

Pictorial Key to Genera of Miniature Gastropods and Scaphopods of North and Central America

by Margaret ("Peggy") Williams

This key is intended to help the collector begin identifying miniature gastropod shells, by giving a choice of possible groups to be searched for a final identification. I have listed genus names, where at least some representatives of that genus resemble the generalized drawing. Be aware that the drawings are generalized and not precisely like any particular genus or group.

I have excluded deep water (over 30 fathoms) groups and large-shelled groups. The genus names listed are from Abbott's *American Seashells* and Keen's *Sea Shells of Tropical West America* and so I may have left out some that have no representatives in the Americas. (An asterisk * after the genus name indicates that it appears only in *American Seashells*.) There are also many changes in nomenclature since these works were published, but reference to them should still be sufficient to place a shell in the correct group. General shapes do hold true for species in a genus throughout the world, so this guide should be useful for worldwide identification.

All listings have mature representatives under one inch in length. Many are as small as one to four millimeters. The general size pre-

cedes the genus name. Following the genus listing are comments to help in selecting a genus for further investigation. I have tried to generalize terms in these comments and limit them to a few necessarily technical words which are listed in the glossary at the end. Sometimes I have included a drawing of the aperture, where it is unique to a genus. (All miniatures must be studied with the aid of some magnification, the greater the better. Such features on a 4 mm shell cannot be seen with the naked eye!)

Some genera are included in several places, since representatives may vary in shape. I have tried to be thorough and give every possible reference, in case your shell differs slightly from the usual or you see a different shape than I do. You should try several solutions until you are sure you have the correct name for your shell.

All large shells have juvenile specimens in this size range, but they are not included in this guide (except for fig. 48). If the specimen has relatively large first whorls (at its very tip) and very few whorls, it is probably a juvenile.

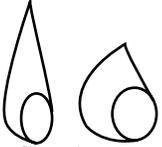
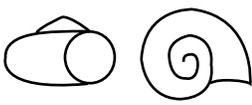
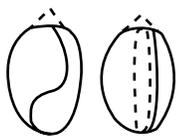
How To Use This Key

Select a shell to be identified. Starting with this page, choose the figure (1-7) which you think looks most like the shell. Following the instructions beside the figure, look up the next figure number mentioned (you may have several choices). Again determine the figure that seems most like your shell, then read the descriptions of genera and choose one to look up in the book. From there you are on your own. You may have several genera to choose from and have to study descriptions and figures in the book until you can find the actual shell name.

There is a glossary and diagram at the end of the key to help you understand the terminology used in this key and in the books. You should study them until you are familiar with these terms, since they are commonly used in shell identification.

If you find you use this key often, you might like to write page numbers of the book you most use next to the genus names, so you don't have to use the book's index all the time!

KEY

- | | |
|---|--|
| 
fig. 1 | 1. Shell openly or loosely coiled.
See figs. 8, 9 |
| 
fig. 2 | 2. Completely open on ventral (bottom) side.
See fig. 10 |
| 
fig. 3 | 3. Tubular, open on one or both ends.
See figs. 11-15 |
| 
fig. 4 | 4. Conical; slender or fat, with high or low spire.
See figs. 16-41, 50, 51 |
| 
fig. 5 | 5. Flattened, with wide, gaping mouth.
See figs. 40-43 |
| 
fig. 6 | 6. Tightly coiled and flattened.
See fig. 44 |
| 
fig. 7 | 7. Aperture as long as or nearly as long as the shell, either on the side or in the middle.
See figs. 45-56 |
| | 7a. Sinistral : opening on left, instead of usual right (dextral) side:
Genus Blauneria (size = 1/4")
Genus Trifora (size = 1/4") |

Size Genus or Family Description



fig. 8

1/2"-1/4" **Nystiella** : openly coiled.



fig. 9

1"-1/4" **Siliquaria**: with a series of tiny holes in a long row along the shell.

1"-1/4" **Vermicularia**: begins tightly coiled, later coils straightened out.

Family Vermetidae: in massive colonies or solitary.

1"+-1/4" **Spiroglyphus (Dendropoma)**

1"+-1/4" **Serpulorbis**

1/2"-1/4" **Petalococonchus**

1"+-3/4" **Vermetus***

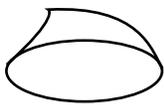


fig. 10

1"-1/2" **Calyptraea**: with "cup" attached to inside of shell.

1"+-1/2" **Capulus**: apex curled over.

1"+ **Carinaria**: very fragile. pelagic.

1"-1/2" **Cheilea**: with interior "cup" at apex.

1"-1/4" **Crepidula**: with interior "shelf" across half of shell.

1"-3/4" **Crepipatella**: with internal "deck" on one side.

1"+-3/4" **Crucibulum**: with interior "cup"

1"-1/2" **Hipponix**: shell heavy, cap-shaped, ridged.

