



# Middle Cambrian protospongiid sponges and chancelloriids from the Precordillera of Mendoza Province, western Argentina

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With 8 figures

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**Abstract:** A Middle Cambrian faunule from different sections of the San Isidro region, Precordillera of Mendoza Province, western Argentina, include previously unrecorded and new material. Specimens in the collections are simple reticulosan hexactinellids determined as *Diagoniella* cf. *cyathiformis*, *Diagoniella* sp., (?) *Diagoniella* sp., indeterminate protospongioid spicule assemblages and several root tuft types. In addition a possible scleritome of *Chancelloria cruceana* RUSCONI, 1954 is re-described and illustrated, and sclerites assigned to *Archiasterella* are here described for the first time.

**Key words:** Middle Cambrian, protospongioid sponges, chancelloriids, San Isidro region, Mendoza Province, Precordillera Argentina.

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## 1. Introduction

The Porifera (sponges) are sessile filter-feeding organisms with an extremely effective and complex network of water-conducting channels and a defined bauplan. They are the oldest living metazoans. Their fossil record extends back to the Late Neoproterozoic although most of these reports are ambiguous and have been questioned (PISERA 2006). The beginning of sponge diversification during the Cambrian is relatively well known thanks to their very good preservation, from the Chengjiang fauna in China and the Burgess Shale in Canada, where even sponges with unfused spicules occur.

Spiculate sponges assigned to *Protospongia*, *Diagoniella* and *Kiwetinokia* and the first Cambrian anthaspidellid skeletal fragments, as well as sclerites

of *Chancelloria* have been described and figured from the Middle-Upper Cambrian carbonate platform and slope facies of the Argentine Precordillera (BERESI & RIGBY 1994; BERESI & BANCHIG 1997). A synthesis of Cambrian sponge occurrences in the Argentine Precordillera was given by BERESI (2003). *Protospongia asperoense* (RUSCONI, 1952) and *Chancelloria cruceana* (RUSCONI, 1954) were the first Cambrian species described from the San Isidro region, in the Precordillera of Mendoza Province. Disarticulated protospongiid spicules and chancelloriid sclerites were subsequently reported from this area by PERNAS (1964), DEVIZIA (1973), BORDONARO & MARTOS (1985), HEREDIA et al. (1987), and BERESI & HEREDIA (1995). Siliceous sponge spicules from diverse Cambrian and Ordovician sections of the Precordillera were described by MEHL & LEHNERT (1997).