

## Pragian (Lower Devonian) stromatoporoids and rugose corals from Zújar (Sierra Morena, Southern Spain) and their palaeogeographic affinities

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A first investigation of the Lower Devonian rugose corals in the Sierra Morena (Badajoz and Córdoba provinces, Southern Spain) was made by RODRÍGUEZ GARCÍA (1978). Based on this study, since 2003 a group of palaeontologists from the universities of Valencia, León and Madrid is studying the main outcrops of Devonian reefal carbonates in Sierra Morena (Research Projects BTE2003-2065 and GR-UCM/910231). At first, we studied the locality Guadamez-2 (with Emsian reefal carbonates) in the Badajoz province and the locality Peñón Cortado (with Pragian reefal carbonates) in the Córdoba province (MAY 2006; VALENZUELA-RÍOS et al. 2006; RODRÍGUEZ et al. 2010). Later we studied the locality Zújar at the boundary between the Badajoz and Córdoba provinces (38°29'30"N, 1°46'W) with reefal carbonates of Pragian age (PARDO ALONSO & VALENZUELA-RÍOS 2006).

Up to now, in the Pragian limestones from Zújar 10 stromatoporoid species and 5 rugose coral species could be identified. Stromatoporoids: *Nexililamina dipcreekensis* MALLETT 1971, *Plectostroma altum* (RIPPER 1933), *Stictostroma gorriense* STEARN 1995, *Stictostroma nunavutense* PROSH & STEARN 1996, *Stromatopora* ex gr. *rarissima* POČTA 1894 - *polaris* (STEARNS 1983), *Pseudotrurpetostroma* cf. *pellucida* (JAVORSKIJ 1955), *Syringostromella zintchenkovi* (KHALFINA 1961), *Coenostroma* aff. *pustulifera* (WINCHELL 1867), *Habrostroma centrotum* (GIRTY 1895), *Amphipora* sp. Rugose corals: *Martinophyllum ornatum soraufi* (RODRÍGUEZ GARCÍA 1978), *Grypophyllum jenkinsi* (STRUSZ 1966), *Loyolophyllum (Fasciloyolopyllum) qunlingensis* (CAO in CAO et al. 1983), *Joachimastraea barrandei* GALLE, HLADIL & MAY 1999, *Rhizophyllum* ex gr. *bohemicum* POČTA 1902.

*Hexagonaria soraufi* RODRÍGUEZ GARCÍA 1978, described from the Pragian of the locality Peñón Cortado by RODRÍGUEZ GARCÍA (1978: 340-342), is very similar to *Martinophyllum ornatum* JELL & PEDDER 1969, but has slightly smaller corallites and slightly less septa.

Distribution of the referenced species: *Nexililamina dipcreekensis*: Emsian-Eifelian of Queensland; *Plectostroma altum*: Pragian of Victoria; *Stictostroma gorriense*: Lower and Upper Emsian of Arctic Canada and Ontario; *Stictostroma nunavutense*: Lower Emsian of Arctic Canada; *Stromatopora rarissima*: Wenlockian of Bohemia (MAY 2005); *Stromatopora polaris*: Upper Lochkovian to Upper Emsian of Arctic Canada and similar forms in the Emsian of Victoria and Sierra Morena (MAY 2006); *Pseudotrurpetostroma pellucida*: Lower Devonian and Givetian of Siberia; *Syringostromella zintchenkovi*: Upper Lochkovian of Russia, Pragian of Victoria, Lower Emsian of Arctic Canada and Pragian to Emsian of Sierra Morena (MAY 2006); *Coenostroma pustulifera*: Middle Devonian of Michigan; *Habrostroma centrotum*: Lochkovian of New York and Arctic Canada (STOCK & BURRY-STOCK 2001, 2007) and Pragian of northern Spain (FERNÁNDEZ-MARTÍNEZ et al. 2010); *Martinophyllum ornatum*: upper Lochkovian or lower Pragian of Queensland; *Grypophyllum jenkinsi*: Lochkovian or Pragian of New South Wales and Givetian of Queensland; *Loyolophyllum (Fasciloyolopyllum) qunlingensis*: Lower Devonian of northwest China; *Joachimastraea barrandei*: Pragian of Koněprusy (Bohemia); *Rhizophyllum bohemicum*: Pragian of Koněprusy (Bohemia).

The Pragian fauna of Zújar is a typical fauna of the Old World Realm with remarkable close relationships to Arctic Canada and Australia (New South Wales, Queensland, Victoria). No significant relationships to the Eastern Americas Realm are visible. *Habrostroma* is a characteristic stromatoporoid genus of the Eastern Americas Realm (MAY 2006: 36). However, *H. centrotum* is known to have immigrated into the Old World Realm (STOCK & BURRY-STOCK 2001, 2007; FERNÁNDEZ-MARTÍNEZ et al. 2010). *Coenostroma pustulifera* is known from Michigan (Eastern Americas Realm), but *Coenostroma* is widespread in the Old World Realm (STEARNS et al. 1999: 53). Remarkable is, that none of the stromatoporoid species of Zújar is known from the famous Pragian reef complex of Koněprusy (Bohemia) (compare MAY 2005), meanwhile the rugose coral fauna show relations. Zújar has only *H. centrotum* in common with the Pragian fauna described by FERNÁNDEZ-MARTÍNEZ et al. (2010) from Northern Spain.

