INTRASPECIFIC VARIATION OF AMMONOID EMBRYONIC GROWTH STAGES AND ITS BEARING ON POST EMBRYONIC GROWTH

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Ammonoid growth is generally investigated through the quantitative study of variations in shell size and shape. Those few workers who consider the entire course of development report a turning point between embryonic and post embryonic development. This transition is characterised by more or less abrupt changes in shell shape, size and ornamentation. While most studies of ammonoid growth concentrate exclusively on post embryonic stages, comparisons between embryonic growth and the subsequent post embryonic stages could further our understanding of the appearance of many characters during the course of ontogeny. In addition, relations between embryonic and post embryonic modes of growth are still unclear. For example, it is not known whether the size of the embryonic shell influences the size of the mature conch, the number of whorls, the coiling pattern, etc.

Bibliographic quantitative data available about embryonic structures, although still insufficient, do provide a reasonable description of size and shape variability of embryonic shells for Ammonoidea as a whole. In contrast, little is yet known about interspecific variation between closely-related species and virtually nothing is known about intraspecific variation. The result is that there is almost no information about the embryonic shell in species diagnosis.

This work attempts to characterise intraspecific variation of the embryonic shell for *Hecticoceras (Sublunuloceras) discoides* (SPATH, 1928) from the Callovian of Burgundy.

Embryonic structures have been observed on 34 polished sections. Measurements of linear and surface area parameters are used to estimate the intraspecific variability of size and shape of embryonic structures (Fig.1). The results are compared with published data for other Ammonoidea.

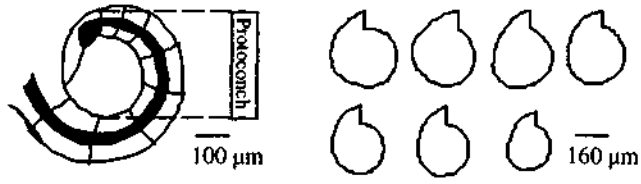

Fig. 1 - Position of the initial chamber (protoconch) and exemples of morphologic variations (for *H. (s) discoides)*.