3/4"-1/2" **Phenacolepas**: apex turns backward.

1"+-1/2" **Siphonaria**: muscle scar on inside with

3/4"-1/4" **Trimusculus**: opening to side, not end. Shell

1/2"-1/4" **Williamia**: with groove on side, not evenly oval.

Families of "limpets"

Acmaeidae

***Pepetellidae**

Cocculinidae

Patellidae

Fissurellidae



fig. 11

1"+-3/4" **Dentalium**: smooth or ribbed. Most white.



fig. 12

3/4"-1/4" **Cadulus**: smooth. most white.



fig. 13

1/4" **Caecum**: most white.



fig. 14

1/4" **Caecum** & relatives: ribbed, spirally or longitudinally. Most white.



fig. 15

1"-1/2" **Clio**: open end wider. keeled. fragile.

1"+-1/2" **Hyalocylis**: fragile, closed on end.

1"+-1/2" **Styliola**: conical, closed on one end. One long keel.

Pteropoda: all pelagic.

Size Genus or Family Description



fig. 18

3/4"-1/4" **Bittium**: no umbilicus. ribbed or spiral sculpture. (see fig. 20b)

1/4" **Cerithiopsis**: beaded. white or brown.

3/4"-1/2" **Eumetula***: spire straightish. sutures indented. sculptured.  fig. 18a

3/4"-1/4" **Metaxia**: nodulose. suture indented.  fig. 18b

3/4"-1/4" **Peristichia**: umbilicus chinklike. beaded spirals.

1/2"-1/4" **Seila**: spiral sculpture only. brown.

3/4"-1/4" **Triptychus**: no umbilicus. corded.

1"+-1/4" **Turritella** & relatives: not umbilicate. spiral scratches or carinated.



fig. 19

1"+-3/4" **Amaea**: ridge at base of body whorl. cancellate.

1"+-1/2" **Family Cerithiidae**: whorls very convex. when mature, outer lip thickened and flaring, squarish.

1/2"-1/4" **Mathilda**: umbilicus chinklike. beaded spiral cords. aperture squarish.

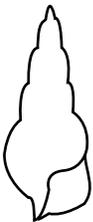


fig. 20

3/4"-1/2" **Batillaria**: no umbilicus. corded and beaded.  fig. 20a

3/4"-1/4" **Bittium**: no umbilicus. corded and beaded.  fig. 20b

1/4" **Cerithiopsis**: beaded. brown. siphonal canal twisted.  fig. 20c

1"+-3/4" **Cerithium** & **Liocerithium***: with ribs and spiral sculpture. siphonal canal twisted.  fig. 20d

1"-1/2" **Pyramidella**: smoothish, with impressed sutures. 3 folds on columella.  fig. 20e

1/2" **Ruthia***: a few axial ribs, spiral cords. outer lip toothed.  fig. 20f

1/4" **Stilifer**: small, globose, last whorls especially bulbous.  fig. 20g

1"+-1/4" **Terebra**: slender, sutures usually clear and impressed. siphonal canal open.

1"+-1/4" **Family Turridae**: sinus generally U-shaped, on shoulder. siphonal canal open.  fig. 20h

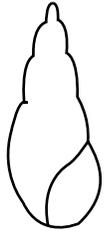


fig. 21

- | Size | Genus or Family | Description |
|-----------|----------------------------|---|
| 3/4"-1/4" | Acirsa : | fine spiral striae. may be ribbed as well |
| 1/4" | Alaba : | thin. ribbed and with swollen former varices. |
| 1/4" | Alabina (Finella) : | very small umbilicus. varied sculpture. |
| 1"+-3/4" | Amaea : | ridge at base of body whorl. cancellate. |
| 1/4" | Amphithalamus : | tiny. smooth but for faint peripheral cord. |
| 1/4" | Athleenia : | minute. thin. whorls strongly shouldered. |
| 1/4" | Barleeia : | stubby, with rounded whorls. smoothish. no umbilicus. |
| 1/2"-1/4" | Benthonella : | thin. white, polished. whorls well-rounded. deep-sea. |
| 1/4" | Cingula : | smooth. rounded whorls. slitlike umbilicus. |
| 1/4" | Nannoteretispira : | smooth. translucent white. similar to Truncatella. |
| 3/4"-1/4" | Odostomia : | white. smooth or cancellate. fold on upper columella. |

(See fig. 17c)

