



urn:lsid:zoobank.org:pub:915DB132-F277-4F5A-9E9A-EA57A44A193A

A reinterpretation of the solutan *Plasiacystis mobilis* (Echinodermata) from the Middle Ordovician of Bohemia*

BERTRAND LEFEBVRE^{1,4}, KRAIG DERSTLER² & COLIN D. SUMRALL³

¹ UMR CNRS 5276, Université Lyon 1 & ENS-Lyon, Villeurbanne, France

² Department of Earth & Environmental Sciences, University of New Orleans, Louisiana, USA

³ Department of Earth and Planetary Sciences, University of Tennessee, Knoxville, USA

⁴ Corresponding author, E-mail: bertrand.lefebvre@univ-lyon1.fr

*In: Kroh, A. & Reich, M. (Eds.) Echinoderm Research 2010: Proceedings of the Seventh European Conference on Echinoderms, Göttingen, Germany, 2–9 October 2010. *Zoosymposia*, 7, xii+316 pp.

Abstract

Reexamination of the type material of the solutan *Plasiacystis mobilis* from the Šárka Formation (Darriwilian) of Bohemia (Czech Republic) shows that its original reconstruction is a composite, with a mixture of elements belonging to two different solutans, a rhenopyrgid edrioasteroid, and a mitrate stylophoran. The “beaver-tailed” solutan *P. mobilis* is redescribed, and probable affinities with both *Castericystis* and minervaecystids are suggested. A second solutan is also described, but left in open nomenclature (solutan indet., gen. et sp. nov.). Possible biological and ecological implications of the presence of an isorophid edrioasteroid (?*Agelacrinites bohemicus*) attached to the theca of this new solutan are discussed. Other fossil remains formerly assigned to *P. mobilis* are also described (rhenopyrgid indet. and *Mitrocystites mitra*). The name “homoiosteale” is proposed for the stem-like appendage of solutans. Soluta is reaffirmed as a valid class name (instead of Homoiostealea).

Key words: Echinodermata, Soluta, reinterpretation, Palaeozoic, Ordovician, Czech Republic

Introduction

Solutans are a small clade of Palaeozoic echinoderms (Middle Cambrian-Lower Devonian). Their body consists in three distinct regions (Fig. 1): (1) a single anterior feeding appendage, interpreted either as an arm (e.g., Caster 1968; Ubaghs & Robison 1985; Daley 1995; Smith 2005) or as a brachiole (e.g., Bather 1913; Gill & Caster 1960; David *et al.* 2000; Parsley & Sumrall 2007); (2) a large, polyplated theca, which in life enclosed most internal organs; and (3) a posterior stem-like appendage. In the oldest and most plesiomorphic solutan (*Coleicarpus sprinklei* Ubaghs & Robison, 1988), this posterior appendage is an undifferentiated, polyplated stalk, used for permanent attachment (Daley 1996). It is similar in morphology to the stalk of basal eocrinoids (e.g., *Gogia kitchnerensis* Sprinkle, 1973; Parsley 1997). In more derived solutans, the posterior appendage was probably used for locomotion (e.g., Caster 1968; Ubaghs 1970; Kolata *et al.* 1977; Daley 1992), and its morphology is different, with two well-defined regions: (1) a highly flexible proximal part, made of imbricate ele-