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The bivalve *Pholadomya gigantea* in the Early Cretaceous of Argentina: Taxonomy, taphonomy and paleogeographic implications

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Pholadomya gigantea is a widely distributed Early Cretaceous bivalve mollusc. It has been recorded in the North Temperate, Tethyan, and South Temperate Realms. Based on recent field work and newly collected material from the Neuquén Basin, the taxonomy, mode of occurrence and palaeobiogeography of this species is reviewed. In the Agrio Formation (Valanginian-Barremian) *P. gigantea* is neither abundant nor dominant, but occurs throughout the unit. It was facies-dependent being restricted to well-oxygenated waters and soft to firm, sandy and bioclastic substrates of shoreface to inner shelf environments. The life habit of *P. gigantea* was similar to that of Recent *Pholadomya candida* , deep burrowing and sedentary, but it has not a pedal gape and accessory muscle scars related to valve closure. Thus a suspension-feeding habit, not a pedal-feeding system, may be inferred as is commonly suggested in other Jurassic and Cretaceous *Pholadomya* species. *Pholadomya agrioensis* is a valid taxon that is recorded in the Berriasian-Valanginian of Neuquén. It is similar in outline to *P. gigantea* and had probably the same basic palaeoecology, even though it has a blunt anterior margin, deep umbonal-ventral sulcus and distinct anterior ornamentation. Once in life position this species was capable of further digging in the sediment. This species probably burrowed in muddy substrates in the offshore zone. *Pholadomya sanctaecrucis* from the Valanginian of Europe and also recorded in Argentina is ornamented only with commarginal lines and should be removed to the genus *Homomya*.

Key words: Bivalvia, Anomalodesmata, *Pholadomya*, palaeoecology, taxonomy, palaeogeography, Argentina, Cretaceous.

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