The Freshwater Mussels of Ohio

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acuminate. Sharply pointed; terminating acutely.
aductor muscle (scar). Muscles connecting the two shells anteriorly and posteriorly, used to close the shells. The muscles leave characteristic scars on the shell where they attach.
alate. Having a wing-like projection of the two valves of the shell, extending dorsally beyond the hinge line. See wing.
alloytype. Type material of a species of the opposite sex to the holotype. See cotype, holotype, lectotype, neotype, paralectotype, paratype, syntype, toptype.
amphidetic. Having the ligament present on both sides of the umbo.
analogous character. One of two or more characters that are functionally similar but structurally and developmentally different.
anallus (pl. annuli). Major growth lines on the outside of the shell, often considered annular in nature.
anterior. The front part of something.
anterior adductor muscle (scar). See adductor muscle.
anterior protractor muscle (scar). A muscle used to move the foot; it has a characteristic scar.
apomorphic character. In a pair of homologous characters, the inherited change of a previously existing character into a new character. See pleisiomorphic character.
aposed. Set opposite to one another.
arculate. Curved like a bow, arched.
beak. See umbo.
beak cavity. See umbal cavity.
bivalvia. A class of the phylum Mollusca characterized by an external, two-piece, calcareous shell, a muscular foot, and the lack of a head or radula.
bradytictic. Reproduction in which the glochidia are overwintered in the marsupial demibranch of the female unionid. Also called winter breeders.
branchial aperture. An opening, formed by the mantle (pallial) margins, through which water passes into the branchial cavity. Same as incurrent aperture.
byssus (byssal thread). A filament or very few filaments of material by means of which the juvenile of some individuals of some species are attached to other, usually larger or heavier, objects; as a result, the juvenile remain tethered to a site on or in the stream substrate.
cardinal tooth. The anterior-most hinge teeth (when present). Often short and triangular. Also known as pseudocardinal teeth in the Unionacea.
claustra. Elongate ridges of the mesial-posterior hinge plate of anodontines which are neither parallel to nor homologous with the lateral or lamellar teeth.
clavate. Club-shaped.
compressed. Flattened from side to side; the opposite of inflated.
conglutinate. The packages of glochidia formed by the female; often resemble host prey items. See Watters (2008).
corrugated. Sculptured with undulating ribs or folds.
cotype. A specimen identified by the author of a species as an example of that species. May be part of the type series. See allo- type, holotype, lectotype, neotype, paralectotype, paratype, syntype, toptype.
depressed. Low, flattened.
dimyarian. Having two adductor muscles.
disc. The central portion of the shell.
divaricate. Spreading out widely, "V"-shaped, forked.
dorsal. Pertaining to, or situated on or near, the back.
dorsal suspensor muscles (scars). Minute muscles arranged in bundles beneath the umbo.
ecophenotype. A form of a species caused by environmental rather than genetic factors.
edentulous. Without teeth.
elliptical. Having the shape of an ellipse.
emarginate. Having a margin or an edge something less than a straight line; slightly concave.
equivalve. Having valves equal or very nearly so in size.
excurrent aperture. The opening through which water is expelled from a bivalve mollusc. Same as suprabranchial aperture.
extinct. A species that has been globally lost.
extirpated. A species that has been lost from a particular area (such as a state) but still exists elsewhere.
gills. See branchiae.
glochidium (pl. glochidia). The parasitic larva of freshwater mussels.
growth lines. See annulus.
hinge plate. The dorsal portion of the shell that may have interdigtating teeth; may be absent in some species.
holotype. The original specimen or illustration upon which the author of a species bases his description. See allotype, cotype, lectotype, neotype, paralectotype, paratype, syntype, toptype.
homologous character. One of a pair of characters in which one is derived directly from the other. Three or more characters are homologues if each gave rise to the next in linear sequence. Contrast with analogous character.
homonym. Taxonomic names that are spelled the same but were coined by different authors or at different times. The oldest name is the senior homonym and the valid name. Other names are junior homonyms. For example, Unio childreni Hanley, 1843 is a junior homonym of Unio childreni Gray, 1834. See synonym.
ICZN. International Code of Zoological Nomenclature, a collection of “rules” drafted by the International Commission of Zoological Nomenclature (1999), a paralegislative body that, in addition to writing the Code, rules on special cases.
impoundment. A portion of a river or stream that has been pooled by the presence of a dam.
incurrent aperture. The opening through which water is drawn into a bivalve mollusc by ciliary action. Same as branchial aperture.
inflated. Swollen from side to side; the opposite of compressed.
interdentum. The portion of the hinge plate positioned between the cardinal and lateral teeth.
iridescent. Rainbow-like colors produced from crystalline interactions in the shell.
lamellate. In reference to hinge teeth, blade-like.
lateral teeth. The posterior-most hinge teeth (when present). Often long and bladelike. Also known as pseudolateral teeth.
lectotype. One of several syntypes, designated by an author after the original publication of a species name as the type specimen; designated only where there was no original holotype. See allotype, cotype, holotype, neotype, paralectotype, paratype, syntype, toptype.
ligament. The non-living connection between the shells on the dorsum; acts as a spring to open the shells.
marsupium. The portion of the female gills or brachiae that are used to contain the glochidia until release.
microfossae. Minute muscle scars within the pallial line; lateral attachments of the mantle to the nacre.
mollusca. A phylum of soft-bodied animals typically producing a shell of calcium carbonate and/or conchiolin by means of a mantle and moving by means of a muscular foot.
monotypy. A species that became the type of a genus if it was the only species an author originally listed for the genus. Later additions by other workers, or the original author himself, are invalid. See original designation, subsequent designation, subsequent monotypy, tautonomy.
nacre. The prismatic inner lining of the shell; also called mother-of-pearl.
neotype. The designation made if the type material is lost, destroyed, or deemed inadequate for identification. See allotype, cotype, holotype, lectotype, paralectotype, paratype, syntype, toptype.
nomen dubium. A taxonomic name that cannot be confidently matched with a species because of deficiencies in the original description and/or illustration. Although it may act as a synonym or a homonym, it does not become the valid name for any taxon.
nomen nudum. A taxonomic name that was not validly introduced according to the ICZN rules. It has no taxonomic value and cannot be a synonym or a homonym.
nomen oblitum. A “forgotten” taxonomic name. If such a name is discovered to be a senior synonym or homonym, but it has not been used in the literature for the past 50 years, it may be disregarded under the ICZN Law of Priority.
oblique. Slanting or inclined; neither perpendicular nor horizontal.
obtuse. Angles greater than 90° and less than 180°.
orbicular. Having the form of an orb; round, spherical.
original designation. A designation made if a genus was described and the original author specified a species to be the type of the genus. See monotypy, subsequent designation, subsequent monotypy, tautonomy.
ovate. Having the shape of a chicken egg or of a longitudinal section of one; ellipsoidal but not elliptical (which see).
pallial line. The linear muscle scar that marks where the mantle attaches to the shell.
pallial retractor. A muscle that withdraws the distal mantle margin within the shell.
paradlectotype. A designation made if a species is described from a series of specimens or illustrations and the original author...
of the species did not choose one to represent the holotype; a subsequent worker chooses one as the lectotype. The remaining specimens from the type series are paralectotypes. See allotype, cotype, holotype, lectotype, neotype, paratype, syntype, toptype.

