*Oliva (Oliva) miniacea* Rod., 1798
    *O. erythrostoma* Meuschen, 1787 (n.b.)
    *O. erythrostoma* Lam., 1811
    *O. magnifica* Duc., 1857
    *O. porphyritica* Marrat, 1871
    *O. miniata* Link, 1807
*Oliva annulata nebulosa* Dautzenberg, 1927
*Oliva (Omogymna) paxillus* Reeve, 1850
    *O. nitidula* Duc., 1835
    *O. ozodona* Duc., 1835
    *O. thomasi* Crosse, 1851
*Oliva miniacea saturata* Dautzenberg, 1927
*Oliva (Neocylindrus) tesselata* Lamarck, 1811

VASIDAE - The Vasidae, containing only a few subfamilies are a world-wide, warm water family. Only members of the Vasinae are found on Guam. The shells are heavy with large spines. V. ceramicum has a high spire and three columellar plicae, whereas the V. turbinellus has a low spire with 4-5 plicae. The first named has small paired teeth on the inside of the outer lip. V. turbinellus lives in shallow water to depths of 5 fathoms; it is also found on reef flats sheltering under dead coral during the daytime, as well as on sand, coral rubble, and sparse turtle grass bottoms. V. ceramicum prefers the rougher waters of the front edge of the coral reefs, in depth of a half to 5 fathoms. The Vasidae are easily differentiated from some of the larger Thaidinae by the columellar folds, showing its relationship to other families within the superfamily Volutacea rather than those in Muricacea.

VASIDAE - continued

*Vasum (Vasum) turbinellus* (Linnaeus, 1758)
*Murex turbinellus* L., 1758
*Voluta turbinellus* L., 1767
*Volutella nigra* Perry, 1811
*Turbinella cornigera* Lam., 1822
*Turbinella variolaris* Lam., 1822
*Vasum (Vasum) ceramicum* (Linnaeus, 1758)
*Murex ceramicus* L., 1758
*Voluta ceramica* L., 1767
*Turbinellus spinosus* G. Fischer, 1807

HARPIDAE - The shells of this family are among the most beautiful of the seven families (Vasidae, Turbinellidae, Harpidae, Olividae, Volutidae, Mitridae, Marginellidae) of the superfamily Volutacea of the suborder Stenoglossa. The main characteristics of the shell are a very large body whorl, large aperture, low conical spire, and strong ribs. The siphonal canal is short or absent, and there is no operculum. The columella has a callus across it, its margin, and the columellar pillar. Harps are found on sandy bottoms in shallow to fairly deep water. They have also been found in sand on top of reefs. H. major is found in water of 8-10 fathoms on bottoms of sand, shell, and rubble. Shells of males are always narrower than those of females.

*Harpa harpa* (Linnaeus, 1758)
*Buccinum harpa* L., 1758
*H. nobilis* Rod., 1798
*Harpalis nobilis* Link, 1807
*H. harpa* M. Smith, 1948
*Harpa amouretta* (Roeding, 1798)
*H. amouretta* Rod., 1798
*Harpalis amouretta* Link, 1807
*H. oblonga* Schum., 1817
*H. minor* Lam., 1822
*H. crassa* Krauss, 1848
*H. solidula* A. Adams, 1854
*H. gracilis* Kuster, 1857
*H. virginalis* Sow., 1870
*H. solida* Sow., 1860
*Harpa major* Roeding, 1798
*H. major* Rod., 1798
*Harpalis major* Link, 1807
*H. grandiformis* Perry, 1811
*H. vulgaris* Schum., 1817
*Buccinum harpa* Wood, 1818
*H. conoidalis* Lam., 1822
*H. ventricosa* Lam., 1822
*H. ligata* Menke, 1828
*H. ventricosa conoidalis* Keiner, 1835
*H. ventricosa* Kiener, 1835
*H. nobilis* Kiener, 1835
*H. striatula* A. Adams, 1854
*H. nablium* Sow., 1860
*H. davidis* Habe, 1961

MITRIDAE - This family, containing between 400-500 species, is found worldwide in all warm and temperate seas being most prolific in the tropics. They range in size from one quarter to 6 inches, and are carnivorous. Among the distinguishing characteristics are the three to ten folds on the columella and the distinct siphonal notch. Mitrids inhabit the bottoms of coral boulders and crevices on reef flats, or else bury in sand and among weeds. Four of the largest subfamilies and their genera are: Mitrinae-Mitra, Neocancilla, Strigatella; Cylindromitrinae-Pterygia; Imbricarinae-Imbricaria, Cancilla, Swainsonia, Scabricola; Vexillinae-Vexillum, Pusia. Various authors have added numerous other genera to the above subfamilies, as well as added subfamilies. This author's feelings are that fragmentation makes identification that much more difficult. The older generic names are therefore retained wherever necessary.

*Strigatella acuminata* (Swainson, 1824)
    *S. lutea* Q. & G., 1833
*Costellaria acuminatum* (Gmelin, 1791)
    *C. crebriliratum* Rve., 1844
*Vexillum acupictum* (Reeve, 1844)
*Pusia adamsoni* (Reeve, 1844) Possibly same as P. millecostatum Brod., 1836
    *P. evelynae* Melvill, 1895
*Pusia amabilis* (Reeve, 1845)
    *P. encausta* Gould, 1850
*Vexillum amanda* (Reeve, 1845)
*Mitra ambigua* Swainson, 1829
    *M. brevis* Dautz., 1935
*Vexillum angulosum* Anton, 1839
*Subcancilla annulata* (Reeve, 1844)
    *Cancilla philippinarum* (Adams, 1853)
    *Cancilla astyagis* Dohrn, 1860
*Neocancilla antoniae* (H. Adams, 1870)
*Vexillum antonelli* (Dohrn, 1860)
*Nebularia aurantia* (Gmelin, 1791)
*Vexillum aureolatum* (Reeve, 1844)
    *V. pilsbryi* Hedley, 1899
    *V. bizonalis* Dautz. & Bouge, 1928. Possibly same as Pusia unifascialis Lam., 1811
*Mitra aureolata* Swainson, 1826
*Mitra auriculoides* Reeve, 1845
    *M. peronii* Petit, 1853 non Lam., 1811
*Ziba bacillum* (Lamarck, 1811)
*Pusia berhardina* (Roeding, 1798)
    *P. muriculata* Lam., 1811
*Mitra boisacci* Montrouzier, 1858
    *M. cyri* Dohrn, 1860. Possibly same as Ziba fulgetrum Rve., 1844
*Vexillum cadaverosum* (Reeve, 1844)
    *V. mutica* Dautz. & Bouge, 1923
    *V. rubrozonata* Dautz. & Bouge, 1923
*Pusia cancellarioides* (Anton, 1839)
    *P. nodosa* Swainson, 1823 non Borson, 1820
    *P. tuberculata* Keiner, 1839
*Mitra cardinalis* (Gmelin, 1791)
    *M. monachialis* Rod., 1798
    *M. archiepiscopalis* Lam., 1811

MITRIDAE - continued

*Swainsonia casta* (Gmelin, 1791)
*S. fasciata* Martyn, 1784
*S. matronalis* Schum., 1817
*S. laevis* A. Adams, 1853
*Pusia catenatum* (Broderip, 1836)
*Mitra chrysalis* Reeve, 1844
*M. caledonica* Recluz, 1853
*Mitra chrysostoma* Broderip, 1836
*Mitra citrina* (Reeve, 1844)
*Neocancilla clathrus* (Gmelin, 1791)
*N. maculosa* Gmelin, 1791
*N. crenifera* Lam., 1811
*N. pretiosa* Rve., 1844
*N. eburnostoma* Garrett, 1880
*N. emersoni* Pils., 1921
*Mitra coffea* Schubert & Wagner, 1829
*M. fulva* Swain., 1829
*M. attenuata* Rve., 1844
*M. thaanumiana* Pils., 1921
*Nebularia coarctata* Reeve, 1845
*Mitropifex collinsoni* (A. Adams,
*Mitra colombellaeformis* Kiener, 1839
*M. columbellaeformis* Rve., 1844
*Vexillum comtum* A. Adams,
*Costellaria concentricum* (Reeve, 1844)
*Vexillum echinatum* (A. Adams, 1853)
*Vexillum mucronata* Brod., 1836 non Gmel., 1791
*Imbricaria conovula* (Quoy & Gaimard, 1833)
*I. virgo* Brod., 1836
*Pusia consanguinea* (Reeve, 1845)
*P. russa* Gould, 1860
*Imbricaria conularis* (Lamarck, 1811)
*I. conica* Schum., 1817
*I. marmoratus* Swain., 1821
*I. lineatus* Swain., 1821
*Pterygia conus* (Gmelin, 1791)
*Pusia corallina* (Reeve, 1845)
*P. glabra* Schepman, 1913 non Swainson, 1821
*P. semicostatum* Anton, 1839 non Gmel., 1791
*Costellaria corbiculum* (Sowerby, 1874)
*Mitra coronata* Lamarck, 1811
*M. tiarella* A. Adams, 1853
*M. deleta* Dautz. & Bouge, 1923
*Vexillum coronatum* (Helbling, 1779)
*V. nodilirata* A. Adams, 1853
*Vexillum costatum* (Gmelin, 1791)
*V. subulata* Lam., 1811
*V. terebralis* Brod., 1836
*V. vitellina* Gould, 1850
*V. lanceolata* Hervier, 1897
*Strigatella crassa* (Swainson, 1822)
*S. caeligena* Rve., 1845
*S. assimilis* Pease, 1868

