

MOLLUSCAN GLOSSARY

<http://www.fish.washington.edu/naturemapping/mollusks/glossary.html>

Abalone: A flattened, ear-shaped shell with a nacreous interior; a member of the family Haliotidae. Called "Paua" in New Zealand.

Abapical: Away from shell apex toward base along axis or slightly oblique to it.

Aberrant: Deviating from the usual type of its group; abnormal, straying, different.

Abysal: Associated with the abyssal zone, i.e., the floor of the deeper ocean from 2,000 to 6,000 meters.

Accessory: Aiding the principal design; contributory, supplemental, additional.

Accessory plate: A secondary calcareous or corneous structure formed in some bivalves (e.g., Pholadidae) to protect the soft parts. In certain bivalves, a small shelly or partially shelly plate lying over the upper or lower margin, or a shelly plate attached to the internal ligament.

Accessory scar: In bivalves, a small, mostly circular impression on the inside of the shell made by other than the adductor and pallial muscles.

Actinodont: Descriptive of bivalve shell having a hinge with teeth that radiate outward from the umbones.

Acuminate: Gradually tapered to a point. Sharply pointed.

Acute: Sharply angled. Sharp; a spire with an angle of less than ninety degrees.

Adapical: Toward shell apex along axis or slightly oblique to it.

Adductor muscle(s): Anterior and posterior muscles that close a bivalve shell. In a bivalve, the muscle, either one or two, connecting valves and drawing them together.

Adductor muscle impression: Impression on inside of bivalve shell valves where the adductor muscle was attached. See Adductor Scar.

Adductor scar(s): The depressed scars of the muscles of a bivalve shell. A differentiated area on the interior of a bivalve shell that marks the attachment point of an adductor and is generally striated, depressed, or outlined. Attachment scars of adductor muscles inside a bivalve shell

Adherent: Closely attached.

Adpressed: Whorls overlapping. A suture tightly pressed to previous whorl. Overlapping whorls with their outer surfaces very gradually converging; preferred to the term appressed.

Adventitious: Not inherent; accidental, casual. Aff. (affinis): Related to but not identical with.

Allopatric: Two related species with different ranges.

Amphineura: One of six classes of mollusca; chitons or coat-of-mail shells.

Anal: Pertaining to or near the anus, or posterior opening of the alimentary canal.

Anal canal: An opening in the gastropod shell through which excrement is expelled.

Analog: An organism analogous to one in another species group; having a similar function but different in origin and structure.

Angular or Angulate: Cornered, two surfaces meeting at an angle. Having angles, sharp corners, or an edge where two surfaces meet at an angle.

Animal: The fleshy part of the mollusk

Anisomyarian: Descriptive of bivalve shells with the scars of the two adductor muscles on the interior being of different sizes. The posterior scar is usually larger than the anterior.

Annulated: Marked with rings.

Annulation or Annular ring: A growth increment in a tubular shell marked by regular constrictions (e.g., caecum).

Anomphalous: Lacking umbilicus. Antepenultimate whorl: Last whorl but one, before body whorl.

Anterior: Apertural or head end of a univalve or foot end of bivalve; opposite of posterior. The end of a shell nearest to the front of the mollusc when in motion. See also Posterior; Dorsal; Ventral.

Anterior canal: Notch or through-like or tubular extension of anterior apertural margin supporting the incurrent or inhalant siphon. See also Siphon Canal.

Anterior extremity or margin: Front or head end of animal or shell. In gastropod shells it is the front or head end of the animal, i.e. the opposite end of the apex of the shell; in bivalves the anterior margin is on the opposite side of the ligament, i.e. where the foot protrudes.

Anterior slope: Surface of valve of bivalve shell from umbo to anterior ventral margin.

Antero-dorsal surface: Dorsal surface of bivalve shell anterior to umbones.

Apertural: Pertaining to aperture or on same side as aperture.

Aperture: Opening or entrance of the shell providing outlet for the head and foot. The entrance to the shell interior. An opening or entrance of the body whorl to the shell interior in univalve molluscs. In gastropods and tusk shells, the opening through which the animal's foot and head protrude.

Apex, Apexes or Apices: First-formed tip of the shell. The beginning or summit of the shell. The beginning or summit or the gastropod spire. The top or earliest formed part of shell-tip of the protoconch in univalves-the umbos, beaks or prodissoconch in bivalves. In gastropods, the tip of the spire; in tusk shells, the small, open hind end.

Apical: At the apex, point or tip.

Apical cavity: A space under the apex of patellate gastropods.

Apical orifice: An opening at the apex. Apical plug: A special calcareous filling in the apex of certain gastropods (e.g., *Fartulum*).

Apical whorls: Those whorls near the apex. Apocrine: Secreting externally; the opposite of endocrine.

Apophysis (pl. Apophyses): Calcareous projections from hinge-plate in *Teredos* and *Pholads* for attachment of pedal muscles. A bony protuberance; a fingerlike structure; spoon-shaped, calcareous. A shelly or horny protuberance found in the valve interior of some *Pholadidae* or on shelly opercula of some gastropods. The articulating plate on valves II to VII of a chiton shell. Projecting structure on inside of bivalve shell below umbo to which certain muscles are attached; also applied to projecting structure on inside of operculum in some gastropods, e.g. *Neritidae*.

Appressed: With whorls overlapping, so that their outer surfaces converge gradually. Also given (in other works) as *Adpressed*.

Aragonite: A mineral composed, like calcite, of calcium carbonate, but differing from calcite in certain

characters of crystallization, density, and cleavage.

Archetype: The ancestral type established hypothetically by eliminating specialized characters of known later forms.

Archibenthic: Deep sea zone; between 800 and 1,000 metres.

Arcuate: Curved or arched. Curved, as a bow, or arched, as the ventral edge in some bivalves.

Articulamentum: Internal layer of a chiton shell. In chitons, the middle shell layer.

Asymmetrical: Uneven; unequal.

Attachment scar: Any impression left on a molluscan shell by the attachment of a soft part (e.g., mantle, muscle, or foot).

Auctt. auct. or auctorum: Of authors; not as proposed originally. An abbreviation indicating that the usage is not now regarded as appropriate for the cited taxon, although the name itself may be valid (i.e., the term indicates the misuse of a name).

Aurical or Auricle: Ear-shaped appendage (as in Pectinidae). Anterior or posterior projection along the hinge line of a bivalve shell.

Auricular crus: Blunt internal ridge that defines the bottom boundary of the auricles of certain bivalve shells.

Auriculate: Having ear-shaped projections.

Auriform: Shaped like a human ear.

Axial: Parallel, or nearly so, with the shell axis. Longitudinal, following the direction of the axis of the shell. Longitudinal ribs or color bands. In the same direction as the axis; from apex to the base of a snail shell. Axial ribs are those parallel to the edge of the outer lip. Transverse is a preferred term. In gastropods, running parallel to the shell's axis, or from spire to base.

Axis or Pillar: Imaginary line through the apex, about which the whorls are coiled. Central structure of univalve shell.

B

Backshore: The part of the shore lying between foreshore and the coastline; covered with water only by exceptional storms or tides.

Band: A strip of shell material differentiated by color or construction from the shell on either side of it.

Banding: Color marking in continuous stripes.

Barnacle: Not a mollusk but a Crustacean.

Basal: The lower part, bottom or base of the shell.

Basal callus: A shelly spirally-ridged thickening on the columellar base as in olive shells.

Basal fasciole: A special band on the base of a shell formed by a series of more or less curved growth lines that define the siphonal sinus (canal).

Basal fold: A fold near the anterior end of the columella on a gastropod shell.

Basal plate: A segment of the ribbon to which radula teeth are attached (e.g., in collisella).

Basally: Towards the lower part of the shell.

Base: Part of the shell surface opposite the apex. In coiled gastropods, the area below the periphery of the body whorl, excluding the aperture; in uncoiled or limpet-like shells, the rim of the aperture. In bivalves, the part of the margin opposite the beaks.

Bathymetric: Pertaining to the measurement of depth in bodies of water; also, pertaining to the distribution of organisms over various depths.

Bead: Small rounded knob on a rib.

Beaded: Sculptured so as to resemble beads or strings of beads.

Beak: The rounded or pointed extremity of a bivalve shell, the starting point of growth; also termed the umbo. The small tip of a bivalve shell, near the hinge; also, any spoutlike elongation of a shell (e.g., Cuspidaria). See also Umbo.

Benthic or Benthonic: Living on the sea bottom. Also given as Benthic.

Benthic range: Depth range below sea-level. Benthos: The whole assemblage of plants or animals living in or upon the sea bottom.

Biconic or Biconical: Resembling two cones placed base to base. Having a diamond-shaped outline; especially used in reference to gastropod shells having a spire of about the same size and shape as the body whorl.

Bifid: Split in two, separated by a cleft. Divided into two parts by a groove; applied especially to the hinge teeth of bivalves.

Bifurcate or Bifurcation: Double pronged, divided into two stems. A division into two branches, especially in shell sculpture. Usually seen on bivalve shells.

