



HAL
open science

Taxonomic revision of the first described stylophoran echinoderm: *Ateleocystites huxleyi* Billings, 1858

Bertrand Lefebvre, Mario Cournoyer, Phillip Isotalo, Thomas E Guensburg

► To cite this version:

Bertrand Lefebvre, Mario Cournoyer, Phillip Isotalo, Thomas E Guensburg. Taxonomic revision of the first described stylophoran echinoderm: *Ateleocystites huxleyi* Billings, 1858. 11th European Conference on Echinoderms, Bertrand Lefebvre; Thomas Saucède, Oct 2023, Villeurbanne, France. hal-04271134

HAL Id: hal-04271134

<https://hal.science/hal-04271134>

Submitted on 5 Nov 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



ECE 11

Lyon, France

ABSTRACT BOOK

11th European Conference on Echinoderms (ECE11)

October 16–20, 2023

Lyon, France

**Taxonomic revision of the first described stylophoran echinoderm:
Ateleocystites huxleyi Billings, 1858**

Bertrand LEFEBVRE¹, Mario E. COURNOYER², Phillip ISOTALO²
& Tom E. GUENSBURG³

¹ UMR CNRS 5276 LGLTPE, Université Lyon 1, Villeurbanne, France. bertrand.lefebvre@univ-lyon1.fr

² Musée de paléontologie et de l'évolution, Montréal, Québec, Canada. paleovision@videotron.ca,
p.a.isotalo@gmail.com

³ IRC, Field Museum, Chicago, Illinois, USA. tguensburg@fieldmuseum.org

The mitrate stylophoran *Ateleocystites huxleyi* was originally described based on four incomplete specimens collected in the Trenton Group (Hull Beds), Quebec, Canada (Billings, 1858; Wilson, 1946). Additional and better preserved material from the Guttenberg Formation (lower Katian, Upper Ordovician) of Illinois, Missouri and Wisconsin was subsequently assigned by Kolata & Jollie (1982) to a distinct species of the same genus: *A. guttenbergensis*. In the past twenty years, several new specimens of *Ateleocystites* were collected in the lower Katian (Upper Ordovician) of the Québec City area (Neuville Formation) and on the island of Montréal (Rosemont Member, Montréal Formation) and Ontario, Canada (Brechin Lagerstätte: Kirkfield and Verulam formations), as well as in coeval rocks of New York State, USA (Rust Formation).

The reexamination of the type material of *A. guttenbergensis* and *A. huxleyi*, along with the observation of the new specimens, largely confirms the validity of previous descriptions. However, an unexpected morphological variability is evidenced in the arrangement and number of imbricate supracentral elements forming the posterior half of the upper thecal surface of *A. huxleyi*. Examination of a larger number of specimens also indicates that all other characters supposedly diagnostic of *A. guttenbergensis* fall within the range of variation observed in *A. huxleyi*. This implies that *A. guttenbergensis* represents a junior synonym of *A. huxleyi*. This anomalocystitid mitrate was thus palaeobiogeographically widespread in Laurentia, though within an apparently short time interval bracketed in the early Katian. Several aspects of its morphology remain poorly documented, in particular the morphology of its two posterior spines. Their presence has been so far only deduced from the observation of 'sockets' for their articulation onto the postero-lateral corners of the marginal frame.

References

- Billings, E. 1858. On the Cystidae of the Lower Silurian rocks of Canada. *Canadian Organic Remains, Geological Survey of Canada*, **3**, 9–74.
- Kolata, D.R. & Jollie, M. 1982. Anomalocystitid mitrates (Stylophora-Echinodermata) from the Champlainian (Middle Ordovician) Guttenberg Formation of the Upper Mississippi Valley Region. *Journal of Paleontology*, **56**, 631–653.
- Wilson, A.E. 1946. Echinodermata of the Ottawa Formation of the Ottawa-St. Lawrence lowland. *Geological Survey Bulletin, Canada*, **4**, 1–61.