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Dorsal shell wall in ammonoids

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In ammonoids, a soft body organ (possibly a supracephalic mantle fold), extending from the conch aperture secreted aragonitic wrinkles, forming a layer on the surface of the preceding whorl. The dorsal shell wall consists of the outer and inner components which were deposited sequentially, beginning at the aperture of the living chamber inwards. The dorsal wall attains its full thickness near the last septum. The outer component is visible in the apertural region and is smooth or wrinkled; it is called the wrinkled layer in the latter case. The wrinkles may be continuous, interrupted, or form isolated patches arranged in rows. The wrinkles are usually triangular in cross section. A further stage of dorsal wall development involves filling in the space between the apices of triangles, and then adding one or more inner prismatic layers from the inside of the living chamber. This pattern occurs at least in the postembryonic stage of all genera studied, belonging to five suborders of Ammonoidea ranging from Late Carboniferous to Late Cretaceous. In many genera, the outer component of the dorsal shell wall exhibits remarkable ontogenetic change in its ultrastructure and micro-ornament. It may be compared with the black film of Recent *Nautilus* shells with respect to place of formation. The outer component of the ammonoid dorsal shell wall is regarded as a product of organic secretion and carbonate precipitation in the area of the supracephalic mantle fold.

Key words: Ammonoidea, dorsal shell wall, ultrastructure, wrinkle layer, biomineralization.

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