- | | | |
|-----------|----------------------|--|
| 1/4" | Onoba* : | spiral striae. |
| 1"-1/4" | Opalia : | aperture round. swollen axial ribs extending over sutures. |
| 3/4"-1/4" | Peristichia : | white. spirally corded or cancellate. one spiral cord on base. columella smooth. |
| 1/4" | Rissoella : | tiny. thin. whitish. whorls inflated. |
| 1/2"-1/4" | Rissoina : | usually white.
ribs, strong or weak.
lip thickened. |
| 1/4" | Schwengelia : | elongate. strongly shouldered, with spiral cord on edge of shoulder. narrow umbilicus. |
| 1/4" | Stilifer : | globose. no umbilicus. last whorl especially bulbous. |
| 1/2"-1/4" | Truncatella : | translucent, glossy. delicate ribs. tallish. rounded whorls. tip often lost. live high on beach in drift line. |
| 1/2"-1/4" | Zebina : | white. smooth. lip like Rissoina (fig. 21a). |



fig. 21a



fig. 22

- | | | |
|-----------|------------------------------------|---|
| 1"+ | Colubraria (Tritonoharpa) : | with former varices on body.
Upper corner of aperture U-shaped.
parietal shield on inner lip. |
| 1"+-1/2" | Metula : | finely cancellate. aperture smooth. |
| 1"-1/2" | Mitra : | several folds on inner lip. |
| 3/4"-1/4" | Thala : | aperture like Mitra. beaded or cancellate. |



fig. 22a



fig. 22b

Family Turridae: sinus U-shaped, on shoulder. siphonal canal open.

- | | |
|-----------|---------------------|
| 3/4"-1/2" | Cerodrillia |
| 3/4"-1/4" | Crassispira |
| 3/4"-1/2" | Cymatosyrinx |
| 1"-1/2" | Drillia |
| 1/2"-1/4" | Globidrillia |

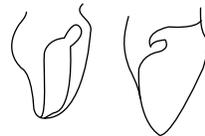


fig. 22c



fig. 23

- | | | |
|----------|-------------------------------|---|
| 1"+-1/2" | Epitonium & relatives: | most white, some umbilicate. most with strong, even winglike ribs and deep sutures. aperture round. |
| 1"-1/4" | Turbonilla : | straight-sided with heavy ribs and deep sutures. most white. see fig 17i. |

	Size	Genus or Family	Description	
	3/4"	Dolicholaturus:	aperture small, oval, toothed. swollen ribs crossed by spiral threads.	 fig. 24a
	1"+	Fusinus:	aperture more open, not toothed. ribbed and/or spirally sculptured.	 fig. 24b
	1"+-3/4"	Strombina:	thickened behind outer lip. outer lip toothed. Siphonal canal may be curved.	

fig. 24

Family Turridae: sinus deep and U-shaped. See fig. 22c

3/4"-1/4" **Miraclathurella**

1"+-1/2" **Carinodrillia**

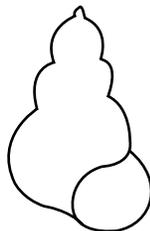
	1/2"-1/4"	Aclis:	tall. whorls rounded, sutures deep. polished. sculpture very light or absent. most whitish.
	1/4"	Assimineia:	squat, smooth. whorls well rounded. brackish water.
	1/2"-1/4"	Benthonella:	thin. whorls well rounded. smooth. white. deep-sea.
	1"+-1/2"	Epitonium & relatives:	most white. most with strong, even winglike ribs and deep sutures. aperture round.
	1/4"	Finella (Alabina):	small umbilicus. small, obscure sculpture. white.
	1/4"	Mirachelus:	coarse cancellate sculpture. fold on columella. white.
	3/4"-1/4"	Odostomia:	smooth or sculptured. sutures well impressed. most white. fold on columella. see fig. 17c.
	1"-1/2"	Pyramidella:	smoothish, with impressed sutures. 3 folds on columella. see fig. 17d.

fig. 25

	1"-1/2"	Bailya:	rounded whorls. strong sculpture.	 fig. 26a
	1"+-1/2"	Morula (Drupa):	colorful. strongly beaded. aperture toothed. fold on siphonal canal.	 fig. 26b
	3/4"-1/2"	Muricopsis; Ocenebra:	strong sculpture, varying. many with toothed aperture.	
	1"+-3/4"	Strombina:	thickened behind outer lip. siphonal canal may be curved.	
	3/4"-1/4"	Vexillum:	colorful. strong ribs and some spiral sculpture. aperture narrow. 3-5 folds on columella.	 fig. 26c

fig. 26

	3/4"	Aphera (Cancellaria):	heavy callus on body whorl next to aperture.	
	1"-3/4"	Bivetia*:	heavily cancellate. strong folds on columella	
	1"-1/2"	Enaeta:	thick, heavy shell. weak axial ribs. 5-8 weak folds on columella. outer lip swollen at center.	

fig. 27

fig. 27 continued next page

Size Genus or Family Description



fig. 27

Family Columbellidae

- 1"-1/2" **Amphissa**
 1"-1/2" **Anachis**
 1/2" **Bifurcium**
 1"-1/4" **Cosmioconcha**
 3/4"-1/4" **Mitrella**
 1"-1/4" **Nitidella**

solid shells, most smoothish or with smooth ribs. outer lips strong, usually toothed. many scratched around base.