*Pterygia crenulata* (Gmelin, 1791)
*P. coronata* Schum., 1817 non Lam., 1811
*P. toleranda* Ire., 1929
*P. fastidiosa* Ire., 1929
*P. undulosa* Rve., 1845
*Vexillum crocatum* (Lamarck, 1811)
*V. aurantia* Brod., 1836 non Gmel., 1791
*V. concinna* Rve., 1844
*V. imitatrix* Dautz. & Bouge, 1923
*Vexillum cruentatum* (Gmelin, 1791)
*V. harpifera* Lam., 1811
*V. harpaeformis* Kien., 1839
*V. savignyi* Mel. & Standen, 1895
*Mitra cucumerina* Lamarck, 1811
*V. ferrugata* Dill., 1817
*V. globosa* Moerch, 1852
*V. pallida* Dautz. & Bouge, 1923 non Rve., 1844
*Vexillum cumingi* (Reeve, 1844)
*Pterygia dactylus* (Linnaeus, 1767)
*P. nucella* Rod., 1798
*P. obesa* Rve., 1844
*Strigatella decurtata* (Reeve, 1844)
*Scabricola desetangsii* (Kiener, 1839)
*S. suffecta* Dautz. & Bouge, 1923
*S. variegata* Rve., 1844
*Vexillum discolorium* (Reeve, 1844)
*Pusia diutenera* (Hervier, 1897)
*Dibaphus edentulus* (Swainson, 1823)
*Mitra eremitarum* Roeding, 1798
*M. adusta* Lam., 1811
*M. flavofusca* Lam., 1811
*M. ruffina* Dill., 1817
*Vexillum exasperatum* (Gmelin, 1791)
*V. torulosa* Lam., 1811
*V. michaelis* Ire., 1929
*Scabricola eximia* (A. Adams, 1853) non eximus Rve., 1844
*Strigatella fastigium* Reeve, 1845
*Pterygia fenestrata* (Lamarck, 1811)
*P. glans* Rve., 1844
*P. radula* Sow., 1874
*Mitra ferruginea* Lamarck, 1811
*M. vitulina* Dill., 1817
*M. clara* Sow., 1874
*Vexillum festum* (Reeve, 1845)
*Cancilla filaris* (Linnaeus, 1771)
*C. filosa* Born, 1780
*C. nexilis* Lam., 1811
*C. bornii* Phil., 1850
*C. bernardiana* Phil., 1850
*Mitra floridula* Sowerby, 1874
*Vexillum formosense* (Sowerby, 1890)
*V. minahassae* Schep., 1907
*V. utravis* Melvill, 1925

*Vexillum fortiplicatum* (Pease, 1868)
*Mitra fraga* Quoy & Gaimard, 1833
    *M. peregra* Rve., 1844
    *M. spadicea* Schmeltz, 1869 non Gmel., 1791
*Mitra fulvescens* Broderip, 1836
*Scabricola fusca* (Swainson, 1824)
    *S. limata* Rve., 1845
    *S. formosa* Pease, 1868
    *S. zephyrina* Sow., 1874
    *S. nevillei* Sow., 1874
*Neocancilla granatina* (Lamarck, 1811)
    *N. candida* Dautz. & Bouge, 1923
*Vexillum granosum* (Gmelin, 1791)
    *V. cancellata* Rod., 1798
    *V. condoriana* Dautz. & Fischer, 1907
*Vexillum gruneri* (Reeve, 1844)
    *V. modesta* Pease, 1868 non Rve., 1845
*Mitropifex hirasei* (Kira, 1961)
*Mitra imperialis* Roeding, 1798
    *M. digitalis* Link, 1807
    *M. millepora* Lam., 1811
    *M. cribum* Dill., 1817
*Mitra incompta* (Lightfoot, 1786)
    *M. tessellata* Martyn, 1784 - n.d.
    *M. terebralis* Lam., 1811
    *M. reevei* Phil., 1850
*Pusia infausta* (Reeve, 1845)
    *P. fulvosulcata* Melvill, 1888
*Cancilla interlirata* (Reeve, 1844)
    *C. foveolata* Dunker, 1858
*Vexillum intertaeniatum* (Sowerby, 1874)
    *V. pulchra* Garrett, 1880)
*Pusia interrupta* (Anton, 1839)
*Vexillum lautum* (Reeve, 1845)
    *V. adamsi* Dohrn, 1861
*Costellaria leucozonias* (Deshayes, 1834)
*Strigatella litterata* (Lamarck, 1811)
    *S. bizonalis* Lam., 1822
*Vexillum longispirum* (Sowerby, 1874)
*Vexillum lubens* (Reeve, 1845)
    *V. incompta* A. Adams, 1853
    *V. corbicula* Sow., 1870
    *V. diamesa* Hervier, 1897
    *V. modestum* Rve., 1845 non Pease, 1968
*Vexillum lucidum* (Reeve, 1845)
    *V. propingua* Garrett, 1880
    *V. dorothea* Mel. & Stand., 1896
*Vexillum luculentum* (Reeve, 1845)
    *V. diachroa* Adams & Rve., 1850
    *V. graeffei* Crosse, 1867
    *V. nigrofasciata* Sow., 1874
*Mitra luctuosa* (A. Adams, 1845)
    *M. nigricans* Pease, 1865

MITRIDAE - continued

*Mitra lugubris* Swainson, 1821
*M. elegantula* Kuester, 1841
*M. albofasciata* Sow., 1874
*Vexillum michaui* (Crosse & Fischer, 1864)
*V. alauda* Sow., 1874
*V. dunkeri* Schmeltz, 1869
*Pusia micra* (Pilsbry, 1920)
*Pusia microzonias* (Lamarck, 1811)
*P. sulcata* Gmel., 1791
*P. semiplicata* Brod., 1836
*Pusia millecostatum* (Broderip, 1836)
*Vexillum mirabilis* (A. Adams, 1853)
*Thala mirifica* (Reeve, 1845)
*Mitra mitra* Linnaeus, 1758
*M. episcopalis* Linnaeus, 1758
*M. carmelita* Rod., 1798
*Swainsonia mariae* (A. Adams, 1854)
*Tiara morchii* (A. Adams, 1853)
*Mitra multiplicata* Pease, 1865
*Pterygia nucea* (Gmelin, 1791)
*P. spuria* Gmel., 1791
*P. olivaria* Lam., 1811
*Vexillum obeliscus* (Reeve, 1844)
*V. subtruncata* Sow., 1874
*V. flexicostata* Garrett, 1880
*Thala ogasawarena* Pilsbry, 1921
*Strigatella oleacea* (Reeve, 1844)
*S. fuscescens* Pease, 1860
*Imbricaria olivaeformis* (Swainson, 1821)
*I. dactyloidea* Anton, 1839
*I. olivellaeformis* Pils., 1921
*Vexillum pacificum* (Reeve, 1845)
*V. rosea* Dautz. & Bouge, 1923 non Brod., 1836
*Pusia pagodula* (Hervier, 1897)
*Mitra papalis* (Linnaeus, 1758)
*Neocancilla papilio* (Link, 1807)
*N. sphaerulata* Martyn, 1784 - n.d.
*N. leucostoma* Gmel., 1791 - n.o.
*N. malsburgi* Menke, 1828
*Pusia pardalis* (Kuester, 1841)
*Pusia patriarchalis* (Gmelin, 1791)
*Strigatella paupercula* (Linnaeus, 1758)
*S. venosa* Rod., 1798
*S. zebra* Lam., 1811
*S. lineata* Swain., 1840 non Gmel., 1791
*S. obtusata* Dautz. & Bouge, 1923
*Strigatella pellisserpentis* (Reeve, 1844)
*S. granata* Rve., 1844
*S. uzielliana* Crosse, 1861
*S. nassoides* Sow., 1874 non Grateloup, 1840
*Scabricola pertusa* Linnaeus, 1758

