

Classification of *Monotis* subgenera and species

(after Grant Mackie 1978)

Eomonotis

A subgenus of *Monotis* of small to medium size, almost equivalve to moderately inequivalve, with small to medium-sized, obliquely truncated, poorly separated, costate posterior ear, the posterior sinus being shallow or absent, and generally fine numerous radial ribs.

Entomonotis

A subgenus of *Monotis*, thin-shelled, medium to large adult size, subcircular to obliquely suboval outline, generally strongly inequivalve with a moderately to highly arched left valve and flat to slightly inflated right valve; posterior auricle moderate to large, unsculptured, well separated from disc, and with conspicuous broad posterior sinus; byssal ear moderately large, prominent; well differentiated radial sculpture in which primary ribs are narrow, high, and sharp, to broad, and low and rounded; ribbing often weakens posteriorly and may become obsolete.

Monotis (Entomonotis) intermedia

Thin-shelled *Monotis* of medium to large adult size, subcircular to obliquely suboval outline, generally strongly inequivalve with moderately to highly arched left valve and flat to slightly inflated right valve; posterior auricle moderate to large, unsculptured, well separated from disc and with conspicuous broad posterior sinus; byssal ear moderately large, prominent; radial sculpture well differentiated, primary plicae narrow, high, and sharp to broad, low, and rounded; ribbing often weakens posteriorly and may become obsolete.

Monotis (Entomonotis) richmondiana

Moderate to large *Monolis richmondiana* of obliquely suboval outline, with near-planar valve commissure, ribbing of up to 4 orders including 13-14 (left valve) or 16 (right) primaries, and dense fine low concentric lamellae.

Monotis (Entomonotis) richmondiana acutecostata

A form of *Monotis richmondiana* of moderate size, lacking concentric lamellae, with 12-16 primary ribs on the left valve and 17-20 on the right, with a well developed posteroventral sulcus on the left valve and generally a non-planar folded valve commissure, so that the otherwise uninflated right valve is saddle-shaped; the left valve is considerably inflated

umbonally and the beak lies at about the anterior two-fifths.

Monotis (Entomonotis) subcircularis

Entomonotis of moderately large size, sub-equivalve, outline subcircular to rather oblique; posterior ear only moderately separated, with low truncation angle, large posterior sinus and little or no ribbing; radial plicae strong, narrow, high, well differentiated, similar on both valves, crossed by fine, regular, low, concentric growth-lamellae.

Monotis (Entomonotis) subcircularis gigantea

A form of *M. subcircularis* with lower valve inflation, a higher primary plicae count, and possibly a smaller L/I-I ratio than the nominate subspecies, but in other features virtually identical.

Monotis (Entomonotis) subcircularis discordans

A form of *M. subcircularis* with discordant primary plicae counts (about 13 on the left valve and 17 on the right) and with subequal primary and secondary plicae which are much more prominent than tertiaries and quaternaries.

Inflatomonotis

A subgenus of *Monulis*, small size, sub-circular to suboval outline, markedly inequivalve, with a very strongly inflated *left* valve and flat or only slightly inflated right; radial sculpture of strong broad rounded ribs absent from obtusely truncated posterior ear.

Maorimonotis

A subgenus of equivalve to subequivalve *Monotis*, obliquely oval to suboval in outline, with small to obsolete unsculptured posterior auricle and relatively thick shell; radial ribbing is extremely variable in strength from strong to obsolete or absent, and broad and blunt; concentric sculpture absent, although irregular discontinuous low rugae may occur; a well-marked concentric step is present in the shell profile in the postneanic stage.

Monotis (Maorimonotis) routhieri

Shell moderate to large, oval, oblique and posteroventrally elongate, markedly inequilateral, almost equivalve, right valve only slightly less inflated than the left. Posterior ear tiny, seldom observed, not separated posteriorly from posterodorsal margin of shell, apparently unsculptured. Byssal ear very small, short, directed anteriorly; notch shallow, oblique, with rounded apex. Juvenile growth-pause marked by oval furrow and step from inflated juvenile shell to less inflated adult, at about H = 18 mm (range 9 mm to 36 mm). Radial sculpture

weak to extremely weak but never quite absent, consisting of low broad rounded plicae of irregular width and strength, frequently absent laterally, sometimes showing suggestion of alternation of broader and narrower plicae, but seldom clearly primary and secondary in insertion; interspaces linear. Shell material thick.

Monotis (Maorimonotis) maniapotoi

Maorimonotis of obliquely suboval outline, with relatively large: posterior ear, very early growth-pause, little inflated right valve and well developed ribbing of up to 3, rarely 4, orders.

Monotis (Maorimonotis) awakinoensis

Maorimonotis of moderate size and subquadrangular outline, with moderately inflated right valve, very small posterior ear, and broad low radial plicae of two orders, secondaries absent laterally.

Monotis (Maorimonotis) calvata

Shell of moderate size, obliquely oval, inequilateral, only slightly inequivalve; beak at about anterior third, umbo broad, low; posterior ear tiny; byssal ear short spatulate, with almost linear byssal notch; sculpture of few faint low broad radial plicae of one order with linear interstices, often obsolete, may be lacking; valves evenly inflated except for irregularly placed growth-pause producing prominent concentric steps; shell material thick (1-1.5 mm).

Descriptions derived from:

Grant-Mackie, J.A. 1978 Subgenera of the Upper Triassic bivalve *Monotis*. *New Zealand Journal of Geology and Geophysics*, 21(1), 97-111.

Grant Mackie, J.A. 1978 Systematics of New Zealand *Monotis* (Upper Triassic Bivalvia) – subgenus *Entomonotis*. *New Zealand Journal of Geology and Geophysics* 21(4), 483-500.

Grant Mackie, J.A. 1978 Systematics of New Zealand *Monotis* (Upper Triassic Bivalvia) – subgenus *Maorimonotis*. *Journal of the Royal Society of New Zealand* 8(3), 293-322.