fig. 27b

Family Turridae

- 3/4"-1/4" **Crassispira**
 1/2"-1/4" **Mangelia**
 1/2"-1/4" **Pyrgocythara**
- 1/2"-1/4" **Mitrolumna**
 1/2"-1/4" **Mitromorpha**

sinus U-shaped, on shoulder. siphonal canal open. ribbed or cancellate.



fig. 27c

without strong sinus. strong spiral or cancellate sculpture.



fig. 28

Family Columbellidae

- 1"-1/4" **Anachis**: smoothish.
 1"-3/4" **Columbella**: may be sculptured. colorful.
 3/4"-1/2" **Microcithara***: ribbed at shoulder, fading below. spoutlike sinus.

3/4"-1/2" **Caducifer**: lip thick. heavy teeth make siphonal canal tunnel-like. this genus found in Caribbean, though not in *American Seashells*.

3/4" **Dolicholaturus**: aperture small, oval, toothed. see fig. 24a

1"-1/2" **Drupa (Morula)**: nodulose. aperture toothed deep inside.

1"+-1/2" **Mitra**: 3-7 teeth on columella. most sculptured with some pits.



fig. 29a

1"-1/2" **Phos**: strong axial and weaker spiral sculpture.

Family Columbellidae

3/4"-1/4" **Aesopus**: with spiral cords.

1"-1/4" **Anachis**: axial ribs

1"-1/4" **Cosmioconchus**: nearly smooth. spiral furrow just below suture.

3/4"-1/4" **Mitrella**: smoothish, with scratches at base. see fig 27b.

3/4"-1/4" **Nassarina**: strong ribs, strongly beaded. outer lip toothed.

1/4" **Zetekia***: cancellate

Family Turridae

1"-1/4" many genera of this family have this shape. see fig. 22c. sinus U-shaped on the shoulder. siphonal canal open. ribbed.



fig. 30

1"+-3/4" **Acanthina**: heavy. with fine teeth on inner lip.

1"+-3/4" **Cantharus**: cancellate. varix on outer lip. strong ribs. U-shaped sinus.

1"-1/2" **Coralliophila**: sturdy. strongly sculptured. many white, some with vivid color inside aperture.

1"+-1/2" **Cymatium**: strong varix on outer lip. teeth on both lips.

fig. 30 continued next page

Size Genus or Family Description



fig. 30

1"-1/2" **Drupa (Morula)**: nodulose. aperture toothed deep inside.
 3/4"-1/4" **Engina**: solid. beaded ribs. colorful. outer lip thick and toothed, aperture small.



fig. 30a

1"+ **Latiaxis**: strong spiral cords. most with strong spines at shoulder.
 1"-3/4" **Ptychatractus**: spirally corded. 2 or 3 weak teeth at columella base.
 1"-3/4" **Urosalpinx**: heavy. ribbed, with spiral sculpture.

Family Muricidae

1"-1/2" **Aspella**: chalky in color. pitted.
 1"-3/4" **Attiliosa**: sculpture weaker than most murex. outer lip toothed. inner lip smooth with well-developed edge.

1"-3/4" **Calotrophon**: strongly shouldered and ribbed, with spiral ridges. outer lip toothed.

1"-3/4" **Eupleura**: long, closed siphonal canal. two prominent, winglike varices. outer lip toothed.



fig. 30b

1"-1/2" **Favartia**: stubby with rounded ribs. siphonal canal closed.

1"-3/4" **Murexiella**: spined varices.

1"-3/4" **muricopsis**: strong teeth on outer lip. varix on lip.

3/4"-1/2" **Ocenebra**: ribbed. may be spirally sculptured or cancellate. Siphonal canal closed.



fig. 31

1"-1/2" **Aspella**: white, chalky. flattened, with two varices.
 1"-3/4" **Eupleura**: long, closed siphonal canal. two winglike varices
 1"-1/2" **Favartia**: 5-7 low, sculptured, frilly varices.

Subfamily Typhinae

3/4"-1/2" **Cinclidotyphis*** with tubular spines at periphery, tube opening into aperture.
 3/4"-1/2" **Pterotyphis**
 1"-1/2" **Typhis**

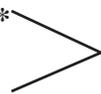


fig. 32

3/4"-1/4" **Acteon**: one fold on columella. spiral rows of depressed dots or scratches.



fig. 32a

1/2"-1/4" **Alexania**: fragile. smoothish. buff colored.
 1/4" **Alvania (Alvinia)**: small. thick. outer lip thickened.
 1/4" **Cynthia***: transparent. umbilicus with low ridge.
 1/4" **Floridiscrobs**: smooth, tiny. dark.
 1/4" **Hydrobia**: brown. rounded whorls. smooth.
 1/4" **Litiopa**: thin. brown. spiral scratches.