*Vexillum plicarium* (Linnaeus, 1758)
*V. plicatum* Rod., 1798
*V. lividum* Rod., 1798
*Vexillum porphyreticum* (Reeve, 1844)
*V. ventricosa* Garrett, 1880
*V. satsumae* Dall, 1926
*Cancilla praestantissima* (Roeding, 1798)
*C. gracilis* Phil., 1850 non Rve., 1844
*Pterygia pudica* (Pease, 1860)
*P. nuxavellana* Dohrn, 1860
*P. lifouana* Crosse, 1872
*P. subtexturata* Garrett, 1880
*Imbricaria punctata* (Swainson, 1821)
*I. truncata* Keiner, 1839
*I. ossea* Rve., 1844
*Mitra puncticulata* Lamarck, 1811
*M. diadem* Swainson, 1822
*M. serpentina* Wood, 1828 non Lam., 1811
*Strigatella retusa* (Lamarck, 1811)
*S. lineata* Kuester, 1841 non Gmel., 1791
*Costellaria roseotinctum* (Hervier, 1897)
*Mitra rotundilirata* Reeve, 1844
*Mitra rubritincta* Reeve, 1844
*Pusia rubrum* (Broderip, 1836)
*Mitra rubiginea* A. Adams, 1854
*M. carinilirata* Souverbie, 1871
*Vexillum rugosum* (Gmelin, 1791)
*V. corrugata* Lam., 1811
*V. hybrida* Kiener, 1839
*Vexillum sanguisugum* (Linnaeus, 1758)
*V. stigmataria* Lam., 1811
*V. caerulescens* Dautz. & Bouge, 1923
*V. castaneosticta* Dautz. & Bouge, 1923
*Pterygia scabricula* (Linnaeus, 1758)
*P. scabriuscula* L. 1758
*P. texturata* Lam., 1811
*P. radiatum* Wood, 1828 non Gmel., 1791
*Strigatella scutulata* (Gmelin, 1791)
*S. spadicea* Gmel., 1791
*S. discolor* Rod., 1798
*S. amphorella* Lam., 1811
*S. sertum* Duval, 1852
*Vexillum semifasciatum* (Lamarck, 1811)
*S. rigida* Swain., 1821
*Vexillum speciosum* (Reeve, 1844)
*V. trizonalis* Dautz., 1935
*Mitra stictica* (Link, 1907)
*M. abbatis* Perry, 1811
*M. pontificalis* Lam., 1811
*M. thiara* Dill., 1817
*M. confluens* Dautz., 1935
*M. stricta* Kira, 1962

MITRIDAE - continued

*Mitra tabanula* Lamarck, 1811
*M. connectens* Dautz. & Bouge, 1923
*M. pediculus* Lam., 1811
*Mitra tornata* Reeve, 1845
*Pusia tuberosa* (Reeve, 1845)
*Vexillum turben* (Reeve, 1844)
*Mitra turgida* (Reeve, 1845)
*Vexillum turrigerum* (Reeve, 1845)
*V. armiger* Rve., 1845
*V. turricula* A. Adams, 1853 non Gmel., 1791
*V. humilis* Hervier, 1897
*V. rufobalteata* Hervier, 1897
*V. quaesita* Melvill, 1925
*V. militaris* Rve., 1845
*Costellaria turrigerum* (Reeve, 1845)
*Strigatella turturina* (Souverbie, 1875)
*Vexillum tusum* (Reeve, 1845)
*Strigatella typha* (Reeve, 1845)
*Pusia unifascialis* (Lamarck, 1811)
*Vexillum unifasciatum* (Wood, 1928)
*V. clathrata* Rve., 1844 non Gmel., 1791
*Mitra ustulata* Reeve, 1844
*M. kamehameha* Pils., 1921
*Imbricaria vanikoreensis* (Quoy & Gaimard, 1833)
*Mitra variabilis* Reeve, 1844
*M. cylindracea* Rve., 1844
*Swainsonia variegata* (Gmelin, 1791)
*S. rufum* Rod., 1798
*S. serpentina* Lam., 1811
*Mitra vexillum* Reeve, 1844
*M. aurantiaca* Kiener, 1838
*M. aurantiaca* Kuester, 1841 non Lam., 1811
*Cancilla verrucosa* (Reeve, 1845)
*Strigatella virgata* (Reeve, 1844)
*Vexillum zelotypum* (Reeve, 1845)
*V. rustica* Reeve, 1845
*V. crispa* Garrett, 1872
*V. subquadrata* Sow., 1874

MARGINELLIDAE - These porcelaneous shells range in size from small to very small. They are found worldwide in tropical waters. Their shape is ovate to fusiform; the spire is either short and shallow, or nonexistent, being covered by enamel in the adult. The outer lip is thickened and may be dentate. The columella has three to five folds. Although large footed, they have no operculum.

*Crithe (Microvulina) nipponica* Habe, 1951
*Gibberulina tantilla* Gould, 1860
*Marginella cotamago* Yokoyama, 1922
*Marginella perovulina* Yokoyama, 1922
*Persicula tantilla* Johnson, 1964

TURRIDAE - The Turridae is a very large family and found worldwide. In the family are the following subfamilies: Turriculinae, Clavatulinae, Cochlespirinae, Clavinae, Daphnellinae, Magelliinae, Turrinae, Conorbinae, and Borsoniinae. Some writers also include Thatcheriidae as a turrid subfamily rather than a separate family of the Toxoglossa. There is no characteristic turrid shape, such as the cones have, but generally they are fusiform in shape with a well developed spire, and a pronounced siphonal canal; as with many of the other large gastropod families, the various genera vary considerably in their ornamentation. The primary identifier is the so-called turrid slit from the outer lip between the suture and periphery of the last whorl which may be deep or fairly shallow. For the serious collector of turrids, subfamilies and genera may be identified by their labial profiles, as these show definite generic variations. The operculum is horny with an apical nucleus; its shape depends on the shape of the aperture, which differ in the various species. Turrids found around Guam are either sand dwellers or under coral rocks on a hard reef substrate.

*Lophiotoma acuta* (Perry, 1811)
*Pleurotoma acuta* Perry, 1811
*Pleurotoma marmorata* Lam., 1816
*Pleurotoma tigrina* Lam., 1822
*Pleurotoma punctata* Sch. & Wag., 1829
*Pleurotoma tigrina* Kiener, 1839
*Pleurotoma tigrina* Desh., 1843
*Pleurotoma tigrina* Rve., 1843
*Pleurotoma (Turris) peaseana* Dunker, 1876
*Pleurotoma picturata* Wein., 1876
*Pleurotoma tigrina* Tryon, 1884
*Pleurotoma notata* Sow., 1888
*L. microsticta* Casey, 1904
*Pleurotoma tigrina* Tesch, 1915
*Pleurotoma tigrina* Van Der Vlerk, 1931
*L. tigrina* Kaicher, 1956
*Turris tigrina* Habe, 1961
*Turris notata* Habe, 1961
*Lophiotoma albina* (Lamarck, 1822)
*Pleurotoma albina* Lam., 1822
*Pleurotoma albina* Rve., 1843
*Turridrupa albofasciata* (E. A. Smith, 1877)
*Surcula gatchensis* Hervier, 1895