Binominal nomenclature: Two-name system of naming (i.e. generic and specific name).

Bivalve: One of six (or seven) classes of mollusca; two shelly valves hinged by a ligament. Also termed bivalvia; (the exception are bivalved gastropods of the family Juliidae).

Blade: The broad flat portion of the pallet of all teredinids; the blade and the stalk are the two parts of the pallet.

Body Whorl: Last and usually the largest whorl of the gastropod shell. It is the section closest to the aperture and encloses most of the body of the animal.

Brachiopod: Two-valved marine animals which somewhat resemble bivalve mollusks but do not belong in the Mollusca.

Branchia: Molluscan gill or respiratory organ.

Bridged: Extending from one side to the other; partly covered. Bryozoa: Moss-like sea animals.

Buccal: Pertaining to the organs of the mouth area in gastropods, especially to the bulging flexible mass that supports the radula.

Buccal bulb: The bulging mouth extension carrying the ribbon of teeth (radula).

Buccinid or Buccinoid: Like the whelk buccinum.

Bulbous: Bulging or globular. Bulloid: Bubble-shaped; in the shape of a bulla shell.

Buttress: A shell-strengthening structure--e.g., a supporting laminar costa in gastropods, or a support for part of the hinge in bivalves.

Byssal orifice or notch: A triangular or rounded opening at the margins of certain bivalve shells i.e. Pectinidae for the passage of the protrusion of the foot.

Byssal sinus: Recess in the anterior of the valve of some bivalve shells to provide an outlet for the byssus notch.

Byssus: A bundle of fibrous, tough conchiolin strands secreted by the foot of some bivalves, passing out of the anterior end of the shell and use to secure the animal to a substrate.

C

Calcareous: Composed mostly of calcium carbonate or lime. Chalky or shelly in appearance.

Calcified: With the conchiolin matrix partially or entirely reinforced by calcium carbonate intercalations.

Callum: Shell material filling the gap between valves in certain mature pholad bivalves.

Callus or Calloused: Calcareous thickening (=callosity). Deposit of enamel; hardened; thickened. A thickening of the parietal region or aperture of gastropod shells. Also called (in some works) the Inductura.

Canal: In gastropods, a narrow notch or tubular extension of the aperture, enclosing a siphon. Semitubular extension of aperture in univalves.

Canaliculate: Gutter-like or channelled; applied to suture of some gastropod shells.

Cancellate or Cancellated: Ornamented with intersecting spiral and axial ridges. Latticed; horizontal and vertical cords interlacing at right angles. See also Decussate.

Cardinal: In bivalves, situated more or less in the central part of the hinge area directly below the beaks. Elevated process on hinge plate near umbo usually with corresponding socket in opposite valve.

Cardinal teeth: The main central teeth in bivalve shells. Projections on the hinge line, located directly below the umbones.

Carina (pl. carinae): A prominent, sharp-edged ridge; same as keel.

Carinate: With a keel-like, elevated ridge, or carina.

Carnivorous: Feeding on living animal matter.

Cartilage: A translucent, elastic tissue inside the hinge that supplements the external ligament in binding the two valves of a bivalve together, attached to the resilifers and perhaps reinforced by a calcareous coating, the lithodesma.

Cartilage pit: A depression for the inner part of the ligament in bivalves.

Cartilaginous: Having a flexible or horny or chitinous texture, as contrasted with calcareous (shelly).

Cementation: Fixation to the substrate in sessile mollusks.

Central area: In chitons, the narrow zone in the center of one of the intermediate valves.

Central teeth: In bivalves, the hinge teeth located on the interior under the umbones.

Cephalic tentacles: Head tentacles.

Cephalopoda: One of six (or seven) classes of mollusca; octopus, squid, cuttlefish, argonaut and nautilus; shell external, internal or absent.

Cerata (sing. Ceras): Dorsal appendages in nudibranchs. External outgrowths, presumably respiratory in nature, along each side. cf.: Confer, compare to. Chaffy: Covered with a roughened surface, as by scales.

Channeled: With a deep groove, or sculptured with a series of grooves.

Chink: A long, narrow cleft, as in the umbilicus of lacuna. See also Gape; Rimate.

Chitin or Chitinous: A tough, horny substance that, in mollusks, sometimes occurs in the radula of a gastropod; however, most horny material in mollusks is conchiolin, not chitin.

Chiton: Amphineura (or Aplacophora and Polyplacophora), one of six (or seven) classes of mollusca.

Chondrophore: A large, spoon-shaped resilifer. A pit, or spoonlike shelf, in the hinge of a bivalve, such as Mactra, into which fits a chitinous cushion, or resilium. See also Fossette.

Cilia or Cilate: Hairlike processes on the surface of a cell or organ to direct water currents. They are shorter and more numerous than flagella.

Ciliated: Hairy.

Cingulate: Girdled.

Circumboreal: Living in the region around the high latitudes of the northern hemisphere.

Circumpolar: Living in the waters surrounding or found in the vicinity of a terrestrial pole.

Circumtropical: Throughout the tropics.

Class: Major division of a phylum. There are six (or seven) classes in Mollusca. Clathrate: Latticed with bisecting striae or cords, or by axial and spiral ridges.

Cline: Gradual change of character in continuous populations.

Coalesced: Fused or merged together.

Cognate: Allied by deviation from the same source.

Collar: A raised lip bordering a suture.

Colonial: A kind of animal that is organized into associations (colonies) of incompletely separated individuals; e.g., Physalia, sponges and corals.

Columella: Pillar surrounding the axis of a coiled shell, formed by the inner walls of the whorls. The left-hand margin of the shell or central pillar around which whorls are wound.

Collumella fold: Ridge winding round columella and projecting into interior of shell.

Columellar lip: Inner edge of the aperture comprising the visible part of the columella.

Commensal (Commensalism): Living with another animal, but not deriving nourishment directly from the host. A symbiotic relationship where only one organism benefits. See also Parasitic.

Compressed: Flattened; squeezed together. With reduced thickness.

Concave: Excavated; inside curvature. Hollow or dished, as opposed to convex.

Concentric: Arc-like ridges or striae following the same direction as the ventral margin of a bivalve shell or the growth lines; running parallel to the lower margin, from the front end to the hind end.

Concentric sculpture: Sculpture congruent with or roughly paralleling the ventral margin of a bivalve shell, and contrasted with radial sculpture; in the same direction but heavier than growth lines.

Conchiolin: A proteinaceous material that makes up the periostracum of a shell, and also forms the organic matrix for calcareous parts of the shell.

Conchologist: One who collects shells. See Malacologist.

Conchology: The study of marine, fresh-water and land-shells. The branch of zoology that embraces the arrangement and description of mollusks based upon the study of the hard parts.

Confluent: Flowing together as to form one.

Congener: A term applied to species of the same genus.

Conic or Conical: Cone-shaped; especially, describing a shell with a flattened base and whorls that are so shaped.

Conspecific: Of the same species.

Constrict: Draw tight or compress at some point; bind, cramp.

Constriction: A narrowing or "waist" in a shell structure.

Convex: Arched; outside curvature.

Convolute: With last whorl completely concealing the earlier ones.

Coppice dune: A mound formed by wind in conflict with bunch vegetation.

Cord(s): Coarse, rounded spiral or transverse linear sculpture on the shell surface; smaller than costae.

Cordate: Heart shaped.

Corneous: Consisting of horn, of a non-calcareous hornlike texture, as the opercula of some mollusks, such as busycon.

Coronate: Encircled by a row of spines or prominent nodes, especially at the shoulder of the last whorl in gastropods.

Corrugated: Folded or ridged; broadly and heavily sculptured.

Costa (pl. costae): Large, cordlike ridge that runs longitudinally, spirally, or concentrically on a shell rib. Line of ornament similar to, but of greater prominence than, a cord.

Costate: Rib-like sculpture, which is strongly ridged.

Cotype: One of several specimens collectively designated type; no longer used. See Holotype and Paratype.

Crassate: Coarse and solid.

Crenate, Crenulate or Crenulated: Finely notched, scalloped, wrinkled or delicately corrugated around the margin. Describing edge of the inner margins of some bivalve shells, or the outer lip margin of gastropod shells.

Crenules: Small notches or beads.

Ctenidium: Molluscan gill or respiratory organ.

Cusp: Point of a tooth. A prominence, or point; temporary ridges of sand perpendicular to the shoreline.

Cuticle: An outer layer of cells; the precursor of the calcified shell. See Epidermis.

Cylindrical: Round, like a cylinder with parallel sides.

D

Deciduous: Having the tendency to fall off early or before maturity, as the periostracum of most Cymatium.

Deck: A septum, or small sheet of shelly substance in the umbonal region connecting the anterior and posterior ends of a valve; also used to describe the diaphragm of crepidula. See also Shelf.

Decollate: Truncated or cut off, with the earlier whorls detached, as in some gastropods.

