



HAL
open science

Quid novi Soluta?

Martina Nohejlová, Christophe Dupichaud, Bertrand Lefebvre

► **To cite this version:**

Martina Nohejlová, Christophe Dupichaud, Bertrand Lefebvre. Quid novi Soluta?. 11th European Conference on Echinoderms, Bertrand Lefebvre; Thomas Saucède, Oct 2023, Villeurbanne, France. hal-04271140

HAL Id: hal-04271140

<https://hal.science/hal-04271140v1>

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

Quid novi Soluta?

Martina NOHEJLOVÁ^{1,*}, Christophe DUPICHAUD² & Bertrand LEFEBVRE³

¹ Czech Geological Survey, Prague, Czech Republic. martina.nohejlova@geology.cz

² UMR CNRS 5276 LGLTPE, Université Lyon 1, Villeurbanne, France. christophe.dupichaud@univ-lyon1.fr

³ UMR CNRS 5276 LGLTPE, Université Lyon 1, Villeurbanne, France. bertrand.lefebvre@univ-lyon1.fr

Solutans are a small clade of extinct non-radiate echinoderms. Their stratigraphic range extends from the middle Cambrian (Miaolingian, Drumian) to the Lower Devonian (Emsian). Solutans are characterized by two distinct and unequal appendages inserted at opposite ends of their theca: a single free ambulacral structure (brachiole), and a longer stem-like appendage (homoiostele). Due to their unusual morphology, the taxonomic position of the class is still controversial. Solutans are considered either as a distinct class of blastozoans or as basal, pre-radial hemichordate-like echinoderms. This contribution aims at reviewing the major advances achieved since Caster's (1968) chapter on Soluta in the *Treatise on Invertebrate Paleontology*, with a special emphasis on the main results obtained since the last IEC in Nagoya (2018) and ongoing studies.

The description of *Pahvanticystis utahensis* (Guzhangian, Utah) confirmed the probable Laurentian origin of the class (Lefebvre & Lerosey-Aubril, 2018). Work in progress lead by S. Zamora and X. Zhu will describe the earliest non-Laurentian solutan from the Guole Biota (Jiangshanian, South China). The Fezouata Biota (late Tremadocian–late Floian) yielded exceptionally preserved soft parts (gut) in a *Castericystis*-like solutan, as well as abundant remains of *Plasiacystis mobilis* (originally described in the Darriwilian of the Czech Republic) and a new taxon, morphologically intermediate between *Minervaecystis* and *Plasiacystis* (Dupichaud & Lefebvre, 2022). The revision of late Tremadocian solutans from the Montagne Noire provided the first detailed reconstruction of *M. vidali* and the first report of *P. mobilis* in that region (Dupichaud *et al.*, in press). The very unusually-shaped Hope Shale solutan (Darriwilian, Shropshire) is still awaiting description (work in progress by K. Derstler & B. Lefebvre). The Late Ordovician genus *Dendrocystites* was reported for the first time in North Africa (Nohejlová & Lefebvre, 2022) and from a new echinoderm Lagerstätte in the Prague Basin (Nohejlová *et al.*, 2019). The Neuville Formation (lower Katian, Quebec) yielded abundant remains of a new solutan, with a surprisingly plesiomorphic ('*Castericystis*-like') morphology (work in progress by K. Derstler). Finally, the first ever described Silurian solutan, *Dehmicystis ariasi*, was recently documented in the Ludlow of Spain (Zamora & Gutiérrez-Marco, in press), thus filling a long stratigraphic gap between the Late Ordovician and the Early Devonian. Another Silurian solutan from Wales is also awaiting description (Dupichaud, in progress).

References

- Caster, K.E. 1968. Homoiostelea, in: Moore, R.C. (ed.), *Treatise on Invertebrate Paleontology, part S, Echinodermata 1(2)*. Geological Society of America & University of Kansas Press, S581–S627.
- Lefebvre, B. & Lerosey-Aubril, R. 2018. Laurentian origin of solutan echinoderms: new evidence from the Guzhangian (Cambrian Series 3) Weeks Formation of Utah, USA. *Geological Magazine*, **155**, 1190–1204.
- Dupichaud, C. & Lefebvre, B. 2022. Solutan echinoderms from the Fezouata Shale Lagerstätte (Lower Ordovician, Morocco): diversity, exceptional preservation and palaeobiogeographic implications. *Abstract book, Second Annual Meeting of IGCP 735, Cadi Ayyad University, Marrakesh, October 19-20 2022*, 23–28.

- Dupichaud, C., Lefebvre, B. & Nohejlová, M. In press. Solutan echinoderms from the Lower Ordovician of the Montagne Noire (France): new data and palaeobiogeographic implications. *Estonian Journal of Earth Sciences*.
- Nohejlová, M. & Lefebvre, B. 2022. Late Ordovician solutan echinoderms from the western Tafilalt, Morocco, 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**, 523–539.
- Nohejlová, M., Lefebvre, B., Nardin, E., Fatka, P. & Budil, P. 2019. New echinoderm Lagerstätte from the Letná Formation (Sandbian, Upper Ordovician) of Bohemia. *Abstracts, 20th Czech-Polish-Slovak Palaeontological Conference, October 20–23, 2019, Chečiny*, 39.
- Zamora, S. & Gutiérrez-Marco, G.M. In press. Filling the Silurian gap of solutans (Echinodermata) with the description of *Dehmicystis ariasi* n. sp. from Spain. *Acta Palaeontologica Polonica*.