*Turridrupa albofasciata* (E. A. Smith, 1877) - continued
*Surcula bijubata gatchensis* Dautz. & Bouge, 1914
*T. gatchensis* Oyama & Takemura, 1960
*Tylotia auriculifera* Lamarck, 1822
*Clavus canicularis* Rod., 1822 (?)
*Elaeocyma (Splendrillia) braunsi* (Yokoyama, 1920)
*Pleurotoma (Drillia) braunsi* Yokoyama, 1920
*Imaclava braunsi* Habe, 1964
*Clavus canicularis* (Roeding, 1798)
*Clavus auriculifera* Lam., 1816
*Turridrupa cerethina* (Anton, 1838)
*Pleurotoma crethina* Anton, 1839
*Pleurotoma digitale* Rve., 1843
*Drillia (Crassispira) digitalis* Rve., 1884
*Drillia (Crassispira) digitalis* Dautz. & Bouge, 1914
*T. cerethina* Hedley, 1922
*Xenoturris cingulifera cingulifera* (Lamarck, 1822)
*Pleurotoma cingulifera* Kiener, 1839
*Pleurotoma cingulifera* Rve., 1843
*Pleurotoma cingulifera* Tryon, 1884
*Pleurotoma cingulifera flammulata* Dautz. & Bouge, 1914
*Xenuroturris cingulifera* Kaicher, 1956
*Turridrupa astricta consobrina* Powell, 1967
*T. astricta* Oyama & Takemura, 1960
*Turris cryptorrhaphe* (Sowerby, 1825)
*Pleurotoma cryptorrhaphe* Sow., 1825
*Murex bicarinatus* Wood, 1828
*Pleurotoma woodii* Keiner, 1839
*Pleurotoma cryptorrhaphe* Rve., 1842/43
*Pleurotoma cryptorrhaphe* Weinkauff, 1875
*Pleurotoma cryptorraphe* Tryon, 1884
*Pleurotoma (Hemipleurotoma) cryptorhaphe* Schepman, 1913
*Xenoturris kingae* (Powell, 1964)
*Lienardia lanilabrum* (Reeve, 1810)
*Xenuroturris millepunctata* (Sowerby, 1908)
*Pleurotoma millepunctata* (Sowerby, 1908)
*Pleurotoma cingulifera zonifera* Dautz. & Bouge, 1914
*Gemmula monilifera* (Pease, 1860)
*Turris monilifera* Pease, 1860
*Pleurotoma monilifera* Pease, 1860
*Pleurotoma (Gemmula) monilifera* Wein., 1875
*Turris relomitra* Tinker, 1952
*Lienardia nigrocincta* (Montrouzier & Souverbie, 1872)
*Paradrillia patruelis* (E. A. Smith, 1875)
*Pleurotoma patruelis* Smith 1875/79
*Pleurotoma consimilis* Smith, 1879
*Clavatula (Alticlavatula) patruelis* MacNeil, 1960
*P. patruelis* Habe, 1962
*Pseudodaphnella philippinensis* (Peeve, 1843)
*Iredalea pygmaea* (Dunker, 1860)
*I. pupoidea* H. Adams, 1872
*I. victor* Sow., 1895

TURRIDAE - continued

*Daphnella (Hemidaphne) reeveana* (Deshayes, 1863)
*Clathurella tumida* Pease, 1867
*Vexitoma regia* (Reeve, 1842)
*Pleurotoma rougeyroni* Souv., 1874
*Turris lienardia rubicunda* Gould,
*Lienardia rubida* (Hinds, 1844)
*Turris spectabilis* (Reeve, 1843)
*Pleurotoma spectabilis* Rve., 1843
*Pleurotoma speactabilis* Weinkauff, Martini, and Chem., 1875
*Turris spectabilis* Hedley, 1922
*Eucithara stromboides* (Reeve, 1846)
*Cithara matakuana* E. A. Smith, 1884
*Clavus unizonalis* (Lamarck, 1822)

CONIDAE - This popular family with collectors has about 500-600 species in the genus Conus separated into about 30 subgenera. As the name implies, the shell is narrow at the base, widening to the top of the body whorl. The spire varies from very shallow, to a stele-like or turret-like form. Coronations at the shoulder and grooves around the base are the commonest sculptural form. The aperture is narrow and extends from the base to the shoulder at the top of the body whorl. The lip is thin and easily chipped. The majority of the cones have medium to heavy periostratum. The operculum, with a terminal nucleus, is horny and claw-shaped. The animals are carnivorous and live in coral sand, or on a hard reef substrate, under coral, or in crevices. They are found from the shallows to very deep waters, mainly in the tropics, although some are found in the temperate waters of the Mediterranean and off the California coasts. All cones possess venom glands and the apparatus for projecting the venom, although only six (marmoreus, striatus, textile, tulipa, geographus, aulicus) are considered to have sufficient toxicity to be fatal to man. Nevertheless, all cones should be handled with care, as the effects of the poison also depend on the age, size, fitness, etc., of the one bitten. Animals found on unprotected reef edges are mainly coarsely textured and often corroded by lime action where the periostratum has been abraded. In crevices back from the edge, they will have very heavy periostratum and rarely blemished except for possible spire corrosion. Sand dwellers on the other hand will have a finely textured periostratum with a high polish due to sand abrasion, and rarely marred by healed breaks. Rock dwellers on the lee side of the reef are usually thin skinned, lustrous, and seldom show damage due to wave action. In the following, all are considered as being in the genus Conus, so only the species name is given.

*C. abbreviatus* Reeve, 1843
*C. ammiralis* Linnaeus, 1758
*C. occidentalis* L., 1758
*C. ordinarius* L., 1758
*C. admiral* Berge, 1847
*C. blainvilli* Vig., 1829
*C. vicarius* L., 1767
*C. australis* Dautz., 1937

*C. ammiral* Linnaeus, 1758 - continued
- *C. extraordinarius* Hwass, 1792
- *C. crebremaculata* Dautz., 1937
- *C. amboinensis* Donovan, 1834
- *C. donovani* Dautz., 1937
- *C. larvatus* Gmel., 1791
- *C. granulatus* Dautz., 1937
- *C. polyzonus* Hwass, 1792
- *C. granulatus* Rod., 1798
- *C. imperialis* Rod., 1798
- *C. palinurus* Hwass, 1792
- *C. personatus* Hwass, 1792

*C. arenatus* Hwass, 1792
- *C. arenosus* Rod., 1798
- *C. armatus* E. A. Smith, 1891
- *C. arenarius* Hanley, 1859
- *C. granulosa* Lam., 1822
- *C. mesokatharos* Tryon, 1883

*C. aristophanes* Sowerby, 1857
- *C. coronalis* Rod., 1798

*C. aulicus* Linnaeus, 1758
- *C. particolor* Perry, 1810

*C. aureus* Hwass, 1792
- *C. auricomus* Lam., 1810 non-Hwass, 1792
- *C. paulucciae* Sow., 1876

*C. auricomus* Hwass, 1792

*C. balteatus* Sowerby, 1833
- *C. primula* Rve., 1849

*C. bandanus* Hwass, 1792
- *C. marmoreus* L., 1758

*C. boeticus* Reeve, 1844
- *C. boeticus* Kien., 1847
- *C. baeticus* Rve., 1846
- *C. dillwynii* Rve., 1849
- *C. piperatus* Rve., 1844
- *C. lachrymosus* Rve., 1849

*C. bullatus* Linnaeus, 1758
- *C. nubecula* Gmel., 1791
- *C. parvus* Rod., 1798
- *C. laganum* Rod., 1798

*C. canonicus* Hwass, 1792
- *C. tigrinus* Sow., 1857

*C. capitaneus* Linnaeus, 1758
- *C. classiarus* Hwass, 1792
- *C. chemnitzii* Dill., 1817
- *C. ceciliae* Crosse, 1858

*C. catus* Hwass, 1792
- *C. nubilus* Rod., 1798
- *C. discrepans* Sow., 1833
- *C. grumosus* Dill., 1817

*C. ceylanensis* Hwass, 1792 - possibly sub-species of musicus Hwass, 1792

*C. chaldeus* Roeding, 1798
    *C. vermiculatus* Lam., 1810
    *C. judaeus* Bergh, 1895
*C. consors* Sowerby, 1833
    *C. anceps* A. Adams, 1853
    *C. innexus* A. Adams, 1853
*C. coronatus* Gmelin, 1791
    *C. coronalis* Rod., 1798
    *C. virgineus* Link, 1807
    *C. minimus* Born, 1870
*C. distans* Hwass, 1792
    *C. mennonitarum* Dill., 1817
*C. ebraeus* Linnaeus, 1758
    *C. hebraeus* L., 1758
    *C. quadratus* Perry, 1811
*C. eburneus* Hwass, 1792
*C. eldredi* Morrison, 1955
    *C. rosea* Sow., 1833
    *C. mappa* Crosse, 1858
    *C. intermedius* Rve., 1843
*C. emaciatus* Reeve, 1849
*C. episcopus* Hwass, 1792
*C. ermineus* Born, 1778
    *C. narcissus* Lam., 1810
*C. flavidus* Lamarck, 1810
    *C. neglectus* Pease, 1860
    *C. peasei* Brazier, 1877
*C. floccatus* Sowerby, 1839
    *C. magdalenae* Kiener, 1845
*C. frigidus* Reeve, 1848
    *C. maltzanianus* Weinkauff, 1873
*C. fusco-olivaceus* Dautzenberg, 1937
*C. fulgetrum* Sowerby, 1834
    *C. scaber* Keiner, 1849
*C. fustigatus* Hwass, 1792
    *C. pulicarius* Hwass, 1792 - possible?
*C. generalis* Linnaeus, 1767
    *C. cinctus* Link, 1807
    *C. dux* Rod., 1798
    *C. monteiroi* Barros & Cunha, 1933
    *C. locumtens* Rod., 1798
    *C. ornatus* Rod., 1798
*C. geographus* Linnaeus, 1758
*C. glans* Hwass, 1792
    *C. tennuigranulata* Dautz., 1937
    *C. tenuistriatus* Sow., 1857
    *C. granulata* Dautz., 1937
*C. imperialis* Linnaeus, 1758
    *C. corona-ducalis* Rod., 1798
    *C. flavescens* Barros & Cunha, 1933
    *C. viridulus* Lam., 1810
    *C. queketti* A. E. Smith, 1906