Decussate or Decussated: Sculpture crossings at acute angles. Having a latticed surface ornamentation formed by the intersection of fine ribs, not necessarily at right angles. See also Cancellate.

Deltoidal: More or less triangular.

Dentate: Sculptured, with teeth or short ridges. Having conspicuous projections along a margin in gastropod shells. See Denticles.

Denticles: Small teeth. Small projections around the margin of a gastropod aperture or the margin of a bivalve valve, especially near the hinge. (Not to be confused with true interlocking hinge teeth.)

Denticulate(d): Sculptured with small nodules or points. Having denticles. Toothed.

Dentition: Tooth structure: referring in bivalves to the hinge teeth, in gastropods usually to the elements of the radula.

Depressed: Low in proportion to diameter.

Detritus: Disintegrated material. Fine particles of plant, animal, or inorganic matter.

Dextral: Right-handed, as in gastropod shells having the aperture on the right side of the shell facing the observer when the apex is held upward. See Sinistral.

Diameter: In gastropods, the greatest width of the shell; in bivalves, a measure of shell convexity.

Diatoms: Minute pelagic algae, which have a hard skeleton.

Digitation: Finger-like projection outwards from outer lip. Dilate: Widened, expanded.

Dilacerate: Broken, interrupted.

Dimorphism: Occurrence of two distinct morphological types in a single population; in sexual dimorphism, male and female forms are different.

Dimyarian: Denoting, in the bivalve mullusks, the characteristic of having two (anterior and posterior) adductor muscles.

Disc: The space between the umbo and the margin of a bivalve shell.

Discoïd or Discoïdal: Disc-shaped; whorls coiled in one plane more or less compressed.

Distal end: The far end. Remote from center.

Divaricate: Forked or branched. Diverging sculptural elements, often forming chevrons. When ridges, grooves or other types of ornament in bivalve shells change course and do not usually follow a concentric or radial growth pattern.

Dorsal: In gastropods, lying on the side of the shell opposite the aperture; in bivalves, lying on the surface or margin nearest the hinge; in chitons, lying on the body surface that bears the eight shell valves.

Dorsal line or sulcus: the colourless longitudinal line on the back of the shell connecting both ends.

Dorsal margin: In bivalves the hinge region.

Dorsum: The back of the shell, opposite the aperture in gastropods.

Drift line: A line of debris left by waves at the high-tide line.

Dull: Without sheen or gloss.

E

Ear(s): Small extension of dorsal region of bivalve shell, usually with a notch between it and main part of shell, as in Pectinidae. In scallops and file shells, triangular or oblong projections at the ends of the hinge line.

Ecology: The study of the effect and relationship of environment on an organism.

Ecophenotypic variation: A non-hereditary modification of the animal due to environmental and other factors.

Ecotypes: Variants due to environmental factors.

Ectoparasite: A parasitic animal, such as the snail *Pyramidella*, which infests the outsides of some bivalves, piercing the shell with a buccal stylet and feeding upon the soft parts.

Edentate: Without hinge teeth.

Edentulous: Lacking teeth.

Egg capsule: A protective structure enclosing an individual egg or a cluster of eggs.

Elevated: Raised up; high in proportion to diameter.

Elongate: Extended; considerably longer in one dimension than another.

Emarginate: With margin, or edge, of shell cut into by a notch or notches or gently indented. Em. Emend.

Emendation: Change in concept; intentional change made to correct an error. Marks an emendation or deliberate alteration in the spelling of a name, usually an unjustified alteration.

Embayment: Curved portion of a pallial sinus in bivalves.

Embryonic whorls: Whorls which have been formed prior to hatching.

Endemic: Native, not introduced; having the habitat in a certain region or country.

End valves: In chitons, the head and tail valves.

Enon. binom.: Invalid, not binominal.

Ententate: Without teeth; descriptive of a type of bivalve shell with a hinge that lacks teeth.

Entire: Oval or rounded and smoothly arched, uninterrupted by any reentrant curve, sinus, crenulation or notch.

Eocene: Early Tertiary Period, dating back 36-58 million years.

Epidermis: The outermost layer of the molluscan body, not associated with the shell; cuticle; integument or skin. (Often erroneously applied to the periostracum, the outer layer of the shell.)

Epifauna: Animals that normally live exposed, above the substratum surface; may be with or without attachment.

Equilateral: When beaks in bivalve are central. The anterior and posterior ends of each valve being of equal size.

Equi-sized: Equal in size.

Equivalve: When the two valves of a bivalve shell are of the same shape and size.

Eroded: Having parts of the surface worn away.

Err. error: Unintentional change.

Escutcheon: Depressed, elongate area behind umbones, encompassing ligament, if external, on one or both valves of bivalve shell; usually differing from rest of shell in ornament and/or color.

Ex: Taken from.

Exhalant siphon: An outlet through which current is expelled.

Expanded: With dimensions proportionately greater than those of preceding parts of the shell.

External ligament: That portion of the ligament visible when the valves of a bivalve are closed. See Ligament.

Exudate: Any substance which filters through the walls of living cellular tissue and is available for removal.

F

False umbilicus: Depression at base of gastropod shell not penetrating deeper than height of body whorl, as in some of the Trochidae.

Family: Group of genera collectively showing relationship.

Fasciole: In univalves, either a spiral ridge at base of pillar, or groove on shoulder area, often ending in a sinus. A small band; a distinct band of color; a spiral band formed in gastropods by the successive growth lines on the edges of a canal.

Fathom: a nautical unit of measure (six feet), used principally for measuring cables and the depth of the ocean by means of a sounding line.

Fauna: Animal life of a particular area or epoch; as opposed to Flora, for all plant life.

Faunule: A restricted faunal assemblage.

Fide: According to a published statement.

Filaments: Hairlike fleshy projections on gills or other internal organs, used for creating currents or for screening particles.

Fimbriate: Fringed.

Fissure: A narrow slit, cleft, crack, slot or deep groove.

Flange: An erect, projecting flattened ridge.

Flagella: Whiplike processes.

Flammules or Flammulations: Small flame-like markings.

Flaring: Opening outward, widening, often used with reference to the aperture of a gastropod shell.

Flexed: Folded or warped.

Flexure: A progressive folding or warping of one or both valves in a bivalve; more generally, a bending or angulation.

Fluted: With a series of elongated, slightly projecting channels and ridges along a margin.

Fluviatile: Living in fresh water.

Fold: A spirally wound ridge on the columellar wall of a gastropod shell.

Foliaceous: Leaf-like, flattened, projecting like tiles.

Foliated: Having branched or crimped outer ends; applied to the appearance of spines of certain gastropods such as some Muricidae.

Foot: A characteristic muscular organ of locomotion present in most mollusks (much reduced or absent in Aplacophora and in some bivalves), often modified to form specialized structures, such as the arms of cephalopods or the swimming paddles of pteropods.

Foramen: A natural hole or perforation.

Foraminifera: Calcareous or partly arenaceous-shelled protozoans.

Foreshore: The intertidal zone.

Fossa: A trenchlike depression; in some gastropods (e.g., nassarius), a spiral groove separating the base of the shell from the anterior canal.

Fossette: A bivalve resilifer that is pitlike in form. See also Chondrophore.

Fossil: Any hardened remains or traces of plant or animal life of some previous geological period, preserved in rock formations in the earth's crust.

Fossula: Shallow linear depression of the anterior part of the inner lip of some cowries. Lower protrusion or pit inside of aperture of inner whorl.

Frilled: With a series of crowded, fine, wavy or pleated, sharp, often scaly ridges.

Fulvous: Dark yellow.

Funicle: Ridge spiralling into the umbilicus, as in Naticidae. **Furrow(s):** A pronounced groove in a shell. Broad, usually shallow grooves.

Fuscous: Dark brownish, or greyish. **Fused:** Merged into a single structure or surface.

Fusiform: Spindle-shaped with a long canal and an equally long spire, tapering from the middle toward each end; applied to univalves as in the genus *Fusinus*.

G

Gamete: Either male or female mature reproductive cells; an ovum or a sperm.

Gape: An opening in a bivalve shell which is unable to shut tightly.

Gaping: Incapable of closing completely.

Gastropoda or Gastropod: Univalves, one of six (or seven) classes of mollusca. Single cap-shaped or spirally coiled shells not divided into chambers.

Gemmate: Bud-like sculpture.

Genus (pl. genera): Group of genetically related species possessing certain characters in common and easily separable from other groups of species. A taxonomic rank for closely related species which share a common phylogenetic origin.

Gen. nov. (genus novum): A proposed new Genus.

Gerontic: Very old individual.

Gibbose or Gibbous: Swollen.

Gill: The breathing organ in a mollusk. A respiratory organ that extracts dissolved oxygen and salts from the water.

Gill chamber: In bivalves, the space between and around the gills.

Gill rhachis: See Rhachis.

Girdle: A flexible, leathery, muscular integument surrounding the valves of a chiton, often ornamented with scales, spicules, or hairy processes.

Glabrous: Smooth.