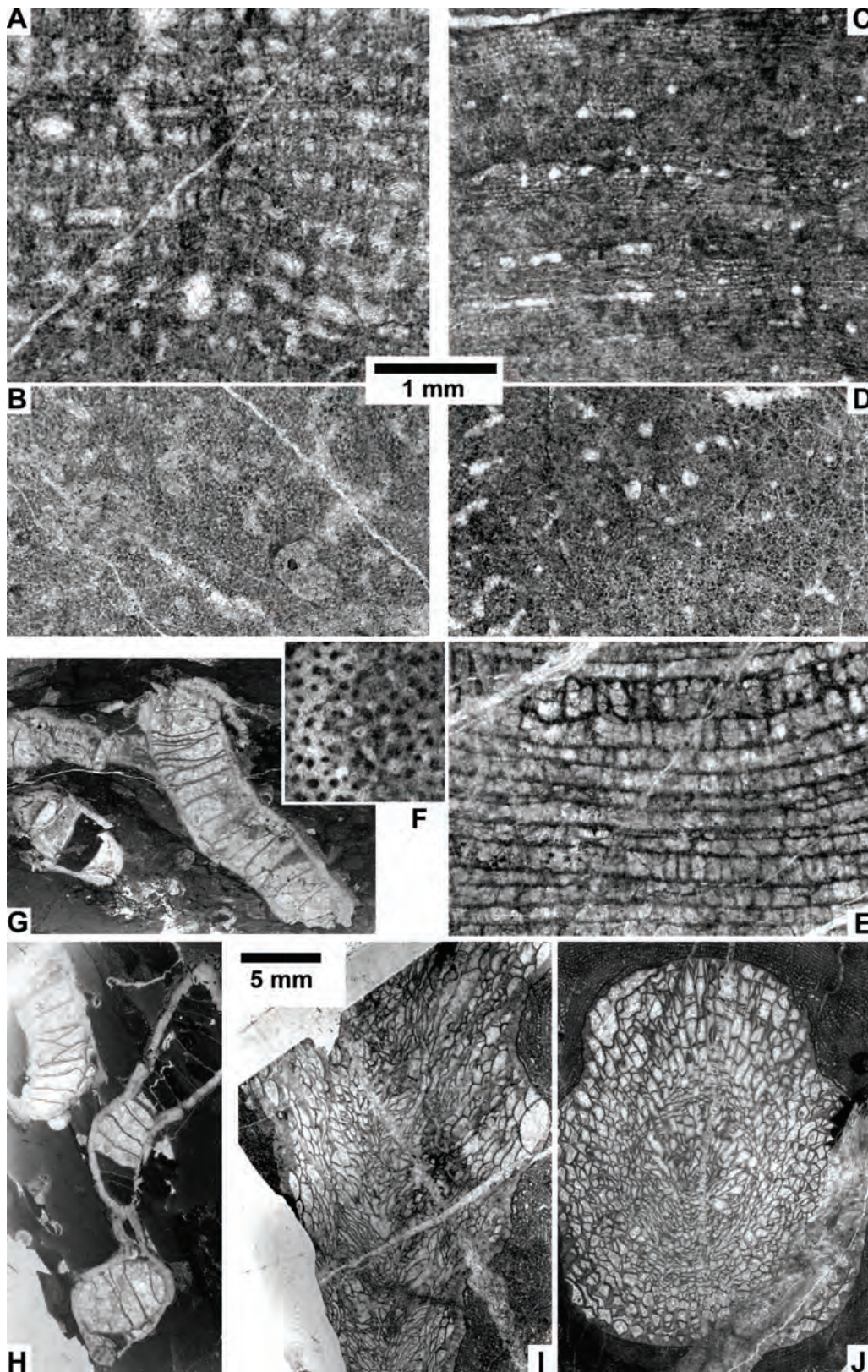


Plate 1: A-B: *Habrostroma centrotum* (GIRTY 1895), DPM-00276/Z10; A) longitudinal section, B) tangential section; C-D: *Coenostroma* aff. *pustulifera* (WINCHELL 1867), DPM-00276/Z33; C) longitudinal section, D) tangential section; E-F: *Nexililamina dipcreekensis* MALLETT 1971, DPM-00276/Z18; E) longitudinal section, F) tangential section; A-F) scale bar is 1 mm; G-H) *Joachimastraea barrandei* GALLE et al. 1999, DPM-00276/Z35; I-J: *Grypophyllum jenkinsi* (STRUSZ 1966), DPM-00276/Z24; I) longitudinal section, J) vertical section; G-J) scale bar is 5 mm.

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