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The integument of Cambrian chancelloriids

Stefan Bengtson and Xianguang Hou
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Details of the body surface of the chancelloriid *Allonnia* from the Lower Cambrian Chengjiang biota in southwestern China elucidate the nature of these enigmatic organisms. Rhombically arranged elements, about 30 x 60 um, are interpreted as representing imbricating platelets, the distal ends of which projected as spinules from the body surface. Comparisons with other chancelloriids suggest that the flexible integument was continuous with the aragonitic sclerites that sit on the surface like cactus spines, and that both were formed by an epidermal epithelium secreting a continuous exo- and endocuticle. In the sclerites, the exocuticle was mineralized; the unmineralized endocuticle and cellular extensions from the epithelium filled the interior of the sclerites. In the flexible integument the epithelium was overlain by endocuticle and unmineralized exocuticle. This structure of soft integument and sclerites is at variance with proposals of poriferan or ascidian affinity of chancelloriids but in accord with a coeloscleritophoran model.

Key words: Chancelloriidae, Coeloscleritophora, integument, sclerite, Cambrian, China.

Stefan Bengtson [stefan.bengtson@nrm.se], Department of Palaeozoology, Swedish Museum of Natural History, Box 50007, SE-104 05 Stockholm, Sweden;
Xianguang Hou [xghou@ynu.edu.cn], The Research Center for Chengjiang Biota, Yunnan University, Kunming 650091, China.