Glazed: Having a shiny surface.

Globose: Roughly spherical in outline.

Globular: Globe or sphere-shaped, like a ball.

Glochidium (pl. glochidia): A larval bivalve of freshwater mussels that is parasitic on fishes.

Granular: Bearing granules as surface sculpture.

Granulate, Granulated or Granulose: Finely beaded or noduled. Having a rough surface of grainlike elevations.

Granule: A pustular surface structure.

Groove: An elongate and fairly uniform depression in the shell or soft parts of a mollusk.

Growth line(s): Impressed lines on the shell-surface due to growth-stages and rest periods.

Growth stages: Exaggerated growth lines indicating a cessation of growth.

Guttered: Marked with a wide, shallow groove or grooves.

H

Habitat: The kind of place where an organism normally lives.

Head: In general, the area of a mulluscan body that bears the sense organs and the mouth (or proboscis). A usually distinct structure located at the animal's front end, containing the mouth, eyes, and sensory tentacles; absent in bivalves, poorly defined in chitons.

Head valve: In chitons, the valve at the anterior end of the body. The valve at the front end of a chiton that laps over the front edge of the next valve.

Height: In gastropods (except in cowries) the distance from the embryonic whorls or apex to the siphonal canal (the term "length" is also used). In bivalves the greatest distance from the beaks on a vertical line to the ventral margin.

Helical: Spirally coiled.

Helicocone: Distally expanding coiled tube that forms most gastropod shells.

Herbivorous: Feeding on vegetable matter.

Hermaphrodite or Hermaphroditic: Having the sexes united in the same individual. Combining the organs and functions of both sexes.

Hermit crab: A soft-bellied crustacean which takes over empty univalve shells for a home.

Heterodont: Descriptive of bivalve shell that has a hinge with small teeth of different sizes, having both cardinals and laterals.

Heterostrophic: Apical whorls coiled opposite to adult whorls.

Hinge: Collective term for structures of the dorsal region of bivalve shells that function in opening and closing the valves.

Hinge line: In bivalves, the area along the upper margin where the two valves are hinged. See Hinge Plate.

Hinge plate: In bivalves, the infolded dorsal margin of a valve, carrying the hinge teeth.

Hinge teeth: Shelly structures (usually in series) along or under the dorsal margin of a bivalve shell, fitting into sockets in the opposite valve and serving to assure accurate closure.

Holarctic: A term used to designate the combined biogeographic area of the Palearctic and Nearctic regions; an organism native to this area.

Holdfasts: Fingerlike extensions at the base of seaweeds, such as kelp, that serve to attach the plants to rocks or other objects.

Holostomate (Holostomatous): Characterizing an aperture lip of a gastropod shell that is uninterrupted by any anterior canal, sinus or notch.

Holotype: The single specimen designated as `the type` by the original author of a species name at the time of the original description.

Homeotype: A specimen which had been compared with the original type material and found to be identical.

Homonym: One and the same name for two or more different genera or species.

Horny: Made of horn, a brown, fibrous organic substance.

Hyaline: Transparent; glassy.

Hybrid: The offspring produced through interbreeding of two biological species; since hybrids are not fertile they are unable to reproduce. (Hybrids are difficult to document in marine mollusks).

Hypoplax: An accessory shell piece between the valves ventrally on some burrowing clams.

Hypotype: Specimen or specimens of a species or subspecies re-described and figured subsequently to the original description. The term is becoming obsolete.

I

Ibid (ibidem): the same.

ICZN: International Commission on Zoological Nomenclature, an advisory group established by the International Zoological Congress to formulate a nomenclatural code and to render opinions in response to petitions by individual systematists.

Imbricate or Imbricated: Overlapping one another at the margins, shingle-like; to lay or arrange regularly so as to overlap one another.

Immersed: Condition of apical whorls in a gastropod shell when sunk within later ones and partially or entirely concealed by them.

Imperforate: Non-umbilicate. Not perforated or umbilicated; when the spire is quite flat, the umbilicus vanishes entirely when the whorls are so compactly coiled on an ascending spiral that there is no umbilicus, the shells are termed imperforate. Anomphalous is a preferred term.

Impressed: Indented. Pushed down, either as a line or an area.

Incised: Sculptured with one or more sharply cut grooves.

Incremental lines: Faint concentric growth lines.

Incrustation: An irregular deposit on the shell surface.

Incurved: Term used to indicate that a structure curves in upon itself, as do the umbones of certain bivalves, or the spines or lamellae of certain bivalves and gastropods.

Indigenous: Native to a specified place or the country.

Indo-Pacific: The faunal province comprising the shallow waters of the Indian and tropical western Pacific Oceans.

Inductura: Smooth shelly layer secreted by general surface of mantle, commonly extending from inner side of aperture over parietal region, columellar lip, and (in some genera) part or all of shell exterior. Preferred term often used, parietal callus.

Inequilateral: In bivalves, having the anterior and posterior sides of the valves unequal; the umbones nearer one end than the other.

Inequivalve: In bivalves, having the two valves dissimilar in shape and size.

Infauna: Sessile and mobile animals that spend part or all of their lives buried beneath the substratum.

Inflated: Applied to rotund shells of thin structure; swollen, increased unduly, distended.

Inflected or Inflexed: Turned inward, in the same direction.

Infralittoral zone: Beyond the reef-edge into deeper water.

Inhalant siphon: A tube-like organ which facilitates the intake of water. Initial whorl: In gastropods, the first visible whorl at the apex.

In litt (in litteris): In a written communication (in a letter).

Inner lip: Margin of aperture extending from base of columella to suture. In coiled gastropods, the aperture's inner margin, which usually consists of the parietal and columellar walls.

Insertae sedis: Uncertain classification.

Insertion plate(s): In chitons, flange-like structures at the sides of each valve, covered by the girdle in the living animal.

Insertion teeth: In chitons, flattened serrations on the insertion plates, projecting into the girdle.

Integument: An outer covering layer of molluscan soft parts; epidermis; cuticle.

Intercostal: Placed or occurring between the ribs.

Intermediate ribs: Secondary sculpture, smaller than the primary ribs.

Intermediate valve(s): Any one of the valves between the head and tail valves of a chiton.

Internal ligament: See Ligament; Resilium.

Interspace(s): The region between a pair of raised ribs, cords, ridges or other linear surface ornament.

Interstice: Spaces between the teeth, ribs or ridges.

Intertidal: The area between the high- and low-tide lines.

Intromittent organ: An external reproductive organ of males. Inv. invalid: Invalid name.

Invertible: Turn inside out; reverse position.

Involute: In gastropods (e.g., cypraea), coiling so that later whorls (or just the final whorl) envelop earlier whorls, such that the height of the aperture is the greatest vertical dimension.

Iridescent: Colors resulting from light refraction, not pigmentation.

Isodont: Descriptive of a bivalve shell that has a hinge with one pair of teeth and one pair of pits on one valve that articulate with two pits and two teeth on the other.

Isomyarian: Descriptive of a bivalve shell having the two adductor-muscle scars on the inner surface approximately equal in size.

J

Jaws: In many gastropods, a pair of horny structures within the pharynx that aid in the breaking up of food particles.

Jugum: In chitons, the raised area in the central top surface of a valve.

K

Keel: Carina or ridge. A prominent, sharply raised rib, generally marking an abrupt change of slope in the shell outline. See carina.

L

Labial: Pertaining to the lip of the shell.

Labial teeth: Tooth-like processes around the aperture of some gastropods, notably cowries.

Labrum or Labial lip: Outer lip or right margin of aperture of univalves.

Lacunae: Small pits or shallow depressions.

Lamella or Lamina (pl. lamellae or laminae) : A thin plate ridge or scale; in some bivalves, one of the small, raised, regularly arranged processes (Equivalent to teeth) on the hinge plates of the valves.

Lamellate: Covered with scales or thin plates.

Lamellibranchia: Alternative name for Bivalvia; Bivalvia preferred.

Lanceolate: Long and spearhead-shaped.

Lappet: A fold, small flap, lobe, or loose hanging portion.

Lapsus: Lapsus calami, Unintentional error in spelling.

Larva: The youngest stage of a mollusk after it hatches from the egg.

Larval shell: Shell of a molluscan larva before it undergoes metamorphosis, usually set off by a change of sculpture.

Last whorl: See body whorl.

Lateral: To the side of the midline of the body.

Lateral area: In chitons, the dorsal surface at either side of a valve.

Lateral section: More or less raised area on the tegmentum of valves II to VII of a chiton shell, bounded by the posterior edge of the valve and by a line from the midpoint to the anteriolateral edge.

Lateral teeth: Projections of the hinge line that are almost parallel to it and located anterior or posterior or both to the cardinal teeth. In gastropods, radular elements that lie between the central and marginal elements in each row. Tooth on bivalve hinge plate relatively distant from umbo, in contrast to cardinal teeth which are always near umbo.

Lectotype: A specimen subsequently selected from the paratypes to serve as the holotype in the absence of the bona fide holotype. A single specimen subsequently selected from a cotype or syntype series; equivalent of a holotype.