3/4"-1/4" **Mitrella**: smooth. spiral lines on base. see fig. 27b.

1"+-1/2" **Nucella**: heavy, with thickened lip. spiral cords and/or axial ribs.

1/4" **Pedipes & relatives**: with three pronounced teeth on inner lip.



fig. 32b

3/4"-1/4" **Planaxis**: smooth or with a few deep incised spiral lines.



fig. 32c

	Size	Genus or Family	Description
	3/4"-3	Admete & Agatrix:	heavy. ribbed and spirally corded. small umbilicus.
	1/4"	Crenilabium:	white, glossy. fold on columella. spiral striae.
	1/4"	Iselica:	umbilicate. spiral cords or cancellate. columella with swelling or tooth.
	1"-1/4"	Marginella:	smooth. inner and outer lips toothed. glossy.
	3/4"-1/4"	Vexillus:	strong shells with axial ribs. 3-5 folds on columella. colorful.
fig. 33	<hr/>		
	1"-3/4"	Antillophos:	beaded ribs give cancellate appearance.
	1"+-3/4"	Cantharus:	heavy ribs with spiral sculpture.
	1"-3	Enaeta:	heavy shell with weak axial ribs. outer lip with slight swelling at center. see fig. 27a.
	1"-3/4"	Engoniophos:	similar to Antillophos.
	1"-3/4"	Nassarius:	broad, thickened parietal shield. strong ribs, spiral sculpture.
	1/4"	Ringicula:	white. smoothish. globose (fat). spiral scratches. 3 folds on columella.
fig. 34	1"-3/4"	Trigonostoma:	heavy and fat. weak folds on columella. rounded ribs.
<hr/>			
	1/4"	Pedipes:	with 3 pronounced teeth on the columella. see fig. 32b.
	1/4"	Ringicula:	white. smoothish. globose (fat). spiral scratches. 3 folds on columella.
fig. 35	<hr/>		
	3/4"-1/4"	Acteon:	one fold on columella. smoothish except for spiral rows of fine punctate dots.
	1/4"	Cingula:	smoothish. slitlike umbilicus.
	3-1/4"	Lacuna:	shelflike columella. chinklike umbilicus. aperture thickened.
	3-1/4"	Littorina:	usually without umbilicus. smoothish. columella a flat shelf.
	1/4"	Stilifer:	globose. no umbilicus. lasty whorl especially bulbous.
fig. 36	1/4"	Tricolia:	colorful, usually with red dots, zigzag lines or flames. smoothish.
<hr/>			
	3-1/4"	Neritina & relatives:	inner lip toothed. broad, flat columella. spire very low.
	1"+-1/4"	Polinices & relatives:	smooth, polished. umbilicate. umbilicus sometimes covered by a buttonlike callus.
fig. 37	<hr/>		
	3/4"-3	Admete & Agatrix:	heavy. ribbed and spirally corded. small umbilicus.
	1"+-3/4"	Cancellaria & relatives:	heavy. folds on columella.
	3-1/4"	Choristes:	rounded. smooth. rare.
	1/4"	Fossarus:	white. umbilicate. spirally corded.
	3/4"-3	Homalopoma:	spiral cords. slight tooth on columella.
	1"+-3	Janthina:	purple. fragile. pelagic.
fig. 38	3-1/4"	Scissurella:	with a slit on outer lip. peripheral band.
3/4"-3	Vanikoro:	white. umbilicate. spirally corded and with axial sculpture. columella straightish.	



fig. 39

Size	Genus or Family	Description
1/4"	Aorotrema :	tops of whorls flat. strong spiral cords on top and periphery of whorl, making aperture squarish.
1/2"-1/4"	Arene :	thick-shelled. round, thick aperture. deep umbilicus.
1/4"	Euchelus :	coarse, beaded spiral ribs. no umbilicus.
1/4"	Haplocochlias :	finely striate. thick, round outer lip. slight depression at umbilicus.
1/2"-1/4"	Homalopoma :	spiral ridges or lines. no umbilicus.
1/4"	Liotia :	deep umbilicus. cancellate, pitted.
1/4"	Margarites :	umbilicate. smooth or with spiral cords.
3/4"-1/2"	Modulus :	stout tooth on base of columella. (see fig. 16a) spiral sculpture.
1/4"	Parviturboides :	spirally corded. umbilicus bordered by cord. columella thick.
1/4"	Peasiella :	peripheral ridge or rib. umbilicate.
1/4"	Pseudostomatella :	wide mouth. rows of beads.
1/2"-1/4"	Solariella :	strong spiral cords. deep umbilicus, usually bordered by a beaded cord. suture channelled.
1"+-1/4"	Tegula :	whorls flattish. with or without umbilicus. columella thickened or toothed.



fig. 40

1/4"	Brookula :	umbilicate. outer lip thickened.
1/4"	Fossarus :	white. umbilicate. corded. columella straight.
1/4"	Gabrielona :	very globose. smoothish. colorful.
1/2"-1/4"	Heliacus :	sutures channelled. deep, wide umbilicus. colored.
1"+-1/2"	Janthina :	purple. fragile. pelagic.
1/4"	Parviturbo :	narrow umbilicus. spiral cords.