*C. imperialis* Linnaeus, 1758 - continued
*C. nigrescens* Barros & Cunha, 1933
*C. regius* Rod., 1798
*C. legatus* Lamarck, 1810
*C. leopardus* Roeding, 1798
*C. aldrovandi* Dautz., 1937
*C. millepunctata* Lam., 1833
*C. pardus* Rod., 1798
*C. pardus* Link, 1807
*C. litoglyphus* Hwass, 1792
*C. inermis* Tinker, 1952
*C. lacinulatus* Kiener, 1845
*C. lithoglyphus* Rve., 1843
*C. lithoglyphus* Lam., 1810
*C. carpenteri* Crosse, 1865
*C. cinamomeus* Rod., 1798
*C. orleanus* Rod., 1798
*C. subcapitaneus* Link, 1807
*C. seychellensis* Nevill, 1874
*C. litteratus* Linnaeus, 1758
*C. brevis* Sow., 1840
*C. byssinus* Rod., 1798
*C. gruneri* Rve., 1844
*C. literatus* Born, 1778
*C lividus* Hwass, 1792
*C. monachos* Rod., 1798
*C. plebejus* Link, 1807
*C. sanguinolentus* Q. & G., 1834
*C. plebeius* Tomlin, 1937
*C. luteus* Sowerby, 1833
*C. nucleus* Rve., 1848
*C. violacea* Rve., 1844
*C. magnificus* Reeve, 1843
*C. magus* Linnaeus, 1758
*C. adansoni* Sow., 1857
*C. assimilis* A. Adams, 1853
*C. borneensis* Sow., 1866
*C. caesius* Rod., 1798
*C. carinatus* Swain., 1822
*C. circae* Sow., 1857
*C. indicus* Wein., 1873
*C. decurtata* Dautz., 1910
*C. consul* Boivin, 1864
*C. epistomium* Rve., 1844
*C. raphanus* Hwass, 1792
*C. rollandi* Bern., 1860
*C. signifer* Crosse, 1865
*C. striolatus* Kein., 1849
*C. tasmaniae* Sow., 1866
*C. ustulatus* Rve., 1844
*C. marmoreus* Linnaeus, 1758
*C. proarchithalassus* Rod., 1798
*C. proarchithalassius* Link, 1807

*C. marmoreus* Linnaeus, 1758 - continued
- *C. maculatus* Perry, 1811
- *C. crosseanus* Bernardi, 1861
- *C. equestris* Rod., 1798
- *C. toquatus* Rod., 1798
- *C. vidua* Rve., 1843
- *C. pseudomarmorius* Crosse, 1875

*C. miliaris* Hwass, 1792
*C. miles* Linnaeus, 1758
*C. moreleti* Crosse, 1858
- *C. elongatus* Rve., 1843
- *C. oblitus* Rve., 1849

*C. musicus* Hwass, 1792
*C. mustelinus* Hwass, 1792
- *C. melinus* Shikama, 1964

*C. nanus* Sowerby, 1833 .....sub-species of musicus Hwass, 1792
*C. nigropunctatus* Sowerby, 1857
*C. nussatella* Linnaeus, 1758
- *C. tenuis* Sow., 1834

*C. obscurus* Sowerby, 1833
- *C. halitropus* Bartsch & Rehder, 1943
- *C. obscura* Kien., 1845

*C. pertusus* Hwass, 1792
- *C. amabilis* Lam., 1810
- *C. antillarum* Rod., 1798
- *C. inquinatus* Rve., 1849
- *C. festivus* Dill., 1817

*C. pennaceus* Born, 1778
- *C. marmoricolor* Melvill, 1900
- *C. ommaria* Hwass, 1792
- *C. magoides* Melvill, 1900
- *C. rubiginosus* Hwass, 1792
- *C. racemosus* Sow., 1873
- *C. madagascaiensis* Sow., 1858
- *C. praelatus* Hwass, 1792

*C. planorbis* Born, 1778
- *C. reevei* Kein., 1847

*C. pohlianus* Sowerby, 1887
*C. polyglotta* Weinkauff, 1874
*C. pulicarius* Hwass, 1792
- *C. fustigatus* Hwass, 1792
- *C. punctulatus* Rod., 1798

*C. quercina* Lightfoot, 1786
- *C. albus* Shaw, 1815
- *C. cingulum* Gmel., 1791
- *C. ponderosus* Sow., 1858
- *C. quercinus* Hwass, 1792

*C. rattus* Hwass, 1792
- *C. taitensis* Hwass, 1792
- *C. taheitensis* Rve., 1843
- *C. viridis* Sow., 1857
- *C. tahitensis* Mermod, 1947

CONIDAE - continued

*C. retifer* Menke, 1829
    *C. solidus* Sow., 1834
    *C. sulcata* Sow., 1834
*C. rubrapapillosa* Dautzenberg, 1937
*C. sanguinolentus* Quoy & Gaimard, 1834
    *C. lividus* Hwass, 1792 .....possibly
*C. scabriusculus* Dillwyn, 1717
    *C. fabula* Sow., 1833
*C. sponsalis* Hwass, 1792 .....possible sub-species of musicus Hwass, 1792
*C. stercusmuscarum* Linnaeus, 1758
    *C. sabella* Rod., 1798
    *C. arenatus* Rod., 1798
*C. striatus* Linnaeus, 1758
    *C. floridus* Sow., 1858
*C. sugillatus* Reeve, 1844
*C. suturatus* Reeve, 1844
    *C. ambiguus* Rve., 1844
    *C. hammatus* Bartsch & Rehder, 1943
    *C. hawaiensis* Kaicher, 1956
    *C. turbinatus* Sow., 1858
*C. tenuisulcatus* Sowerby, 1870
*C. terebra* Born, 1778
    *C. albeolus* Rod., 1798
    *C. terebellum* Marti, 1951
*C. tessulatus* Born, 1778
    *C. lithostatus* Dill., 1817
    *C. pavimentum* Rod., 1798
    *C. tesselatus* Born, 1780
    *C. edaphus* Dall, 1910
*C. textile* Linnaeus, 1758
    *C. enetrios* Sow., 1882
    *C. osullivani* Ire., 1931
    *C. rete-aureum* Perry, 1811
    *C. auriger* Rod., 1798
    *C. gloria-maris* Rod., 1798
    *C. gloria-maris* Perry, 1811
    *C. tigrinus* Sow., 1858
    *C. vicarius* Lam., 1810
    *C. verriculum* Rve., 1843
    *C. concatenatus* Kiener, 1849
    *C. scriptus* Sow., 1857
    *C. canonicus* Hwass, 1792
    *C. condensus* Sow., 1866
    *C. undulatus* Solander, 1786
    *C. abbreviata* Dautz., 1937
    *C. loman* Dautz., 1937
    *C. ponderosa* Dautz., 1932
*C. tulipa* Linnaeus, 1758
*C. undata* Dautzenberg, 1937
*C. varius* Linnaeus, 1791
    *C. annularis* Rod., 1798
    *C. interruptus* Wood, 1828
    *C. radula* Rod., 1798

CONIDAE - continued

*C. vexillum* Gmelin, 1791
*C. sulphuratus* Kiener, 1845
*C. canonicus* Rod., 1798
*C. virgo* Linnaeus, 1758
*C. flavocinctus* Link, 1807
*C. vitulinus* Hwass, 1792
*C. vulpinus* Sch. & Wag., 1829

792 TEREBRIDAE - The Terebridae, or auger shells, are found worldwide and almost exclusively in tropical waters. The family consists of the following genera: Terebra, Duplicaria, Hastula, and Impages. They resemble the Turitellidae, but are not quite as slender, being long, many-whorled as well as slender. They prefer fine sandy bottoms under which they burrow shallowly. They also differ from the Turitellidae in having a short anterior canal or notch and a narrow aperture; sculptured more axially than spirally; having one or two folds on the columella; and the operculum, a corneous one, having normally a terminal nucleus. Of the four genera, Terebra lacks a radula. All are carnivorous and of two sexes.