Left valve: Determined by having the beaks of a bivalve uppermost and the foot or pallial sinus toward you; the left valve is then at your left.

Length: In bivalves, the greatest horizontal dimension parallel to a line bisecting the adductor scars; in gastropods and scaphopods, the same dimension as height; in chitons, the greatest dimension parallel to axis of symmetry; in cephalopods, variously defined, but generally taken as the greatest dimension of the animal when the arms are stretched out parallel to their full extent.

Lenticular: Having the shape of a double convex lens.

Ligament: In bivalves, a horny elastic structure or structures joining the two valves dorsally, mostly posterior to the beaks, and acting as a spring that causes the valves to open when adductor muscles relax, the external ligament being under tension, the internal (sometimes called "cartilage" or "resilium") being under compression.

Ligament area: In some bivalves, the area between the umbones containing the external ligament.

Ligament cleft or pit: A narrow depression behind the umbones in which the ligament may lie.

Ligament shelf: A shelly internal or external platform on which the ligament lies.

Lip(s): In gastropods, the margin of the aperture: the inner lip (labium) extends from the base of the columella to the suture and is divided into a columellar lip and a prietal lip; the outer lip (labrum) is that

part of the lip furthest from the axis of coiling.

Lira (plural lirae): Fine linear elevation of shelly material usually within outer lip of some gastropod shells.

Lirate: Sculptured with fine (or thread-like) lines or grooves.

Lithodesma or Ossicle: A small calcareous plate reinforcing an internal ligament in some bivalves.

Littoral zone: The area between the high- and low-tide lines; the intertidal zone.

Logotype: The type-species of a genus by subsequent designation (an obsolete term).

Longitudinal: Along the length (e.g., of an apparently uncoiled gastropod shell). Not commonly used in the literature because of inconsistencies. See also Transverse.

Lumen: The duct or cavity of a tubular organ.

Lunule: Curved or flat heart-shaped area on the outside of a bivalve shell along the hinge line and anterior to the umbones.

Luteous: Yellow.

M

Macrophagous: Consuming large food.

Macroscopic: Barely visible to the naked eye.

Maculate or Maculated: Spotted or blotched.

Malacologist: One who studies the animal along with the shell.

Malacology: The branch of zoology that deals with the mollusk, the animal within the shell.

Malacozoology: The study of living mollusks in relation to their animate and inanimate environment.

Malleated: Surface having a hammered appearance.

Mammillated: With the protoconch rounded like a teat, or with dome-shaped protuberances on the shell surface.

Mammilliform: In the form of a breast.

Mandible: One element of a cephalopod beak or jaw.

Mantle(s): A fleshy layer or cape that secretes the shell of the mollusk. Integument surrounding internal soft parts of a bivalve which secretes the shell and which is attached to inside of valves at pallial line.

Mantle cavity: The space between the mantle and the visceral mass.

Mantle folds: In bivalves, the two extensions of the mantle that lie against each valve and enclose the internal organs.

Mantle lobes: In some gastropods, extensions from the mantle that extend partly or wholly over the shell.

Mantle scar: A broad area of attachment of the mantle edge in bivalves (e.g., sportella), too wide to be called a pallial line.

Margin: Extreme edge of valve of bivalve shell; also the thickened periphery of base of some

gastropods, notably cowries; sometimes used as equivalent to edge.

Marginal teeth or Marginals: The outermost series of teeth in one transverse row of the mulluscan radula. Medial: Central.

Median or Midline: A central line or axis.

Median section: Triangular area of the tegmentum of valves II to VII of a chiton shell, bounded by the anterior edge of the shell and by the lateral sections.

Mesoplax (Metaplax): An accessory plate behind the umbones of some Pholadacea.

Microphagous: Consuming microscopic food.

Middle area: In chitons, the triangular area on a valve between the narrow central area and the side areas.

Millimeter (mm): One-thousandth of a meter, 0.03937 of an inch; 25.4 millimeters are equal to one inch.

Miocene: Middle of Tertiary Period, dating back 13-25 million years.

Mollusca (Mollusk): Soft-bodied, highly developed animals without a backbone and with an exterior or interior shell.

Monomyarian: Descriptive of bivalve shell with only one adductor-muscle scar on the inner surface of each valve.

Monoplacophora: Most primitive of the six classes of mollusca.

Morphological: The structure or form; the morphological features of a spiral shell are the aperture, body, whorl, columella, outer lip and spire.

MS. manuscript: (pl. MSS.) unpublished work.

Mucociliary: A method of feeding associated with sedentary habits. Food particles are entangled with mucus in the gill leaflets and carried in a food groove to the mouth.

Mucro: In chitons, the raised apex on the dorsal surface of the tail valve.

Mucronate: Ending abruptly in a sharp point or spine.

Mucus or Mucous: A sticky, slimy, watery secretion.

Multispiral: With many whorls; especially as applied to gastropod opercula, particularly the trochids.

Muscle scar: Slight depression on the inner surface of the valve of a bivalve shell where a muscle is attached; in limpets, the scar left by the margin of the mantle and the foot retractor muscles. See also Accessory Scar; Adductor scar.

Myophore: A shelly structure that projects into the cavity of a bivalve valve (e.g., in the Pholadidae) and provides attachment for foot retractor muscles. See also Apophysis.

N

Nacre or Nacreous: Pearly; having an iridescent luster and a special composition of calcium carbonate and organic material. Sometimes called "mother of pearl."

Nautiloid: Resembling the nautilus in shape.

Nebulous: Cloudy; indistinct.

Neotropical: The biogeographic region including tropical Mexico, Central America, South America, and the West Indies.

Neotype (Neoholotype): A specimen selected to serve as the holotype provided that the holotype or paratypes can be proved to have been lost or destroyed.

Nepionic: Stage following the embryonic one.

Nest: A dwelling chamber constructed by certain bivalves, of agglutinated sand and rubble.

Nestling: Fixed in a crevice or crack.

Node: A small tubercle, knob or knot.

Nodose, Nodulose or Nodular: Sculptured with small tubercles, knobs, nodes or projections.

Nom. cons. Nom. conserv. (nomen conservandum): Otherwise unacceptable name. A name officially preserved by the ICZN in the interests of clarity or stability.

Nom. correct. (nomen correctum): Valid correction of a suprageneric taxon.

Nom. dub. (nomen dubium): Name of doubtful status, not identifiable. Uncertain name; insufficient evidence to permit identification.

Nom. emend. (nomen emendatum): Major change of status.

Nom. inq. (nomen inquirendum): Doubtful name requiring elucidation.

Nom. nov. (nomen novum): Replacement for a preoccupied name.

Nom. nud., nom. nd. (nomen nudum): Invalid name which lacks designation. Invalid published name; technically unacceptable. **Nom. null., nom. nl. (nomen nullum):** Invalid accidental change of name.

Nom. oblit. (nomen oblitum): A forgotten name, one which has not been used in literature for the last 50 years. Rejected name.

Nom. rej. (nomen rejectum): Name rejected permanently.

Nom. transl. (nomen transliteratum): Valid change of a name. **Nom. van. (nomen vanus):** Invalid intentional change of name.

Nominate: Subspecies (or subgenus) having the same name as the subdivided species (or genus) and the same type. (non-): Indicates homonyms.

Non binominal (non-binom.): Not conforming to the two-name system of nomenclature. Invalid name. **Notum:** Upper surface of a sea slug.

Nuclear tip: The apex of a gastropod shell.

Nuclear whorl(s): Small, and generally smooth and sculptureless whorls which have been formed within the egg and which constitute the apex of gastropod shells.

Nucleus: Earliest formed part of a shell or operculum. In gastropods, the initial whorls of the shell (protoconch) or the first-formed portion of an operculum; in bivalves, the prodissoconch.

Nymph: In bivalves, a thickened projection along the hinge margin that supports an external ligament or reinforces the normal hinge structure, as in gari.

O

Obconic or Obconical: In the form of an inverted cone; with a conical base and a flattened spire.

Oblique: Slanting. Sculptured other than axially, radially, or concentrically; i.e., other than parallel or perpendicular to a growing edge.

Obovate: Reversed ovate; having the greatest shell width above the aperture and toward the apex.

Obsolete: Said of a structure or sculpture that tends to disappear or remain undeveloped.

Obtuse: Blunt or rounded at the extremity; not pointed.

Ocelate (Ocellated): Marked with eye-like spots, i.e. central spots ringed.

Ochraceous: Shade of yellow, i.e. Brownish-yellow.

Odontophore: The radular or lingual ribbon of gastropods (the tongue).

Oligocene: Tertiary Period, older than Miocene, dating back 25-36 million years.

Omphalous: With umbilicus.

Operculate: With an operculum.

Operculum (pl. Opercula): A corneous or calcareous structure attached to the foot of a gastropod, serving to close the aperture when the animal withdraws into its shell.

Op. cit. (opere citato): Work cited.