Superfamily Littorinacea

3/4"-1/2"	Echininus	} columella a narrow shelf. with or without chinklike umbilicus.
1/2"-1/4"	Lacuna	
1"-1/4"	Littorina	
1/2"-1/4"	Tectarius	



fig. 41

1/2"-1/4"	Heliacus :	suture deeply channelled. deep, wide umbilicus. colored.
1/4"	Margarites :	umbilicate. smooth or with spiral cords.
1/4"	Philippia :	narrow umbilicus bordered by a row of beads.

Family Vitrinellidae

1/4"	Anticlimax :	peripheral keel. spiral scratches. white.
1/4"	Circulus :	deep, wide umbilicus. strong spiral threads or keels. white.
1/4"	Episcynia :	deep umbilicus bounded by a keel. peripheral keel is minutely serrated (toothed). white.
1/4"	Lydiphnis *	peripheral keel. white.
1/4"	Vitrinella :	umbilicus with flattened walls bounded by a spiral cord. upper margin of thin lip arching forward. white.

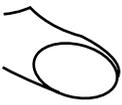
	Size	Genus or Family	Description
	1/2"-1/4"	Lamellaria :	very thin and fragile. white.
	1/4"	Macromphalina :	wide umbilicus. early whorls slanted.
	1"+-3/4"	Sinum :	strong but thin. aperture earlike.
fig. 42	1"+-1/2"	Haliotis :	shiny & pearly interior. row of holes on top (dorsal) surface.
	1"+-3/4"	Sinum :	strong but thin. aperture earlike.
	1/4"	Synaptocochlea :	spirally striated. fragile. colorful.
fig. 43	1/2"-1/4"	Atlanta :	fragile. white. thin keel at periphery.
	1/4"	Cochliolepsis :	wide umbilicus. flattened. smoothish.
	1/4"	Cyclostrema :	umbilicate. ribbed. white.
	1/4"	Cyclostremella :	spire depressed and concave. umbilicate. suture deep. smoothish.
fig. 44	1/4"	Heliacus :	deep umbilicus. sculptured. colorful.
	1/4"	Omalogyra :	apex submerged. aperture clasps both sides. tiny.
	1/4"	Pseudomalaxis :	flat, squared aperture. whorls may not touch each other.
	1/4"	Skeneopsis :	whorls rounded. umbilicate. colored.
Family Vitrinellidae			
	1/4"	Circulus :	umbilicate. spiral sculpture. white.
	1/4"	Cyclostremiscus :	deep umbilicus. spiral sculpture. white
	1/4"	Discopsis :	prominent peripheral keel. umbilicate. white.
	1/4"	Lydiphnis *	: peripheral keel. white.
	1/4"	Pleuromalaxis :	with strong radial riblets. white.
	1/4"	Solariorbis :	umbilicus with ridge or thick wall ending in lobe at edge.
	1/4"	Teinostoma :	callus over umbilicus. white.
	1/4"	Vitrinella :	umbilicus usually with spiral cord on edge. white.
	1/4"	Vitrinorbis :	ribbing and spiral sculpture. white.
	1/4"	Woodringilla *	: grooved umbilical callus.
	1/2"-1/4"	Erato :	smoothish or pimpled.
	1"-1/4"	Marginella :	columella toothed. lip sometimes toothed. shiny. smooth.
	1"-3/4"	Morum :	pimpled parietal shield. nodulose sculpture.
	1"-3/4"	Parametaria *	: outer lip smooth. spiral striae on base.
fig. 45	1"-3/4"	Pyrene :	lip toothed. base with spiral striations.
	1"+-3/4"	Cyphoma :	smooth. central cross-ridge on back.
	1"+-3/4"	Cypraea :	smooth. aperture toothed.
	1"	Jenneria :	aperture with strong teeth. strong riblets.
	3/4"	Pseudocypraea :	fine riblets running around shell from sides of aperture.
fig. 46	1"-1/4"	Trivia :	strong wrinkles or riblets running around shell from sides of aperture. most have a furrow interrupting the riblets down the center of the back.



