



Raw materials and posible provenance areas of the variscite green beads from some Neolithic dolmens in the Cádiz province (SW Spain)

DOMÍNGUEZ-BELLA, SALVADOR ¹ & RAMOS MUNOZ, JOSÉ ²

¹Dpto. Ciencias de la Tierra. Área de Cristalografía y Mineralogía. Universidad de Cádiz.
11510. Puerto Real. Cádiz. Spain. e-mail: salvador.dominguez@uca.es

² Área de Prehistoria. Universidad de Cádiz. Facultad de Filosofía y Letras. 11001. Cádiz. Spain

Key words: raw materials, variscite, Neolithic, Iberian Península, Cádiz.

Green beads are an usual constituent in the Neolithic and Mesolithic burial materials and funerary trousseaus in Southwest Europe (particularly in the Iberian Peninsula and France). An interesting question in the European Neolithic studies has been during long time, the mineralogical, geochemical and typological characterization of these "green beads".

The description and characterization of these archaeological materials continue to be an interesting problem in the European prehistory, since the XIX th century in which Damour began with the study of some green beads found in the Celtic graves in France.

The record of Neolithic and Chalcolithic sites is very extended from north to the south of the Iberian Peninsula, with various examples in Spain and Portugal.

Different archaeological samples of green beads (mainly constituted by Variscite: $\text{Al}(\text{PO}_4) \cdot 2\text{H}_2\text{O}$) belonging to the Alberite and Tomillo dolmens (V th and IV th millenniums B.C.), from Cádiz province (SW Spain) have been studied.

The prehistoric communities that built these dolmens had a clear agropecuaric character. Our investigations confirm the existence of communities that were related with tribal economic and social formations, having productive capacity to generate agricultural and cattle excedents, in sedentary habitats of fertile countryside.

The presence of "exotic" products in this region, as the

variscite beads, cinnabar or great quartz monocrystals, with a geological origin related with remote production areas, reflects a big value of them as prestige or ritual objects, and introduces the question of the distribution nets phenomenon.

Geochemical, mineralogical and petrological techniques (XRF, ICP-MS, optical and electronic microscopy, XRD, FT-IR) are used to characterise the green beads from these archaeological sites. In this study, samples from the most important geological localities for variscite and related minerals in Spain and Portugal, placed at the northeast and west of the Spain and north of Portugal, have also been studied.

The obtained results of the geochemistry, mineralogy and petrology of both the archaeological and geological samples were compared by means of factorial analysis. This comparison allows us to discriminate the probably source areas for these Neolithic materials and, in consequence, establish the transport and the possible trade ways of these beads at the V th millennium BP in the SW of Iberian Peninsula. These results are also in relation with the recent discoveries of extraction areas of these raw materials and the vestiges of ancient mining activities in Zamora and Huelva provinces (west of Spain).

All these data are interesting in order to obtain conclusions about the interchange phenomenon and social features of these human social groups.