Opisthogyrate: In bivalves, having the beaks pointed backward, or posteriorly; opposite of prosogyrate.

Orbicular: Circular or rounded. Order: A group of related superfamilies.

Orifice: A cavity or opening.

Ornament: Surface sculpture standing out in relief on shell surface.

Orthogyrate: In bivalves, having the beaks pointed toward each other.

Orthotype: The type-species of a genus by original designation (an obsolete term).

Ossicle: See Lithodesma.

Outer lip: In coiled gastropods, the outer margin of the aperture; the edge farthest from the columella.

Ovate (Ovoid): Oval; egg-shaped, with rounded base and apex.

Oviparous: Producing eggs that hatch sometime after leaving the body.

Ovoviviparous: Producing eggs that hatch within the body or immediately afterwards.

P

Pachyodont: Descriptive of bivalve shell with one heavy, blunt, and shapeless hinge tooth.

Palatal: Belonging to outer lip of the aperture of the gastropod shell.

Palaearctic: The biogeographic region including Europe, Asia north of the Himalayas, and Africa north of the Sahara. Paleocene: Earliest Tertiary Period, dating back 58-63 million years.

Paleontology: Study of fossils or extinct organisms.

Pallet(s): A pair of calcareous structures at the siphonal end of some woodboring bivalves, used to close the opening of the burrow.

Pallial: Pertaining to the mantle.

Pallial line: Impression or scar on the inner surface of a bivalve shell, parallel to the ventral edge, by the insertion of the muscles that attach the mantle to the shell. See also Mantle scar.

Pallial muscle: A muscle associated with the mantle of a bivalve.

Pallial sinus: In bivalves, an embayment of the pallial line, marking the space occupied by the retractor muscles for the siphons, hence always on the posterior part of the shell.

Papilla (Papillose): Nipple-like extensions on the animal's mantle.

Parapodia: Lateral expansions of the foot of certain opisthobranchs that can be used for swimming or to envelop the shell.

Parasitic: Living in or on another animal and deriving food from it. See also Commensal.

Parasitism: See symbiosis.

Paratype: One or more specimens used by the original author in his study of the new species or subspecies, but not necessarily from the same locality as the holotype.

Parietal: In gastropods, referring to the basal area of a helically coiled shell, just inside and outside the aperture and above the columella.

Parietal callus: In gastropods, a shelly thickening or deposit on the parietal wall.

Parietal region: That part of the body wall just within and just without the aperture, and posterior to the columella.

Parietal shield: A callus or glaze forming a thickening on the inner lip along the columellar border of the aperture of the gastropod shell.

Parietal tubercle: A node or denticle at top of parietal wall.

Parietal wall: In gastropods, the portion of the body whorl bordering the upper part of the aperture opposite the outer lip.

Pars, Part or Pro Parte: Part, in part.

Patellate: Saucer-shaped or limpet-shaped.

Patelliform: Shaped like a limpet shell; cap-shaped and without whorls. Patulus: Expanded; distended.

Paucispiral: With relatively few whorls, usually referring to spiral lines on operculum. See also Multispiral.

Pebbled: Sculptured with small, irregular bumps.

Pedal: Pertaining to the molluscan foot.

Pedal gape: In bivalves, a space between the valves through which the foot protrudes.

Pedal gland: A gland on the foot, especially in gastropods, secreting, for example, a lubricating substance to aid locomotion.

Pelagic: Inhabiting the open ocean, especially near the surface.

Pelecypoda or Pelecypods: An obsolete term for Bivalvia, a division of the Mollusca; animals with two hinged valves, i.e. bivalves. See Lamellibranchia and Bivalvia.

Pellucid specimens: Generally dead shells thinned by wave-action and bleached by actinic rays of the sun. Transparent or translucent specimens.

Pen: The internal stiffening rod of some cephalopods. **Penultimate:** Next to the last formed; refers to the last whorl but one.

Penultimate whorl: The whorl before the last whorl.

Perforate (Perforation): A small hole at the base of the body whorl in gastropod shells.

Periostracum: The outermost layer of a molluscan shell, composed of conchiolin in various textures; erroneously called "epidermis."

Periphery: In gastropods, the part of any shell or any individual whorl that is farthest from the shell's axis of coiling.

Peristome: In gastropods, the margin of the aperture, said to be entire or complete when it is not interrupted, as by the parietal area of the body whorl.

Persistent: Lasting throughout the development of a shell.

Phaneromphalous: With completely open umbilicus.

Phylogeny: The history of the evolution of a species.

Phylum: Division of primary rank in the classification of the animal and plant kingdoms.

Pillar: Same as columella; also the part of the body whorl to the left of the columellar lip. See Axis.

Pillar structure: Callused part of the body whorl to the left of the columella.

Plait(s): Spiral fold or ridge on the columellar lip (=plication). Spiral plication produced on the columella by local thickening of the shell. Folds on columella or pillar in univalves.

Planispiral: Coiled in a single plane.

Plankton: Life floating or drifting in the sea. **Planktonic:** Drifting or weakly swimming in the ocean.

Planorboid: Having a flattened planispiral coiling, the name deriving from the shells of the freshwater gastropod family Planorbidae.

Plastotype: The cast of a type-specimen in either plaster or plastic; with modern methods such reproductions are most accurate.

Plath: A chitinous or calcareous accessory of the complicated pholad shell, somewhat flat in shape and held in place by chitinous folds; e.g., protoplax, mesoplax, metaplax, hypoplax.

Pleistocene: Geological period between Tertiary and present, dating back approximately two million years.

Plica: (plural plicae) Fold or ridge on columella, a less conspicuous feature than columella fold but the two terms are more or less interchangeable.

Plicate: Folded or twisted or bearing plaits. Folded or plaited. Bearing plicae; also occasionally used here as equivalent to crenulate.

Plication(s): A raised ridge, fold, or plait, especially on the columella of a gastropod shell.

Pliocene: Latest of five Tertiary Periods, dating back to 13 million years.

Plug: The apical closing formed when the Caecidae discard the hindering juvenile portion of the shell. See Apical plug.

Polymorphic: A species having many different forms.

Porcelaneous: Having a translucent, porcelain-like appearance.

Porifera: Sponges with porous body-wall.

Postapical whorl: In gastropods, the whorl immediately adjoining the apical whorl.

Posterior: In gastropods, the direction opposite to that in which the head points when the animal is active; in bivalves, the direction in which the ligament, siphons, and pallial sinus lie; in chitons and cephalopods, the end opposite that on which the mouth and radula occur; the small end of scaphopods. See also Anterior; Dorsal; Ventral.

Posterior canal: Notch, or trough-like or tubular extension of the posterior apertural margin supporting the excurrent siphon. **Posterior extremity:** The rear end.

Posterior ridge: Ridge originating near or on the umbo and running diagonally towards posterior end of ventral margin of a bivalve shell.

Posterior section: Area of the tegmentum of Valve VII of a chiton shell bounded by the posterior edge of the valve and anteriorly by two lines from the mucro to the anteriolateral edge of the valve.

Posterior slope: Surface of valve of bivalve shell from umbo to posterior ventral margin.

Postero-dorsal surface: Dorsal surface of bivalve shell posterior to umbones

Postnuclear whorl: In gastropods, any whorl other than those immediately associated with the nucleus. Whorls subsequent to protoconch; ie. Teleoconch in univalves.

Predator: An organism that captures or preys upon another organism for its food; a predaceous organism.

Preoc., Preoccupied: Invalid because some author has previously used the same name for a different animal. **Presutural, Subsutural or Infrasutural band of groove:** The band or groove before the seam separating whorls.

Pro: In place of. Proboscis: A long flexible snout-like head extension between tentacles. In some mollusks, a tubular extension of the head, with the mouth at the end.

Process: Part of a shell or organism that projects outward from the main mass or body.

Prodissoconch: The embryonic shell in bivalves and scaphopods. See also Nucleus.

Produced: Prominently extended, elongated.

Propodium (pl. propodia): The front or anterior division of the gastropod's foot.

Prosobranchia: Group of marine mollusks with frontal gills.

Prosogyrate: Turned forward; in bivalve shells, having the beaks directed anteriorly; opposite of opisthogyrate.

Protandric (Protandry): Reference to a hermaphroditic organism that starts in the male stage.

Protoconch: Embryonic shell, present in the adult as the apical or nuclear whorls and often clearly demarcated from later whorls by change of sculpture. In gastropods, the apical or nuclear whorls of a shell, generally clearly demarcated from the later whorls. The larval shell of a univalve, frequently different in design, texture, or color from the adult shell; the rudimentary or embryonic shell of a bivalve

mollusk is called a prodissoconch. See also Nucleus.

Protoplax: Long, narrow accessory plate, in one piece or longitudinally divided into two at anterior end of dorsal margin of the Pholadidae.

Pseudoumbilicus: Depression or cavity in the base of the shell, involving only the body whorl, so that it is not a true umbilicus.

Punctate: Pitted with minute depressions like pin-pricks or punctures, often occurring in lines.