*Terebra affinis* Gray, 1834
*T. striata* Q. & G., 1833
*Hastula albula* (Menke, 1843)
*H. casta* Hinds, 1844
*Terebra archimedis* Deshayes, 1859
*Terebra areolata* (Link, 1807)
*T. muscaria* Lam., 1822
*Terebra argus argus* Hinds, 1844
*T. argus brachygyra* Pils., 1921
*Terebra babylonia* Lamarck, 1822
*T. acus* Gmel., 1791 (n.o.)
*Terebra cerethina* Lamarck, 1822
*T. pulchra* Hinds, 1844
*T. spaldingi* Pils., 1921
*Terebra chlorata* Lamarck, 1822
*T. knorri* Gray, 1834
*Terebra cingulifera* Lamarck, 1822
*T. punctulata* Sow., 1825
*T. punctatostriata* Gray, 1834
*T. chinensis* Desh., 1859
*T. columnaris* Desh., 1859
*Terebra columellaris* Hinds, 1844
*T. propingua* Pease, 1869
*Terebra crenulata* (Linnaeus, 1758)
*T. varicosum* Gmel., 1791
*T. crenulata fimbriata* Desh., 1857
*T. interlineata* Desh., 1859
*Terebra dimidiata* (Linnaeus, 1758)
*T. carnea* Perry, 1811
*T. splendens* Desh., 1859
*Duplicaria duplicata* (Linnaeus, 1758)
*D. lamarckii* Kein, 1838
*D. reevei* Desh., 1859

*Duplicaria evoluta* (Deshayes, 1859)
*Terebra felina* (Dillwyn, 1817)
*T. tigrinum* Gmel., 1791
*T. suffusa* Pease, 1869
*Terebra flavescens* Deshayes, 1859
*Terebra flavofasciata* Pilsbry, 1921
*Terebra funiculata* Hinds, 1844
*T. angustior* Pils., 1921
*Terebra guttata* (Roeding, 1798)
*T. oculata* Lam., 1822
*T. oculatum* Dill., 1817
*T. loroisi* Desh., 1859
*T. sculptilis* Pease, 1869
*Impages hectica* (Linnaeus, 1758)
*I. niveum* Gmel., 1791
*I. edentulum* Gmel., 1791
*I. bifasciatum* Dill., 1817
*I. caerulescens* Lam., 1822
*Terebra kilburni* Burch, 1965
*Terebra laevigata* Gray, 1834
*Hastula lanceata* (Linnaeus, 1767)
*Terebra ahuensis* Pils., 1921
*Hastula lauta* (Pease, 1869)
*H. strigilata sumatrana* Thiele, 1925
*Terebra maculata* (Linnaeus, 1758)
*T. maculosa* Pfeiffer, 1840
*Terebra monilis* Quoy & Gaimard, 1832
*Terebra montgomeryi* Burch, 1965
*Terebra nebulosa* Sowerby, 1825
*Decorihastula nebulosa* Habe, 1962
*Terebra paucistriata* (E. A. Smith, 1873)
*Parviterebra paucivolvis* Pilsbry, 1921
*Terebra pertusa* (Born, 1780)
*T. undata* Blain., 1829
*T. bermonti* Lorois, 1857
*T. andamanica* Melvill & Sykes, 1898
*Terebra plumbea* (Quoy & Gaimard, 1832)
*T. bourguignati* Desh., 1859
*T. celindonta* Mel. & Sykes, 1898
*T. hoffmeyeri* Abbott, 1952
*Terenolla pygmaea* (Hinds, 1844)
*Duplicaria raphanula* (Lamarck, 1822)
*D. caledonica* Sow., 1909
*Hastulina solida* (Deshayes, 1857)
*Hastula aciculatum* Gmel., 1791 (n.o)
*H. clarkei* H. Smith, 1912
*Hastulina strigilata* (Linnaeus, 1758)
*H. acutissimum* Rod., 1798
*H. verreauxi* Desh., 1857
*Terebra succincta* (Gmelin, 1791)
*T. fissum* Rod., 1798
*T. cancellata* Q. & G., 1832
*T. undatella* Desh., 1859

TEREBRIDAE - continued

*Terebra subulata* (Linnaeus, 1767)
*T. tigreum* Mont., 1810
*T. fusca* Perry, 1811
*Terebra textilis* Hinds, 1844
*Terebra undulata* Gray, 1834
*T. approximata* Desh., 1859
*T. laevior* Schep., 1913

ARCHITECTONICIDAE - The sundial shells are in the form of a much flattened cone with a centrally located wide umbilicus open all the way to the apex. The operculum is normally corneous, but in a few species it is calcareous; the aperture is fairly small. They prefer weedy sand in the intertidal zone.

*Architectonica dorsuosus* Hinds
*Architectonica perspectiva* (Linnaeus, 1758)
*A. maculatum* Link, 1807
*A. formosum* Hinds, 1844
*A. australe* Phil., 1849
*A. incisum* Phil., 1849
*A. zonatum* Phil., 1849
*A. striatum* Soul., 1852
*Philippia radiata* (Roeding, 1798)
*P. hybrida* Gray, 1847
*P. cingulum* Kien., 1839
*P. subconcolor* Martens, 1880
*P. stipator* Ire., 1931
*Heliacus variegatus* (Gmelin, 1791)
*Truchus perspectiviunculus* Dill., 1817

EPITONIIDAE - The wentletraps, or staircase shells, are medium sized, elongated conically with the whorls sculptured with varice-like ribs axially and occasionally slender lamellae. The shells are normally white, but a light brown species occurs. The aperture is usually round with a round, dark brown, corneous or horny operculum. The beasties live in weedy coral-sand, in shallow water, and are carnivorous, feeding on sea anemones.

*Amaea magnifica* (Sowerby, 1844)
*Epitonium (Hirotoscala) pyramidalis* (Sowerby, 1844)
*Cirsotrema variocosum* (Lamarck, 1822)

JANTHINIDAE - These animals are pelagic and their shells quite fragile. Violet-purple in color, they have a low spire with a large body whorl and large aperture. There is no operculum.

*Janthina janthina* (Linnaeus, 1758)
*J. planispira* Ad. & Rve., 1848
*J. balteata* Rve., 1858
*J. depressa* Rve., 1858

TRIPHORIDAE - This interesting little family is classed as a separate sub-family of the Cerithiidae by some authors, whereas still others include the triphorids with the genera Cerithiopsis, Bittium, etc., in the

TRIPHORIDAE - continued

Cerithiopsidae. The triphorids are small shells, and coiled sinistrally. The aperture is small and round with an anterior canal; in some species the posterior canal is also formed. The shell is quite long with many whorls.

*Triphora candidus* (Hinds, 1843)
*Iniforis concors* (Hinds, 1843)
*Iniforis formosula* (Hervier, 1897)
*Triphora fulvescens* (Hervier, 1897)
*Mastonia limosa* (Jousseaume, 1884)
*M. bowenensis* Laseron, 1958
*Triphora melantera* (Hervier, 1897)
*Mastonia rubra* (Hinds, 1843)
*Mastonia ustulata* (Hervier, 1897)
*Triphora torquata* Hedley, 1902

PYRAMIDELLIDAE - These are usually small to very small shells, living in coral sand or on a coral rubble substrate. They have a dull, smooth, and translucent periostratum, and a thin, horny operculum. They are elongate with numerous whorls, and either smooth or variously sculptured. The columella has one to three folds with a thin outer lip.

*Pyramidella acus* (Gmelin, 1791)
*P. guttata* Link, 1807
*P. musculosa* Lam., 1816
*P. maculosa* Lam., 1822
*P. punctata* Sch. & Wag., 1829
*Otopleura auriscati* (Holten, 1802)
*Pyramidella plicata* Lam., 1816
*Otopleura mitralis* (A. Adams, 1855)
*O. propinqua* A. Adams, 1855
*O. variegata* A. Adams, 1855
*O. australis* Laseron, 1959
*Otopleura pupaeformis* (Holten, 1802)
*Pyramidella sulcata* (A. Adams, 1855)
*Pyramidella terebellum* (Mueller, 1774)
*P. terebelloides* A. Adams, 1854
*Turbonilla (Lancea) aulica* Dall & Bartsch, 1906
*Chemnitzia varicosa* Adams, 1855

ACTEONIDAE - These are small thin ovate shells with a short spire. The columella has one or two folds and a long aperture. As in most of the Acteonacea, the outer lip is usually thin. The operculum is horny. They live in muddy or clean coral sand.

