

***Trachyplax arctica*, a new multiplated problematic fossil from the lower Cambrian of North Greenland**

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Acta Palaeontologica Polonica 54 (3), 2009: 513-523 doi: <http://dx.doi.org/10.4202/app.2009.0026>

A new scleritome-bearing organism with eight sclerite types, *Trachyplax arctica* gen. et sp. nov., is described from the lower Cambrian Paralledal Formation of North Greenland. The originally calcareous sclerites are now silicified; no microstructures are preserved. The dominant sclerite type (A; maximum dimension 19.3 mm) is bilaterally symmetrical, strongly arched, with an oval shield showing co-marginal growth lines and a projecting rostrum with prominent radial ornamentation. A similar sclerite morphology can be identified in Silurian–Carboniferous multiplacophoran molluscs but the remaining sclerite types, which also display a combination of concentric and radial ornamentation, find no clear equivalents. Two models for scleritome reconstruction are presented, based on the relative abundance of the sclerites, but neither promotes a satisfactory assignment to a higher taxon. Despite the morphological dissimilarities, possibly reflecting the age discrepancy, reference to the Multiplacophora is most attractive and entails a substantial extension of the known geological range of that group.

Key words: *Trachyplax*, Problematica, sclerites, scleritome, Multiplacophora, Cambrian, Greenland.

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