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***Bichordites* from the early Eocene of Cuba: significance in the evolutionary history of the spatangoids**

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**Abstract:** The trace fossil *Bichordites monastiriensis* is found in early Eocene turbiditic sandstones of the upper-slope deposits from the Capdevila Formation in Los Palacios Basin, Pinar del Río region, western Cuba. The potential tracemakers of *B. monastiriensis* include fossil spatangoids from the family Eupatagidae. The record of *Bichordites* in the deposits from Cuba allows to suppose that Eupatagidae echinoids were the oldest potential tracemakers of *Bichordites* isp. and reinforce the hypothesis that the ichnological record are relevant in envisaging the evolutionary history of the spatangoids.

**Keywords:** trace fossil, *Bichordites monastiriensis*, Eocene, Capdevila Formation, family Eupatagidae.

## 1. Introduction

The order Spatangoida are an abundant group of irregular echinoids that are successfully adapted to an infaunal life habit (Smith and Crimes, 1983; Kanazawa, 1992). Their bioturbation activity is well known based on observations in the nature and to laboratory experiments made in aquaria (Nichols, 1959; Howard et al., 1974;

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