Puncto-striate: Both lined and spotted or pitted.

Pustule: Small, rounded protuberance on shell surface, smaller than tubercle.

Pustulose: Marked with pustules or pimple-like projections.

Pyriiform: Pear-shaped. **Q Quadrate:** Squarish or rectangular in shape.

Q

R

Rachiglossate radula: One with two laterals and a single central tooth. See Rhachiglossa.

Radial: In bivalves, radiating from the umbones toward the ends and lower margins.

Radial lines: Radiating in relatively unbroken lines from the beaks of bivalves, the apex of gastropods, or the mucro of chitons, as contrasted with concentric.

Radiating: Spreading in various directions

Radula: (pl. Radulas or Radulae). [Arasplike structure](#) in the mouth of all mulluscan groups except bivalves, composed of chitinous material and arranged as a long, coiled band set with serial or transverse rows of teeth, each transverse row generally consisting of central, lateral, and marginal teeth. Used by snails, chitons, tusk shells and cephalopods in feeding.

Recurved: Hooked or bent; said of the siphonal canal in some gastropods, which may be turned so far backward that its end is not visible when the shell is held in normal orientation.

Reflected: Turned outward and backward at the margin.

Reflexed: Turned outwards or in opposite direction.

Resilifer: On a bivalve shell, a socketlike structure that supports the internal part of the hinge ligament (resilium). See also Chondrophore, Fossette.

Resilium: A chitinous pad associated with bivalve hinge; causes shell to open when adductor muscles relax. See also Cartilage; Ligament.

Resting stage: A point at which the molluscan shell is not being enlarged to accommodate growth, often marked by a thickening or ridge left on the shell surface.

Reticulate(d): Forming a network of intersecting lines. See Cancellate.

Reticulation: Pattern formed by obliquely intersecting threads or linear ridges of ornament.

Revolving: Turning with the whorls, or spirally.

Rhachis: A stemlike central gill axis supporting other elements.

Rhachidian (or rachidian): the central tooth of a radular row.

Rhachiglossa: A group of mollusks containing a radular ribbon with three longitudinal rows of teeth (i.e. Miatridae, Muricidae). See Rachiglossa.

Rhinophores: The posterior pair of tentacles on any opisthobranchs, especially nudibranchs.

Rhipidoglossate: Having a radular dentition in which the marginal teeth are numerous, resembling the ribs of a fan.

Rhomboidal: With four more or less equal sides and no right-angled corners.

Rib(s): Round-topped elevated ridge of moderate width and prominence. An elongated structural element: in gastropods, spiral (following the direction of coiling), axial (parallel to the axis of coiling), or oblique; in bivalves, radial or concentric. See also Costa.

Riblet(s): A small or narrow rib.

Ridge: Sharp-edged elevation of shell surface occurring as a single line.

Right valve: See Left valve.

Rimate: Fissured; with a chink.

Rostrate: Drawn out into a beaklike process.

Rostrum: A beaklike process or part; usually used describing the anterior end of bivalves.

Rubble: A dense accumulation of broken shells, coral fragments, and stones on the sea bottom.

Rufous: Reddish, or reddish-brown. **Rugose:** Rough or wrinkled.

S

S. lat. s.l. (sensu lato): In the broad or general sense.

S. str. s.s. (sensu stricto): In the strict or narrow sense; that and no other.

Sargassum weed: A brown alga found on the open ocean, especially in the Atlantic.

Scabrous: Roughened with irregularities. **Scalariform:** Loosely coiled as in "Scala" = Epitonium.

Scale: A sharp, raised element in shell sculpture; ornamentation on the girdle of chitons. Slightly or strongly raised ledge, usually very small and often on a rib.

Scalloped: With shell margin showing regular flutings. Bordered by a series of equal semicircular or angled projections.

Scaphopoda: One of six (or seven) classes of mollusca. Like hollow tube or tusk; open at both ends.

Scar: A marking on the interior of a shell that indicates the attachment point of a muscle.

Scavenger: An animal that feeds on refuse or dead and decaying animal and plant material.

Schizodont: Descriptive of actinodont hinge of which the individual teeth have denticulated edges.

Sculpture: A pattern of raised or depressed markings on the shell's surface. Synonymous with ornament, the term preferred here.

Selenizone: Spiral band of crescentic growth lines, associated with marginal slit or foramen in certain univalves.

Septum: A transverse plate of shelly material. A calcareous plate or partition; one of the transverse partitions of a chambered shell; a dividing wall. See also Deck; Shelf.

Serrate: Notched or toothed at the edge like a saw. **Sessile:** Attached to some substrate; not free to move about.

Seta: (plural Setae) A bristle-like structure. **Shelf:** A plate of shelly material, e.g., the deck (q.v.) in crepidula. See also Septum.

Shelly: Composed of calcium carbonate rather than conchiolin; i.e., with a calcareous rather than a horny texture.

Shield: In gastropods, a thickened, distinctly margined callus on the body whorl near the inner lip.

Shoulder: Prominent angulation of the gastropod whorls, forming a shelf or ridge. In gastropods (e.g., acanthina), an angulation of the whorl at the periphery, forming the outer edge of a sutural ramp or shelf. The flattened part of a whorl below the suture and above a spiral angle.

Sic: Thus; a word indicating original spelling.

Side area: In chitons, the part of an intermediate valve nearest the girdle, separated diagonally from the middle area.

Side teeth: In bivalves, hinge teeth on either side of the central teeth, at the ends of the hinge area.

Sinistral: Shell coiled in a left-hand spiral, i.e. counter-clockwise when viewed from the apex. Left-handed (as opposed to right-handed) in the gastropod shell having the aperture on the left side of the shell facing the observer when the apex is held upward. See also Dextral.

Sinuuous or Sinuate: Undulating, winding or wavy and turning in an irregular course.

Sinus: A bend or embayment in growth lines, in the outer lip of a gastropod, or in the attachment scar of the mantle in bivalves. See also pallial sinus. Sinusigerid protoconch. Multispiral embryonic shell, ending in a T-shaped claw, that supports velum in certain free-swimming gastropod larvae.

Siphon(s): A tubelike prolongation of the mantle that carries water in or out of the mantle cavity.

Siphonal band: In olive shells, a broad, flattened spiral band at the shell's base, representing former ends of the siphonal canal or notch.

Siphonal canal: Tubular or gutter-like extension of lower part of apertural margin often continuous with collumella, also known as an anterior canal, for enclosure of anterior siphon.

Siphonal fasciole: In gastropods, a spiral, roughened band near the anterior end of the columella, marking successive positions of the siphonal notch.

Siphonal furrow: In false limpets, a groove on the shell's interior, containing the siphon.

Siphonal notch: In olive shells, the broad opening at the base of the aperture from which the siphon protrudes; in turrid shells, a notch or shallow embayment on the outer lip from which the anal siphon protrudes.

Siphonal ridge: In certain gastropods, a spiral ridge at the shell's base composed of former ends of the siphonal canal.

Siphonostome or Siphonostomatous: Descriptive of shell with a discontinuous peristome, interrupted anteriorly by a sinus that may be prolonged into a shell siphon--called the siphonal notch.

Slit band: In gastropods, a spiral band of crescentic growth lines ascending the whorls of the shell and marking the successive positions of a slit in the outer lip of the aperture. Also called the selenizone.

Slope: One face of an angled bivalve shell, whether anterior, posterior, or central.

Socket: In bivalves, a recess for the reception of a hinge tooth or a chondrophore from the opposite valve.

Sp. ind., Species indeterminata: Species not identifiable from original description.

Spatulate: Having the shape of a spatula; oblong with an attenuated base. **Species:** The subdivision of a genus, distinguished from all others of the genus by certain permanent features called specific characters.

Spec. nov. (species nova): New species.

Spicule(s): A hard needlelike body in the integument (especially in chitons), serving as stiffening.

Spine: Spiky or thorn-like protuberance on shell surface; may be flattened or rounded, foliated or pointed at outer end, solid or tubular.

Spinose: Ornamented with spines or thornlike protuberances. **Spiral:** Revolving, as lines going in the direction of the turning of the whorls.

Spire: In gastropods, the visible part of all whorls except the final, or body, whorl.

Spire angle: Angle formed by two tangents to the opposite sides of a gastropod shell with two or more whorls.

Spoil banks: Banks and islands formed as a result of dredging operations.

Squamose: With scales.

Stenozonal: Having a narrow zone of distribution.

Stepped or Turreted: With whorls resembling a series of steps viewed in profile.

Stria (pl. striae): Very fine, incised groove or furrow anywhere on shell surface, sometimes called striation.

Striate(d): Sculptured with fine incised lines or grooves.

Striation: A form or pattern of striate sculpturing.

Stromboid notch: In winged conchs, a shallow notch on the lower end of the outer lip from which the animal's right eye protrudes.

Subdued: Weak, not evident.

Subgenus: Group of species collectively forming a natural division of a genus.

Subglobular: Almost round.

