



## Silurian of the Barrancos-Hinojales domain of SW Iberia: a contribution to the geological heritage of the Barrancos area (Portugal) and the Sierra de Aracena-Picos de Aroche Natural Park (Spain)

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Fossiliferous Silurian strata crop out extensively in the Barrancos-Hinojales region of the Ossa-Morena Zone (SW Iberia), where the structural complexity often makes precise stratigraphic studies difficult. The Silurian succession of this region differs from the Thuringian-like facies of the eastern Ossa-Morena areas (Sierra Norte of Seville) by the absence of the “*Scyphocrinites* limestone”, the greater lateral variation of clastic units, the relatively less diverse graptolite record and by the scarcity of benthic faunas.

The localities of Barrancos in Portugal, and of Encinasola and Hinojales river in Spain, are the sections more complete and representative of the Silurian stratigraphic and palaeontological development in the studied domain. All of them lie in natural areas protected by regional laws; such is the case of the Sierra de Aracena-Picos de Aroche Natural Park for the Spanish localities.

The Silurian of Barrancos corresponds to a condensed succession (80 m) of lydites, black shales and dark shales and siltstones. Within it, 19 graptolite biozones ranging from the lower Rhuddanian *Parakidograptus acuminatus* Biozone to the Pridoli *Monograptus bouceki* Biozone have been recognized (Piçarra in Robardet *et al.*, 1998).

The Encinasola sections, direct extensions of the outcrops at Barrancos, also have abundant Rhuddanian to Gorstian graptolites, but post-Ludlow strata are virtually unfossiliferous (Giese *et al.*, 1994).

The Silurian strata of the Hinojales area are middle Aeronian to lower Sheinwoodian graptolite black shales; Wenlock-Ludlow strata lack graptolites and are identified by palynomorphs (Mette, 1987, 1989).

These sections characterize a unique Silurian realm unknown in other parts of the Iberian Peninsula that are important for the paleogeographic reconstruction of northern Gondwana. Also the partly continuous graptolite succession documents critical episodes on marine life related with global climatic changes (Gutiérrez-Marco *et al.*, 1996).

Therefore, these Silurian sections should be recognized as important geosites that generate added value for the natural areas to which belong and which were originally

established to protect biodiversity in their original ecosystems and landscapes. But at the moment this geological heritage is not appreciated as a scientific resource of international interest by the local government agencies.

In our opinion, these Silurian geosites should be reserved for scientific study because of their rarity and fragility, although the dissemination of scientific information in Barrancos could be provided by an interpretation center such as that being planned by the town hall, or by the new walking track created as a georoute by the private Noudar Nature Park in the same area.

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