

Oldest species of a marine mollusc discovered

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These are two specimen of *Polyconites hadriani*. Credit: Eulàlia Gili et al.

An international research team, with Spanish participation, has discovered a new species of mollusc, *Polyconites hadriani*, in various parts of the Iberian Peninsula. The researchers say this species, which is the oldest in its genus, adapted to the acidification of the oceans that took place while it was in existence. This process could now determine the evolution of modern marine systems.

The new [species](#) *Polyconites hadriani*, which was discovered in 2007, has been crowned the oldest in the Polyconites genus of the family Polyconitidae (rudists), a kind of extinct sea mollusc. To date, scientists had thought that the oldest mollusc in this genus was *Polyconites verneuili*.

"*P. hadriani* is similar in shape to *P. verneuili*, but it is smaller (with a

30mm smaller diameter), and with a thinner [calcite](#) layer to its shell (around 3mm difference)", Eulàlia Gili, one of the authors of the study and a researcher at the Department of Geology of the Autonomous University of Barcelona (UAB), tells SINC.

The new species was found in several parts of the [Iberian Peninsula](#) – in the Maestrat basin, the Vasco-Cantábrica basin, to the south of the Lusitania basin and in the Cordillera Prebética mountain range, "where it accumulated in dense conglomerations along the banks of the carbonate marine platforms of the Lower Aptian period (114 million years ago)", says Gili.

"This recognition of *P. hadriani* resolves the lengthy uncertainty about the identity of these polyconitids of the Lower Aptian", the researcher says in the study, which has been published in the *Turkish Journal of Earth Sciences*.

Adaptation to acidification of the oceans

Gili says the Lower Aptian was a convulsive period, during which significant climate change took place. *P. hadriani* existed at the time when the first oceanic anoxic event of the Cretaceous took place (between 135 and 65 million years ago). This event was characterised by a "lack of oxygen on the seabed, which led to the mass burial of organic carbon and climate cooling".

"The thicker calcite layer of the shell of this new species compared with that of its predecessor (of the *Horiopleura* genus), could have helped it adapt better to life in colder waters, which were more acidic due to the increased solubility of atmospheric CO₂", the geologist explains.

The researcher adds: "The response of these rudists to [ocean](#) acidification could apply to the future [evolution](#) of today's marine

ecosystems, above all among those kinds of organisms that form their shells or skeletons from calcium carbonate".

More information: Peter W. Skelton, Eulàlia Gili, Telm Bover-Arnal, Ramon Salas, Josep Anton Moreno-Edmar. "A New Species of Polyconites from the Lower Aptian of Iberia and the Early Evolution of Polyconitid Rudists". *Turkish Journal of Earth Sciences*, Vol. 19, 2010. [doi:10.3906/yer-0901-7](https://doi.org/10.3906/yer-0901-7)

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