



HAL
open science

Class Stylophora: What's new since the last IEC (Nagoya, 2018)?

Bertrand Lefebvre

► **To cite this version:**

Bertrand Lefebvre. Class Stylophora: What's new since the last IEC (Nagoya, 2018)?. 11th European Conference on Echinoderms, Bertrand Lefebvre; Thomas Saucède, Oct 2023, Villeurbanne, France. hal-04271137

HAL Id: hal-04271137

<https://hal.science/hal-04271137>

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

Class Stylophora: What's new since the last IEC (Nagoya, 2018)?

Bertrand LEFEBVRE

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

Stylophorans are a clade of Palaeozoic (Wuliuan–Bashkirian) vagile echinoderms consisting of a single articulated appendage (aulacophore) and a more or less asymmetrical flattened theca. Along with glyptocystitid rhombiferans, eocrinoids and solutans, they were one of the major components of the cosmopolitan, low diversity echinoderm assemblages typical of soft substrate communities across the Cambrian–Ordovician boundary. In the first edition of the *Treatise on Invertebrate Paleontology*, stylophorans were elevated to class level (Ubaghs, 1968), and they were subdivided into the two orders Cornuta and Mitrata originally defined by Jaekel (1918). Over the past 50 years, the debates about their anatomy, mode of life and phylogenetic position within the deuterostomes have fueled an abundant literature, so that stylophorans have become one of the most studied and best known groups of Palaeozoic echinoderms.

Since the last International Conference on Echinoderms in Nagoya (2018) and the launch of the revision of volume S of the *Treatise on Invertebrate Paleontology*, major advances have been achieved for the chapter on Stylophora. The description of exceptionally preserved soft parts in the aulacophore and the theca (ambulacral and digestive systems) of cornutes from the Fezouata Lagerstätte (Lower Ordovician, Morocco) has provided new critical data on their anatomy (Lefebvre *et al.*, 2019), which confirmed the interpretation originally proposed by Ubaghs (1968). Extensive monographic studies devoted to mitrates (Lefebvre & Ausich, 2021; Lefebvre *et al.*, 2022a) and cornutes (Lefebvre *et al.*, 2022b) summarized and updated current knowledge on stylophoran anatomy, morphology, taphonomy, plate homologies and systematics, thus providing a firm framework for the chapter on Stylophora in the revised edition of the *Treatise*. Ongoing and future research includes additional reports of exceptionally preserved soft parts, as well as the description of several Cambro–Ordovician taxa from China and Morocco, which are essential for elucidating plate homologies and stylophoran phylogeny.

References

- Jaekel, O. 1918. Phylogenie und System der Pelmatozoen. *Paläontologische Zeitschrift*, **3**, 1–124.
- Lefebvre, B. & Ausich, W.I. 2021. New Siluro–Devonian anomalocystitids (Echinodermata, Stylophora) from Bolivia and Canada, and a reevaluation of skeletal homologies in mitrates. *Paleontological Journal*, **55**, 932–965.
- Lefebvre, B., Guensburg, T.E., Martin, E.L.O., Mooi, R., Nardin, E., Nohejlová, M., Saleh, F., Kouraïss, K., El Hariri, K. & David, B. 2019. Exceptionally preserved soft parts in fossils from the Lower Ordovician of Morocco clarify stylophoran affinities within basal deuterostomes. *Geobios*, **52**, 27–36.
- Lefebvre, B., Nohejlová, M., Kašička, L. & Zicha, O. 2022a. New Peri-Gondwanan occurrences of the Ordovician genus *Diamphidiocystis* (Echinodermata, Stylophora) – Implications for mitrocystitid palaeobiogeography and diversity, in: Hunter, A.W., Álvaro, J.J., Lefebvre, B., Van Roy, P. & Zamora, S. (eds.), *The Great Ordovician Biodiversification Event: Insights from the Tafilalt Biota, Morocco*. *The Geological Society, London, Special Publications*, **485**, 311–344.
- Lefebvre, B., Nohejlová, M., Martin, E.L.O., Kašička, L., Zicha, O. & Gutiérrez-Marco, J.C. 2022b. New Middle and Late Ordovician cornute stylophorans (Echinodermata) from Morocco and other peri-Gondwanan areas, in: Hunter, A.W., Álvaro, J.J., Lefebvre, B., Van Roy, P. & Zamora, S. (eds.), *The Great Ordovician Biodiversification Event: Insights from the Tafilalt Biota, Morocco*. *The Geological Society, London, Special Publications*, **485**, 345–522.

Ubags, G., 1968. Stylophora, in: Moore, R.C (ed.), *Treatise on Invertebrate Paleontology, Echinodermata 1(2)*. Geological Society of America & University of Kansas Press, Lawrence, S495–S565.