*Pupa alveola* (Souverbie, 1863)
*P. cinerea* Watson, 1886
*P. thaanumi* Pils., 1917
*Smaragdinella calyculata* Brod. & Sow.,
*Punctacteon flammeus* (Gmelin, 1791)
*Pupa nitidula* (Lamarck, 1816)

ACTEONIDAE - continued

*Solidula (Strigopupa) strigosa* (Gould, 1859)
*Buccunulus strigosus* Gould, 1859
*Tornatella suturalis* Rve., 1868
*Buccinulus fraterculus* Dunker, 1882
*Pupa strigosa* Habe, 1850
*Pupa sulcata* (Gmelin, 1791)
*P. glabra* Rve., 1842

HYDATINIDAE - These bubble shells are small to moderate in size, thin and fragile with a sunken spire and expanded, outer, thin lip. The sutures are deep, and the last whorl is greatly expanded.

*Amplustrum amplustre* (Linnaeus, 1758)
*A. fasciatum* Schum., 1817
*A. pulchella* Swain., 1840
*A. thalassiarchi* A. Adams, 1855
*Micromelo guamensis* (Quoy & Gaimard, 1824)

SCAPHANDRIDAE - These small (one inch) shells are generally white, and cylindrical to ovate in shape. The spire is small, either shallow or concealed. The surface is smooth or slightly striated with the vertex either truncated or perforated. The aperture with few exceptions is long and narrow. They are found on both muddy and sandy bottoms, down to three hundred feet.

*Acteocina voluta* (Quoy & Gaimard, 1832)

AGLAJIDAE (CHELIDONEURIDAE) - Members of this family closely resemble the Philinidae and Scaphandridae, except they are maculated in assorted colors. The shell is considered to be internal, as it is completely covered by the mantle and parapodia. They are found on eel grass and gravelly bottoms in the intertidal zone.

*Aglaja orientalis* Babe, 1949
*Chelidonura fulvipunctata* Baba, 1938
*Chelidonura hirundinina* (Quoy & Gaimard, 1832)
*Chelidonura inornata* Baba, 1949
*Philinopsis gardineri* (Eliot, 1903)
*Philinopsis pilsbryi* (Eliot, 1899)

GASTROPTERIDAE - The shell is internal, with a minute, nautiloid, calcareous spire. These small sea-slugs swim through the water using the two large winglike, fleshy flaps on either side of the body. They usually inhabit quiet bays.

*Gastropteron flavum* Tokioka & Baba, 1964
*Sagaminopteron nigropunctatum* Carlson & Hoff, 1973
*Sagaminopteron biealbum* Carlson & Hoff, 1973

RUNCINIDAE - These minute animals, one-eighth to one-quarter inch, have no shell or parapodia, and the body is lanceolate.

*Ilbia ilbi* Burn, 1963
*Metaruncina setoensis* Baba, 1954

BULLIDAE - These are similar to the Hydatinidae but the spire is inverted and completely surrounded by the body whorl. The outer lip extends above the apex narrowly, and expands below. They, too, live in coral sand.

*Bulla ampulla* Linnaeus, 1758
*B. ovumvanelli* Rod., 1798
*B. ampullastriata* Rod., 1798
*B. columbellaris* Menke, 1854
*B. bifasciata* Menke, 1854
*B. trifasciata* Sow., 1868
*B. selina* Ire., 1929
*Bulla peasiana* (Pilsbury, 1894)
*Bulla vernicosa* Gould, 1859
*B. ovula* Sow., 1868
*B. subtropicalis* Powell, 1965

ATYIDAE (HAMINOEIDAE) - These are similar to the Bullidae, but the shells are thinner and often translucent. The spire is also concealed, and the upper portion of the upper lip is often detached from the apex. They live in the sand in the intertidal zone.

*Haminoea cymbalum* Quoy & Gaimard,
*Atys naucum* (Linnaeus, 1758)
*A. cymbulus* Mont., 1810
*A. striatulum* Schum., 1817
*A. ferruginosa* A. Adams, 1850
*A. ovoidea* A. Adams, 1850
*A. obovata* Menke, 1854
*A. kuhnsi* Pils., 1917
*A. strigata* Pils., 1917
*Atys (Aliculastrum) cylindricus* (Helbling, 1779)
*A. solida* Brug., 1789
*A. elongata* A. Adams, 1850
*A. succisa* A. Adams, 1850
*Haminoea rotundata* A. Adams, 1854
*Haminoea simillima* Pease, 1868

SMARAGDINELLIDAE - These are also small shells, similar in shape and habitat to the two preceding families but differ internally.

*Phanerophthalmus luteus* (Quoy & Gaimard, 1832)

OXYNOIDAE - The shell is internal. It is bubble-like, thin, and fragile, with a large body whorl. The animal lives in shallow water in seaweed and is a nonswimmer.

*Lobiger souverbiei* O. Fisher, 1856
*Oxynoe viridis* (Pease, 1863)
*Volvatella fragilis* Pease, 1860

ELYSIIDAE - (other authors place these animals in the superfamily Plakobranchiacea, family Plakobranchidae, and consider Elysiidae a synonym.) The body appears sluglike and swollen medially. The parapodia are used in swimming. They live on seaweeds in shallow seas.

*Elysia bayeri* Marcus, 1965
*Elysia grandifolia* Kelaart, 1859
*Elysia halimedae* Macnae, 1954
*Elysia livida* Baba, 1955
*Elysia obtusa* Baba, 1938
*Elysia marginata* (Pease, 1871)
*Placobranchus ocellatus* Van Hasselt, 1824

CALIPHYLLIDAE - This, like the preceding family, is also a slug-like animal, having an internal shell with dorsal cerata. The rhinophores are more flowerlike than those of the following family.

*Branchophyllum orientale* (Kelaart, 1859)
*Cyerce elegans* Bergh, 1888
*Cyerce nigricans* (Pease, 1866)

STILIGERIDAE (HERMAEIDAE) - This animal is similar to the preceding, with its foot usually rounded in front. It has two simple rhinophores and inhabits quiet bays.

*Costasiella formicaria* Baba, 1959
*Hermaea cremoniana* Trinchese, 1893

JULIIDAE - These shells are minute, with two large external shelly valves. The animal is long and narrow and usually green in color.

*Julia exquisita* (Gould, 1862)

APLYSIIDAE - These animals are called sea hares from their fancied resemblance to bunnies. They do not have an external shell but a twisted plate found inside the body. Guam's sea hare is a large slug-like animal, living in seaweed in depths between three and ten feet.

*Dolabella auricularia* (Lightfoot, 1786)
*D. callosa* Lam., 1801
*D. auricula* Baba, 1949
*Dolabrifera dolabrifera* Linnaeus, 1758
*Stylocheilus longicauda* (Quoy & Gaimard, 1824)
*Aplysia parvula* Guilding in Morch, 1863
*Dolabella scapula* (Martyn, 1784)
*Phyllaplysia taylori* (Dall, 1900)

PLEUROBRANCHIDAE - A tough mantle dorsum as large as the foot covers the internal, thin, calcareous, oblong shell. The small shell resembles a flattened abalone without holes. Rhinophores and a buccal veil are present at the anterior end.

*Berthellina citrina* (Ruppell & Leuckart, 1828)
*Berthellina delicata* (Pease, 1868)

NUDIBRANCHIA - Although classed as molluscs, these beautiful little animals are shell-less and without true ctenidial gills. There are a great variety of shapes with many different ornamentations, colorations, and intertwining evolutionary patterns. Identification of individual genera and species by the casual collector is difficult and requires training and equipment such as microscopes for radular examination. Some of the nudibranchs are only crawlers, such as the Doridiidae, whereas others are sprightly swimmers such as the Hexabranchidae. Because of the aforementioned complexities in identification, this paper will not describe individual families in this Order, but refers the reader to such texts as Abbott's Seashells," 2nd Edition, for excellent descriptions.

