

Appendix 3. Glossary of terms

Terminology modified from Henderson & Henderson (1920), Landman *et al.* (1996), and Arkell *et al.* (1957).

Ancylocone: a shell characterized by a planispiral or helical coil followed by a shaft or hook.

Ammonitella: The embryonic shell of an ammonoid terminating at the nepionic—or primary—constriction.

Antidimorph: one of the two opposite members of a sexually dimorphic pair.

Aperture: the shell opening at the end of the body chamber.

Apical angle: the predominant angle of whorl expansion from a helical apex as an expression of translation rate defined as follows: *Low* = $Ap < 45^\circ$; *Moderate* = $45^\circ \leq Ap < 90^\circ$; *High* = $Ap \geq 90^\circ$

Bifurcate: to divide in two; relating to ribs which split apart in approach to the venter.

Body chamber: the portion of the shell which accommodates the bulk of the organism.

Camerae: the gas and fluid chambers within the phragmocone used by the organism to control buoyancy.

Costa: a radial rib or ridge on the shell exterior which is not present on the internal mould.

Costal index: the number of costae along the flank over a distance equal to whorl height.

Coil: relating to a whorl turning around a central axis (see *planispiral*, *helical*).

Constriction: zone of impression with borders clearly demarcated by costae expressed as an inset furrow or notch-like plication often visible on the shell internal mould; continuous or discontinuous around the whorl circumference; depth—and occasionally breadth—exceeding that typical of costal interspaces within a given growth program; may represent a hiatus in shell development or punctuation of the baseline growth program, commonly associated with megastriae.

Contiguity: the degree to which whorls are in contact defined as follows: *Low* = whorls only slightly touching or with trailing flank costal depression; *Moderate* = trailing flank flattened or with slightly concave zone of impression; *High* = whorls tightly impressed with deep trailing flank furrow.

Dextral: mode of coiling to the right, in a clockwise direction.

Dimorphism: the presence of two distinct forms within the same species generally attributed to sexual differences.

Elbow: a section of limb recurvature in a heteromorph ammonite conch characterized by a bend of at 90° or less.

Foliole: a minor incision within a saddle (see *suture line*).

Furrow: a channel or groove characterized as a concave point of contact between two shell surfaces or the interspatial depression between costae.

Gyrocone: or *criocone*; a heteromorphic shell consisting of a planispiral coil with multiple whorls.

Hamiticone: a shell consisting of two or more straight limbs or shafts.

Helical: relating to whorl progression turning around an axis in a three-dimensional spiral.

Intercalary: of or relating to costae which are discontinuous around the whorl circumference, typically terminating along the flanks; occasionally referred to as secondary (discontinuous) ribs ‘inserted’ between primary (continuous) ribs.

Limb: a straight section of heteromorph ammonite shell free of helical coiling belonging to a conch characterized by multiple elongated sections.

Lira: a fine costa characterized as a minor ridge on the shell surface.

Lobe: a posteriorly (or apically) directed incision in the suture line.

Lobule: a minor incision within a lobe (see *suture line*).

Macroconch: the typically larger shell in a sexually dimorphic species considered to have accommodated the female animal.

Megastria: a prominent, thick, flared costa exceeding the height of those predominant throughout conch development; continuous or discontinuous around the whorl circumference; may represent a hiatus in shell development or punctuation of the baseline growth program, commonly associated with constrictions.

Microconch: the typically smaller shell in a sexually dimorphic species considered to have accommodated the male animal.

Multicostate: having costae that are numerous and closely spaced.

Nepionic: of or relating to the primary constriction immediately following the ammonitella.

Neanoconch: the juvenile shell extending up to two volutions beyond the ammonitella.

Orthocone: a shell consisting of a single straight or curving shaft.

Paucicostate: having costae that are widely spaced.

Peristome: the outer edge of the ammonite aperture.

Planispiral: relating to bilaterally symmetrical whorl progression around an axis on a single plane.

Plication: a furrow, or costal interspace which is present on the internal mould.

Phragmocone: the portion of an ammonite shell consisting of the gas and fluid chambers, or camerae.

Phylloid: being phylloceratoid in form with respect to rounded sutural elements.

Prorsiradiate: the direction of a costa that is slanting forward (adaperturally) toward the venter.

Protoconch: The portion of the ammonitella up to the first septal wall.

Polymorphism: the presence of a range of forms within the same species.

Rectiradiate: a radial costa perpendicular to the direction of shell growth that is slanting neither forward nor backward.

Retroversal: the terminal portion of a mature heteromorph ammonite shell comprising the body chamber which curves backwards in the direction of the juvenile conch.

Rursiradiate: the direction of a costa that is slanting backward (more adapically) toward the dorsum.

Saddle: an anteriorly (or adaperturally) directed incision in the suture line between lobes.

Septa: the walls which separate the camerae and provide structural support to the phragmocone in shelled cephalopods.

Septal approximation: the crowding of septal walls occurring at the onset of sexual maturity.

Sinistral: a mode of coiling to the left, in a counter clockwise direction.

Suture line: or *septal suture*, the often complex pattern occurring at the point of contact between a septal wall and the outer shell; in late Cretaceous heteromorph ammonites, the suture line consists of four distinct undulating lobes and three saddles.

Torticone: a shell coiled in a three-dimensional spiral.

Umbilicus: in ancyloconic and torticonic heteromorph ammonites, the breadth of space between the helical whorls centered on the axis of coiling.

Volution: a complete 360° revolution of shell.

Whorl: a generic term for any segment of shell which at one point enclosed the animal; in ammonite taxonomy, applied when considering shell dimensions—coiled, helical or otherwise—having origins in the premise of curvature.

References

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