Paper Number: 5344

# Thylacocephalan arthropods from the Upper Devonian of Poland.

Broda, K.[1]

[1]University of Silesia, Faculty of Earth Sciences. Będzińska 60, 41-200 Sosnowiec, Poland.
Email: krzybroda@wp.pl

---

Thylacocephala Pinna, Arduini, Pesarini & Teruzzi, 1982 [1] are among the most enigmatic arthropods. Their fossils are quite rare and well-preserved specimens are mostly found in deposits classified as the Konservat-Lagerstätten. Research led on their isolated carapaces is a source of most of data about these arthropods. Due to their abundance, phosphatised carapaces of thylacocephalan arthropods from the lower Famennian of the Kowala Quarry (Holy Cross Mountains, central Poland) Provide a good material for taphonomic study.

Taphonomical analysis of the collected specimens (n = 225) based on qualitative approach, where each specimen was classified to one of seven distinguished taphonomic grades [2] This analysis, combined with scanning electron Microscopy revealed that 71% of the total collection consist of complete or nearly complete specimens, and those which are incomplete have experienced purely taphonomic processes. The remaining 29% of the specimens, on the other hand, consist of damaged and fragmented carapaces - a result of biological modifications due to predation [2]. Carapaces of complete and nearly complete specimens were measured, and three morphotypes have been recognized. On the basis of the overall carapace shape and its ornamentation, these are considered to represent a single species, here tentatively assigned to *Concavicaris* sp. aff. *C. bradleyi.* Unfortunately, the final identification on the species level is difficult due to a lack of other structures, such as appendages. The exterior surface of the cuticule is ornamented by characteristic, polygonal microstructures. In order to state whether such a microornamentation pattern is species-specific, additional comparative data from other Late Devonian Thylacocephala is necessary. This ornamentation pattern may also be a key for final taxonomic identification of the lower Famennian specimens from the Holy Cross Mountains.

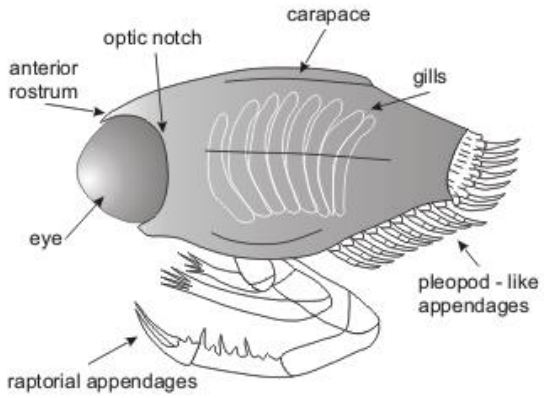


*Figure 1: General morphology of Thylacocephala, based on Dollocaris ingens.* [3]

*References:*

[1] Pinna, G. Arduini, P. Pesarini, C. & Teruzzi, G. 1982. Thylacocephala: una nuova Classe di Crostacei fossili. *Atti della SocietaÁ Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano* 123: 469–482.

[2] Broda, K. Wolny, M. & Zatoń, M. 2015: Palaeobiological significance of damaged and fragmented thylacocephalan carapaces from the Upper Devonian of Poland. *Proceedings of the Geologists Association*, 126: 589–598.
[3] Vannier, J. Chen, J.−Y. Huang, D.−Y. Charbonnier, S. & Wang, X.−Q. 2006. The Early Cambrian origin of thylacocephalan arthropods. Acta Palaeontologica Polonica 51 (2): 201–214.