DORIDIDAE

*Asteronotus cespitosus* (Van Hasselt, 1824)
*Casella atromarginata* (Cuvier, 1804)
*Chromodoris aureopurpurea* Collingwood, 1881
*Chromodoris australis* Risbec, 1928
*Chromodoris clitonota* Bergh, 1905
*Chromodoris coi* (Risbec, 1956)
*Chromodoris decora* (Pease, 1860)
*Chromodoris decorata* (Risbec, 1928)
*Chromodoris fidelis* (Kelaart, 1858)
*Chromodoris lilacina* (Gould, 1852)
*Chromodoris lineolata* (Van Hasselt, 1824)
*Chromodoris multituberculata* (Baba, 1953)
*Chromodoris quadricolor* (Ruppell & Leuckart, 1831)
*Chromodoris vibrata* (Pease, 1860)
*Discodoris concinna* (Alder & Hancock, 1864)
*Doriopsis granulosa* Pease, 1860
*Doriopsis viridis* Pease, 1860
*Doriopsis pecten* (Collingwood, 1881)
*Doris aspera* Risbec, 1928
*Halgerda apiculata* (Alder & Hancock, 1866)
*Halgerda aurantiomaculata* (Allan, 1932)
*Halgerda* cf. *maculata* (Elliot, 1906)
*Halgerda rubra* Bergh, 1905
*Halgerda tessellata* (Bergh, 1880)
*Hypselodoris hilaris* (Bergh, 1890)
*Hypselodoris infucata* (Ruppell & Leuckart, 1828)
*Hypselodoris* cf. *kulonba* Burn, 1965
*Hypselodoris tryoni* (Garrett, 1873)
*Kentrodoris funebris* (Kelaart, 1859)
*Miamira* cf. *nobilis* Bergh, 1875
*Noumea decussata* Risbec, 1928
*Platydoris formosa* (Alder & Hancock, 1866)
*Platydoris scabra* (Cuvier, 1804)
*Trippa echinata* (Pease, 1860)
*Trippa osseosa* (Kelaart, 1859)

HEXABRANCHIDAE

*Hexabranchus marginatus* (Quoy & Gaimard, 1832)

DENDRODORIDAE

*Dendrodoris coronata* Kay & Young, 1969
*Dendrodoris elongata* Baba, 1936
*Dendrodoris mollis* (Risbec, 1928)
*Dendrodoris nigra* (Stimpson, 1856)
*Dendrodoris tuberculosa* (Quoy & Gaimard, 1832)

POLYCERIDAE

*Aegirus leuckarti* Verany, 1853
*Gymnodoris alba* (Bergh, 1877)
*Gymnodoris ceylonica* (Kelaart, 1858)
*Gymnodoris citrina* (Bergh, 1877)
*Gymnodoris okinawae* Baba, 1936
*Nembrotha luteolineata* Baba, 1936
*Nembrotha morosa* Bergh, 1877
*Roboastra gracilis* (Bergh, 1877)

GONIODORIDIDAE

*Goniodoris joubini* Risbec, 1938

VAYSSIEREIDAE

*Okadaia elegans* Baba, 1931

PHYLLIDIIDAE

*Freyeria pustulosa* Gray, 1853
*Phyllidia annulata* Gray, 1853
*Phyllidia elegans* Bergh, 1869
*Phyllidia loricata* Bergh, 1873
*Phyllidia trilineata* Cuvier, 1804
*Phyllidia tuberculata* Baba, 1930
*Phyllidia variabis* (Collingwood, 1881)
*Phyllidia vericosa* Lamarck, 1801

ARACUNIDAE

*Marianina rosea* Pruvot-Fol, 1930

BORNELLIDAE

*Bornella simplex* (Eliot, 1904)

TRITONIIDAE

*Tritoniopsilla alba* Baba, 1949

FAVORINIDAE

*Cratena ornata* (Baba, 1937)
*Favorinus japonicus* Baba, 1949
*Pteraeolidia ianthina* (Angas, 1864)

GLAUCIDAE

*Glaucus atlanticus* Forster, 1777

TERGIPEDIDAE

*Embletonia gracile* Risbec, 1928

CUTHONIDAE

*Phestilla sibogae* Bergh, 1905

SIPHONARIIDAE - Superficially, this family resembles the Patellidae and Acmaeidae, but as they are pulmonates, they are unrelated to them. The shells are flat to cap-shaped. The muscle scar is horseshoe shaped and open on the right, where the siphonal groove is located. They inhabit the rocks of the intertidal zone.

*Siphonaria normalis* Gould, 1846
- *S. amara* Rve., 1856
- *S. lirata* Rve., 1856
- *S. nuttalli* Hanley, 1858
- *S. chirura* Pils., 1921

ELLOBIIDAE - The members of the air-breathing order Pulmonata are inhabitants of marshes, swamps, mud flats, and even on land, where they hide under wet palm fronds and damp coconut husks. Although air breathers, they still require moisture. Guam's various species are small, solid shells, with teeth on the columella. The siphonal canal is truncated.

*Melampus castaneus* (Muelfeldt, 1818)
*Pythia cecillei* Philippi,
*Melampus coffea* Kuster,
*Melampus flavus fasciatus* Deshayes, 1830
- *M. monile* Q. & G., 1832
- *M. taeniolatus* H. & J., 1854
- *M. fortis* Mousson, 1869

*Pythia lecithostoma* Reeve,
- *Melampus nuxcastanea* Kuroda, 1947

*Melania pantherina* Bush,
*Melampus scarabaeus* (Linnaeus, 1758)
- *M. pythia* Mueller, 1774
- *M. helicina* Rod., 1798
- *M. imbrium* Mont., 1810
- *M. castaneus* Lesson, 1831
- *M. undatus* Lesson, 1831
- *M. pollex* Hinds, 1844
- *M. pantherina* A. Adams, 1851
- *M. savaiensis* Mousson, 1869

*Auriculastra ternatelliformis* Petit, 1842

LYMNAEIDAE - The branchiopulmonates are found in streams and ponds. Certain of this family act as intermediate hosts for parasitic worms and flukes. Guam's shell has an enlarged body whorl with large aperture and relatively small spire and a twisted columella.

*Galba viridis* Quoy & Gaimard,
*Lymnaea parvia* Martens,
*Lymnaea ollula* Gould,

PLANORBIDAE - The planorbs are small, flat coiled, fresh water snails. Guam's example is a light yellowish-brown in color.

*Gyraulus heimantium* Westerlund, 1883
*G. chinensis* Dunker,
*G. spirillus* Gould,

PARTULIDAE - These are more of the Pulmonata: air-breathing land dwellers, similar to the previous family.

*Partula fragilis* Ferrusac, 1821
*Partula gibba* Ferrusac, 1821
*Partula radiolata* Pfeiffer, 1846
*Partula salifana* Crampton, 1925

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ACHATINIDAE - These garden pests of the Pulmonata are represented by a single species on Guam. They are medium sized shells, attaining to a length of five inches. They are ovate in form, and lack both an anterior and posterior canal. The columella is smooth. The animal originated in Africa and are eaten in certain areas, but as they may harbor parasites, they are not recommended to Guamanian gourmets. In the dry season they estivate, burrowing shallowly beneath the surface of the soil.

*Achatina fulica* Bowditch,

SUBULINIDAE - These small land dwellers--up to one-half inch in length--are elongate and have five whorls. The aperture is almost round. They are found under leaves in wet areas.

*Allopeas keyotoensis* Pilsbury & Hirase,
*Subulina octona* Bruguiere,

OLEACINIDAE - Still another member of the air breathing pulmonates, Guam's representative is a natural enemy of Achatina fulica and was imported for the purpose of controlling them. Our single representative of the family is a smallish shell, up to two inches in length. It is pink in color and not as globose as its enemy. It too requires moisture and hides from the direct sunlight.

*Englandina rosea* Ferrusac

STREPTAXIDAE - These cannibal snails were also imported to combat Achatina fulica. The shells are white, helicoid in shape, with very shallow longitudinal sculpturing. The aperture is small and ovate. It is carnivorous and has dart like radular teeth.

*Gonaxis kibweziensis* (E. A. Smith, 1884)

## ADDENDUM

To follow "Calyptraeidae" on page 14:

XENOPHORIDAE - The carrier shells are flattened, trochoid-shaped, with a concave base. The aperture on the base is large, with a thin outer lip, and the columella curves in almost a semicircle around the aperture. The adults have no umbilicus, and the operculum is corneous with an off-center nucleus. The shells are unique in that the animals pick up other small shells and shell fragments, stones, pieces of coral, etc. and cement them on to the edge of the shell. Once an individual animal picks on a particular type of item to cement on to itself, it apparently stays with that particular type of camouflage. The animals are usually found in deep water

*Xenophora turrida* Kuroda & Ito,

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