paratype. A designation made from remaining specimens of a type series if a species is described from a series of specimens or illustrations and the original author of the species chose one to represent the holotype. See allotype, cotype, holotype, lectolectotype, neotype, syntype, toptype.

patronym. A name formed by the addition of a prefix or suffix indicating relationship to the name of one's father or paternal ancestor; a name coined in honor of a particular person.

pedal levitor. A muscle that functions in the lifting of the foot. The proximal terminus is in or near the umbral cavity of the unionoid.

pedal retractor. A muscle that withdraws the foot within the shell.

periostracum. The non-living outer layer of the shell; may be eroded away in old individuals or completely lost in weathered or sub-fossil dead shells.

plesiomorphic character. The original, preexisting character in a pair of homologous characters. Contrast with apomorphic character.

plications. Parallel ridges or folds on the surface of the shell.

posterior. The back end of something.

posterior adductor muscle (scar). See adductor muscle.

posterior retractor muscle (scar). A muscle used to move the foot; it has a characteristic scar.

posterior ridge. A ridge extending from the umbo posteriorly across the dorsum to the posterior margin; may be prominent or barely perceptible.

proximal. Nearest to the point of origin or attachment.

pustule. A bead-like sculpture on the shell.

pyriform. Shaped like a pear.

quadrat. Square or approximately square.

rotund. Round or rounded out, spherical.

subsequent designation. A designation made if a genus was described with more than one species, but all but one are unidentifiable (nomen dubium); the remaining species becomes the type of the genus. See monotypy, original designation, subsequent monotypy, tautonomy.

subsequent monotypy. A designation made if a genus was described with more than one species, but all but one are unidentifiable (nomen dubium); the remaining species becomes the type of the genus. See monotypy, original designation, subsequent designation, tautonomy.

sulcus. On the shell, a depression or groove extending from the umbo to the ventral margin.

suprabranchial aperture. Same as excurrent aperture (which see).

sympleisiomorphic character. A homologous character shared by a group of taxa and having originated in an ancestor earlier than the common ancestor of the group.

synonym. Taxonomic names that apply to the same biological
entity. The oldest name is the senior synonym and usually is the valid name for the taxon. Other names are junior synonyms. For example, *Unio foliatus* Hildreth, 1828 is a junior synonym of *Obliquaria flexuosa* Rafinesque, 1820 because both names represent the same species. See homonym.
syntype. A specimen from the type series from which no holotype or lectotype has been chosen. See allotype, cotype, holotype, paralectotype, lectotype, neotype, topotype.
tachytictic. Reproduction in which the glochidia are not overwintered in the marsupial demibranch of the female unionoid. Fertilization, larval development, and parasitic period all occur within the same calendar year. Also called summer breeders.
tautonomy (tautonymy). A name applied if a list of species accompanies the original description of a genus, and one of those species names is an obvious variant of the genus name; that species becomes the type of the genus. For example, *Margaritifera margaritifera* and *Villosa villosa* are tautonomous names. See monotopy, original designation, subsequent designation, subsequent monotypy.
tooth. Interdigitating portions of the hinge of the two shells. Usually of two types: cardinal and lateral.
topotype. A specimen collected from the original type locality.

See allotype, cotype, holotype, paralectotype, lectotype, neotype, syntype.
triangulate. Having the shape of a triangle.
Tulberg layers. Blemishes in the nacre, often brown, gold, or gray.
type locality. The source of a species as stated by the original author. If no type locality was given, one may be designated by a subsequent worker. Type localities also may be amplified or corrected.
umbo. A projecting point or knob on a surface; specifically, the swollen dorsal region of a shell valve; plural umbos. Also referred to as beaks. Umbos may face each other or face forward.
umbonal cavity. The depression on the dorsal aspect of the inside of the shell that is the inner aspect of the umbo; may be deep or shallow.
valve. A single piece, actually half, of a bivalve shell.
ventral. Pertaining to, or situated on or near, the underside.
vernacular name. A name in the common native speech, as distinguished from scientific nomenclature.
wing. A projection of the valves on the dorsum forming a triangular process; may be either anterior or posterior to the umbo, or both.