fig. 47

- | Size | Genus or Family | Description |
|-----------|-------------------------|--|
| 1/4" | Cylichna : | small concavity at apex. bottom of aperture squared. spiral scratches. |
| 1/4" | Granulina : | smooth. lip toothed. tiny but heavy. white. |
| 1/4" | Marginellopsis : | tiny. thick. smooth. 4 folds on columella. |
| 1/2" | Ovulacteon : | apex perforated. columella smooth. |
| 3/4"-1/2" | Pedicularia : | spiral threads or cancellate. |
| 1"-1/2" | Primovula : | outer lip thick and toothed. smooth. |
-



fig. 48

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|----------|----------------------------|--|
| 1"+-3/4" | Cyphoma (juvenile): | smooth. central cross-ridge on back. thin lip. adult has aperture in middle (see fig. 46). |
| 1"+-1/2" | Cypraea (juvenile): | thin lip. smooth. |
| 1"-1/2" | Simnia : | outer lip thickened in adult. |
-



fig. 49

- | | | |
|-----------|---------------------|--|
| 1/4" | Cylichna : | apex perforated. fold on columella. |
| 1/4" | Cystiscus : | outer lip smooth, inner toothed. smooth. small but heavy. |
| 1/4" | Granula * | : smooth. notch at top of aperture. outer lip toothed. |
| 1/2" | Ovulacteon : | apex perforated. columella smooth. |
| 3/4"-1/4" | Persicula : | smooth. heavy. outer lip usually toothed. spire usually covered by a callus. |
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fig. 50

- | | | |
|-----------|---------------------|--|
| 1"-1/2" | Jaspidella : | smooth and shiny. one fold on columella. |
| 3/4"-1/4" | Melampus : | smooth. several strong teeth on columella. lives above high tide line. |
| 1"+-1/2" | Mitra : | 3-7 folds on columella. variously sculptured. see fig. 29a. |
| 1"-1/2" | Olivella : | smooth and shiny. callus on lower body. |
| 1/4" | Tralia * | : 3 folds on columella. smooth outer lip. |
-



fig. 51

- | | | |
|-----------|------------------------------|---|
| 1/2"-1/4" | Acteocina : | sutures channelled. fold on columella. smooth but not glossy. |
| 1"-1/4" | Hyalina (Volvarina) : | inner lip toothed. shell smooth and glossy. sutures not indented, smooth. |
| 1/2"-1/4" | Melampus : | smooth. several strong teeth on columella. lives above high tide line. |
-



fig. 52

- | | | |
|--|----------------------|---|
| 1/2"-1/4" | Acteon : | fold on columella. spiral scratches or rows of dots. |
| 1/4" | Crenilabium : | spiral scratches. fold on columella. |
| Family Melampidae (all live above high tide line) | | |
| 1/2"-1/4" | Detracia * | : smooth. very narrow aperture with teeth on both lips. |
| 1"-3/4" | Ellobium : | fold on columella. |
| 3/4"-1/4" | Melampus : | smooth. several strong teeth. |
| 1/4" | Phytia * | : strong folds on columella |
| 1/4" | Sarnia * | : 2 folds on columella. outer lip thickened. |
| 1/4" | Tralia * | : 3 folds on columella. smooth outer lip. |

	Size	Genus or Family	Description
		Superfamily Bullacea	
	1"+	Bulla :	smooth. may have some spiral scratches. strong.
	3/4"-1/4"	Haminoea :	very fragile, translucent. smooth or scratched.
	1/4"	Micraenigma :	white, translucent. smooth. fold on columella.
fig. 53		Superfamily Acteonacea	
	1/4"	Diaphana :	shouldered. thin, transparent. umbilicate.
	3/4"	Micromelo :	thin, fragile.
	3/4"-1/4"	Philine :	very large aperture. thin.
	1"	Scaphander :	smoothish. no folds on columella.
	1/4"	Cylichnella :	spire sunken. 2 folds on columella.
	1/4"?	Akera :	very thin, transparent. suture apparent.
		Superfamily Bullacea	
	3/4"-1/4"	Atys :	lip rises from center of spire, with angular fold. columella folded.
fig. 54	3/4"-1/4"	Haminoea :	spire concealed, with perforation at apex. thin, translucent.
	1/4"	Pyrunculus :	thick. opaque-white.
	1/4"	Volvulella :	pointed apex.
		Superfamily Bullacea	
	3/4"-1/4"	Cylindrobulla :	thin and fragile. spire sunken.
	1/4"	Pyrunculus :	thick. opaque-white.
	1/4"	Retusa :	fragile. spire sunken.
	1/4"	Sulcoretusa *	spire sunken. vertical striae.
	1/4"	Volvulella :	pointed apex.
fig. 55	3/4"-1/4"	Haliotinella :	aperture as large as the shell. thin.
		Superfamily Acteonacea	
	1/4"	Cylichna :	apex concave. fold on columella.
	3/4"	Micromelo :	thin, fragile.
	3/4"-1/4"	Philine :	thin. large aperture.
fig. 56	1"+	Scaphander :	smoothish. no folds on columella.

Glossary

Aperture: the opening at base of the shell through which the animal emerges. Also called “mouth”.

