

## **A new Middle Cambrian stem–group echinoderm from Spain: Palaeobiological implications of a highly asymmetric cinctan**

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*Acta Palaeontologica Polonica* 53 (2), 2008: 207-220 doi:<http://dx.doi.org/10.4202/app.2008.0204>

A new exquisitely preserved stem group echinoderm (cinctan), *Lignanicystis barriosensis* gen. et sp. nov., is described from the Middle Cambrian of Los Barrios de Luna, North Spain. This displays a unique asymmetrical body plan with ventral projecting nodes that raised the lower surface above the substratum. There are four openings through the body wall: mouth, anus, atrium, and an aligned row of sutural pores of uncertain function. Unlike other cinctans, *Lignanicystis* has a strongly asymmetrical shape convergent with that of some cornute carpoids. Like cornutes, the test is also elevated above the substratum to allow water flow beneath the theca. In both cases this is probably an adaptation to life in higher water flow regimes.

**Key words:** Echinodermata, Homostelea, carpoids, functional morphology, Cambrian, Spain

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