Sub-littoral: Below low tide level.

Subspecies: A geographically defined group of populations comprising individuals which differ in certain characters from other such subdivisions of the species.

Substrate or Substratum: The lower layer or basis of deposited matter. The sea floor or other base for attachment, crawling, or burrowing by a mollusk.

Subsutural: Below a suture.

Subtidal: Just below the low-tide line.

Suffused: Overspreading; to over spread as with color; to cover the surface.

Sulcus (pl. sulci): A furrow, fissure, slit or groove; as applicable to cowries, it denotes the colorless dorsal line.

Sunken: Indented or depressed. See also Impressed.

Superfamily: Group of related families.

Supralittoral Zone: Beyond high tide mark; up the beach.

Suture: In gastropods, the spiral line that marks the junction of the whorls; in chitons, the junction between girdle and valves.

Symbiosis: To live together; a condition in which two animals, two plants, or a plant and an animal live in partnership. The relationship can be that of commensalism, where one organism benefits from activities of the other; parasitism, where one organism lives on another to the detriment of its host; or mutualism, where both organisms benefit from the association.

Sympatric: Formation of two species at one location.

Synonym: Each of two or more different names for the same species, genus or other taxon. Customarily, the later of two different names that have been given to a single taxon; technically, both are synonyms, the earlier being the senior and the later the junior synonym.

Syntype: One of several specimens collectively designated type of a species. See cotype, holotype and paratype.

T

Tabulate: Strongly shouldered; said of a formation near the suture of gastropod whorls (e.g., in Busycon) in which the later whorl meets the previous whorl at approximately right angles, forming a flattened, horizontal ramp often bounded by a low carina.

Taenioglossa: An inappropriate term for a group of mollusks equipped with a radular ribbon containing generally seven longitudinal rows of teeth (i.e. Cypraeidae, Cymatiidae). Radula with each row consisting of a central, a lateral, and a pair of marginal teeth.

Tail valve: In chitons, the most posterior of the eight valves, differing in shape from the others.

Taxodont: In bivalves, a hinge dentition composed of alternating teeth and sockets, mostly similar in form, in a series of varying length.

Taxon: (plural Taxa) Any unit in classification, irrespective of rank; for example, a generic taxon is any unit treated as a rank between family and species, with no implication of whether it has generic or subgeneric status.

Taxonomy: The theory and practice of classifying organisms. Systematic classification.

Teeth: Interlocking projections from the dorsal margins of bivalve valves; projecting nodes in the aperture of gastropods; flattened serrations of the margins of chiton valves; the elements of the radula. The hinge teeth or raised lamellae on the hinge plates of bivalves are arranged in regular patterns and are important in identifications.

Tegmentum: Outermost layer, with sculpture and coloration, of a chiton shell.

Teleoconch: Entire shell, exclusive of protoconch.

Tentacle: An elongated extension on the head of gastropods or on the mantle of bivalves that serves as a sensory organ.

Terminal: At the extreme end, especially with reference to a cylindrical or long-ovate bivalve shell.

Terminal spots: A pair of spots at front or rear end of shell.

Tertiary: Uppermost of the three major geological eras since advent of well preserved fossil organisms in the Cambrian: i.e. Primary, Secondary and Tertiary eras.

Tessellated: Checkered; pattern of small squares, like mosaic.

Teste: According to oral testimony (by word of mouth). See also Fide.

Thread: A thin, elongated element in surface sculpture; lira; also, in bivalves, one of the structures secreted by a byssal gland for attachment to the substrate.

Tooth: In gastropods, a small triangular or elongated protuberance on the columellar or parietal wall or on the inside of the outer lip; in bivalves, a ridge along the hinge line.

Topotype: A specimen of the species or subspecies originating from the same type-locality.

Torsion: A 180 degree counterclockwise rotation of the gastropod visceral hump and mantle cavity occurring in early larval stage.

Toxoglossa or Toxoglossate: A group of mollusks containing a radular ribbon consisting of generally paired barb-like teeth and a poison gland (i.e. Conidae, Turridae and Terebridae).

Translucent: Allowing light to pass through, but not transparent.

Transverse: Right angles to the axis or length of shell. At right angles to longitudinal (used in a general sense but also with reference to the serial rows of teeth on some radulae). Crossing direction of spiral growth in gastropod shells and crossing concentric growth lines in bivalves.

Trapezoidal: Having a quadrate outline with one longitudinal dimension greater than the other.
Trigonal: Triangular in form or outline.

Trinomial Nomenclature: Three-name system of naming.

Trochoid or Trochoidal: Like an inverted spinning top, or like the shell of a Trochus having a pointed spire, flat sides and flat base.

Truncate: Abruptly cut off; applied to the square-ended appearance of certain bivalve shells, and to the abrupt termination of the columella in some gastropod shells such as planaxis.

Tubercle(s): Elevated knob-like projections or protrusion; larger than pustule.

Tumid: Swollen; enlarged.

Turbinate: Turban-shaped, with broadly conical spire and convex base, as in shell of turbo.

Turreted: Having a very high spire, the base usually flattened or slightly convex. In gastropods, tower-shaped, with a long spire and somewhat shouldered whorls. See also stepped.

Turriculate: Having the form of a turret; tower-shaped; spire whorls regularly stepped in outline forming a long spire with somewhat shouldered whorls; as in terebra.

Turriform: With a many whorled, slender spire.

Type: A fundamental structure common to a number of individuals, having the essential characteristics of a group; a specimen or specimens upon which a description of a species is based. see Holotype.

Type-figure: A figured specimen upon which the original description was based.

Type-locality: Locality at which the type specimen was collected. The locality of the holotype.

Types Species: The species which was designated type of a genus. Abbreviations: (OD) original designation. (SD) subsequent designation. (M) monotypy (only one species mentioned) (T) tautonymy (genus name based upon species name; i.e. *Spirula spirula*.)

U

Ultradextral: Having seemingly sinistral shell coiling; having the soft parts dextral, but with shell whorls being added above instead of below the periphery; hyperstrophic.

Umbilicate: Navel-like; with depressed cavity. Having an umbilicus.

Umbilicus: The hole around which the inner surface of a gastropod shell is coiled; imaginary axis passes through center of umbilicus. The opening at the base of a hollow columella, surrounded by the base of the body whorl.

Umbo (pl. umbones): The upper (or earliest) part of a bivalve valve, as seen from the outside, the youngest, terminal portion of which is the beak, best seen in an interior view of the valve.

Umbonal cavity: The space inside valves within umbones and under hinge plate.

Umbonal reflection: When dorsal line is turned up and over and in front of umbo in each valve; found in Pholadidae.

Umbonal ridge: In bivalves, an angled or rounded ridge beginning at the umbo and usually extending to the hind end of a valve.

Uncinus (plural uncini): In gastropods, a marginal or lateral tooth on the radula, more or less hooklike in shape.

Undulate: Having a wavy surface.

Unguiculate: Resembling a claw, or talon.

Univalve: A mollusk consisting of a single spirally coiled shell.

Unjustified emendation: Any deliberate alteration of an original spelling of a name; only a few causes for emendation are justified under the ICZN Code.

V

Valve: In bivalves, one of the two portions into which the shell is divided, the two valves usually joined by a hinge. In chitons, one of the eight plates comprising the shell.

Varicose: Bearing a varix or varices.

Varix (pl. varices): An elevated axial structure in certain gastropods, more prominent than ribs and generally more widely spaced, marking periodic resting stages in the animal's growth, during each of which a thickened outer lip developed.

Veliger: A molluscan larva fitted with swimming appendages.

Velum: Ciliated mantle flap by which a molluscan larva swims.

Venter: The abdomen, or belly; hence, the ventral surface.

Ventral: Pertaining to, in gastropods, that part of the shell that is lowermost when the animal is extended, i.e. the apertural face; in bivalves, the margin farthest away from the umbo; in chitons, the foot surface. See also Dorsal; Anterior; Posterior.

Ventral margin: In bivalve shells the edge or border which is directly opposite the hinge-line and beaks.

Ventral view: Base view.

Ventricose: Swollen, inflated.

Verge: Penis, male copulatory organ.

Vermiculation: A surface sculpture or irregular wavy lines or grooves.

Vermiform: Like a worm in shape.

Vicariant: Species with common ancestry for the closely related pair, usually very similar, that occupy adjacent areas separated by a barrier.

Vitreous: Glassy.

Viviparous: Producing live young.

Volution: Any complete turn in a spirally wound gastropod shell.

W

Whorl: Any complete coil of a spiral shell. In gastropod spires, an exposed portion of a volution between successive sutures. In spiral gastropods, one of the full turns of the shell.

Width: The greatest dimension at right angles to length or height.

Wing or Winglet: Terminal part of dorsal region of bivalve shell which is more or less elongate or triangular; here used to denote elongate extension such as that on Pteria rather than relatively shorter ear of Chlamys; also rarely used to denote an extension of outer lip margin of some gastropod shells.

X

Y

Z