Apex: top or tip of the shell, when shell is held with the aperture down.

Axial: running along the length of the shell from apex to siphonal canal.

Beaded: with raised knobs or beads on the surface.

Callus: area of thick shell material, often smooth and shiny.

Cancellate: looking crosshatched because of raised areas in two directions (axial and spiral)

Carinate: with a strong raised line or rib around the body of the shell.

Columella: area along the edge of the aperture next to the shell body.

may be toothed.



may have folds.



Concave: curved inward (toward the body of the shell)

Convex: curved outward.

Corded: with raised lines around the shell.

Globose: flattened, rounded.

Keel: a sharp, raised line or rib, usually on the periphery of the shell or the edge of the umbilicus.

Lip: outer edge of the aperture or mouth of the shell.

Longitudinal: axial; running the long way of the shell.

Nodulose: knobby. Knobs are stronger than “beads”.

Parietal Shield: thickened, usually polished area extending from the columella across part of the lower shell body. May be separated or raised from the shell.

Pelagic: living in the open ocean, usually swimming at the surface.

Perforate: sunken, like a hole.

Periphery: the outer edge of the shell, around the fattest part of the whorl.

Punctate: with tiny holes or depressions.

Ribbed: long raised areas usually running longitudinally (axially) on the whorls of the shell.

Sculpture: the raised and depressed features on the surface of the shell.

Shoulder: top section of each coil or whorl. **Shouldered:** with shelf at shoulder.

Sinus: notch at top of aperture.



Siphonal Canal: channel at bottom of aperture for the animal's siphon, or breathing tube.



Spirally (ribbed or sculptured): running around the body of the shell.

Striate, Striations: with fine, incised lines.

Suture: the place where one coil (whorl) touches the one below it. May be impressed, indented, deep, or smooth.

Tooth(ed): with toothlike projections, usually on the inside of the outer lip or on the columella.

Umbilicus, Umbilicate: depressed area beside the inner lip (columella)



or at base of shell.



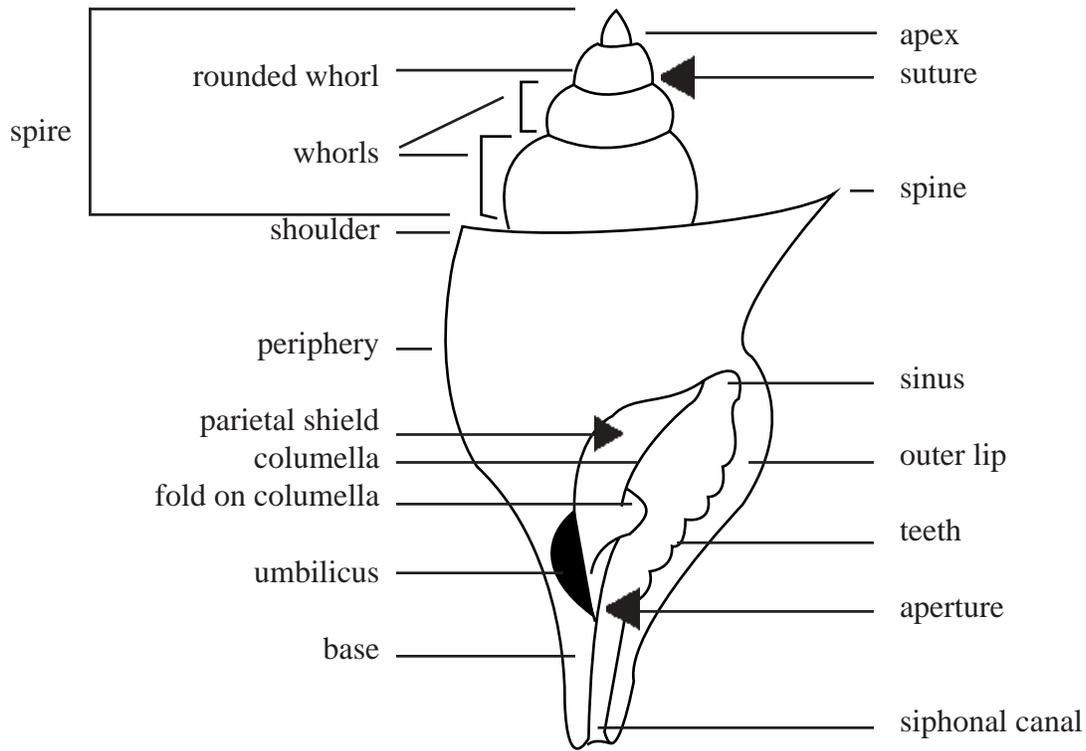
may be chinklike, or slitlike:



Varix (plural **Varices**): especially thick rib at the edge of the outer lip. Former varices may show as strong ribs.

Whorl: one coil of the shell.

Structural Details



Sculptural Details

