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About an old necklace bead of presumably Canary Islands origin

Key words: Iberian Peninsula, Canary Islands, Berbers, necklace bead, archaeology, Eneolithic, microanalysis, phonolites

Resumen:

La presente comunicación es relativa a una cuenta de collar trabajada en piedra volcánica, encontrada en un yacimiento de época eneolítica del centro de la Península Ibérica que, por su composición mineral próxima a la de yacimientos de las Islas Canarias, se presta a especulaciones sobre su procedencia. La posibilidad de que la cuenta de collar tenga su origen en las Islas Canarias reactiva la problemática de las relaciones primitivas entre Europa y África del Noroeste. Por otra parte, la forma "avanzada" de la pieza ilustra la resonancia de estructuras humanas a través del tiempo.

Abstract:

The reported finding gives evidence that a necklace bead, primitively worked in volcanic rock, arrived at the centre of the Iberian Peninsula to an Eneolithic site. The possibility of Canary Islands origin for the bead raises intriguing questions on early Europe-Northwest Africa relationships. On the other hand, the "advanced" form of the piece illustrates the resonance of human structures throughout time.

Zusammenfassung:

Der vorliegende Bericht beschreibt eine einfache, aus vulkanischem Gestein gefertigte Halsperlenkette, die kupferzeitlich das Zentrum der Iberischen Halbinsel erreichte. Ihr möglicher Ursprung auf den Kanarischen Inseln aufgrund der mineralischen Zusammensetzung wirft Fragen zur Problematik der Beziehungen zwischen Europa und Nordwestafrika erneut auf. Darüber hinaus zeigt die "fortgeschrittene" Form der Kette den Widerhall menschlicher Denkstrukturen über die Zeiten hinweg.

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Introduction

A tire-shaped bead from presumably Eneolithic era has been found in the archaeological site "Virgen de Siete Iglesias" in Matapozuelos (41° 25' N; 4° 47' W), Valladolid, Spain. The bead was repeatedly collected and rejected because it resembled almost perfectly the aspect of a toy car tire (Fig. 1). Finally, the specimen excited our curiosity and it was studied.

Material and methods

The bead is a lusterless black piece, 0.8 centimeter high, 1.6 centimeter wide, 0.6 centimeter in interior diameter and 2.1 grams in weight. Inside the piece is relatively smooth, whereas outside it shows the typical spaced marks that tires exhibit. The rigidity from its inorganic nature can be confounded with that expected for plastic materials largely exposed in the open air. When beaten against other solid, give out a ringing sound. This is the typical case in which the physical-chemical analysis methods become essential to gain information on the true nature of a material.

The bead was studied by microscopy, wavelength dispersive X-ray fluorescence (XRF-WDS), and radiography. Microscopic examination was performed on a Leica M655 microscope with use of a video system for reception of the enhanced images. These images were obtained photographically from the video screen. The apparatus used for XRF-WDS microanalysis was a Philips PW480 spectrometer with a Li/Ge-detector, working at both 50 kcps and 200 kcps. Conventional radiographic plate was obtained using a Philips x-ray unit for osteology diagnostic. The unit consisted of a x-ray generator, 150 kW in power, and a compact Diagnost2 tube. Also, specific gravity was measured by hydrostatic balance.

Results

Under an intense white light the piece is translucent and green in color. Microscopy study of the bead showed it as a fine grained compact lava (or slag), almost vitreous, grayish-green in color and with inclusions of green, red and white monocrystals (Fig. 2), as bear the volcanic rocks when the magma cooled. Microscopy also allowed us to see that it was carefully carved on one side by hand with aid of a spindle (possibly, fixed in a tubular support). Inside, there are remains of a brown material with appearance of mastic.

The radiographic plate after x-ray exposure showed the low porosity of the piece and its good conservation (Fig. 3).

Microanalysis indicated that the bead is a rock with sodium, calcium and silicium as major elements, with only a moderate amount of iron, potassium

and manganese, while magnesium is not present. (Fig. 4). This composition, extremely unusual for a natural sample, has a close resemblance to a type of phonolithes that we have seen in Canary Islands (La Palma, Complejo Basal de Fuerteventura and Aripe site, near Guía de Isora, Tenerife), rich in soda-iron piroxenes (as the dark green aegirine-augite or the blackish green aegirine) and apatite. Also, we have identified in the ground-mass of the bead small crystals of garnet, quartz (or vitrous nepheline) and diopside, frequent in these rocks.

Specific gravity measurement showed a value of 2.5 $g.cm^{-3}$. This result is consistent with a light weathering of the original material (the specific gravity of both feldspars and feldspathoids is 2.6 $g.cm^{-3}$).

Archaeologically, in basis of remaining findings in the site (Fig. 5) and surrounding settlements (Fuente Olmedo, Arrabal de Portillo, Samboal and Pajares de Adaja), the bead could be dated from 2600 years B.C. as pertaining to Spanish Bell-Beaker culture (Martín-Valls, 1974). In that period, the people of our area were distinguished for their craftsmanship in the production of adornments of all kinds. They used a variety of materials for necklaces, including foreign semi-precious stones (black onyx, variscite, turquoise, amber, jet, lignite,...) but no volcanic rocks such as that described above or similar (mainly found in the Canary Islands (González-Antón, 1990)). On the other hand, although the beadwork is typical of that used in Neolithic and Eneolithic age, bored with silex spindle (Noaín, 1977; Piel-Desruisseau, 1989), the bead form is not the usual discoid but more larger and wider. In addition, the peripheral decoration (Fig. 6), reminding one of the marks on Sumerian seals, those of car tires or the zigzags on ceramic vessels, is unusual on beads.

Conclusions

Usually, exotic pieces found in archaeological sites from Upper Paleolithic, Neolithic and Eneolithic era have been considered "prestige objects" and they were put in relationship with communities and/or elite with power of holding trading at a long distance (Jorge, 1992; White, 1993; Delibes de Castro, 1995).

As concerns the necklace bead of this study, possible early findings in our geographic area of archaeological pieces in volcanic rock were ignored due to lack of knowledge of their composition. The problem arises from the African origin of the piece and mainly from the possible Canary Islands point of departure. Today there is abundant evidence, mainly linguistic (Alonso, 1997a; Alonso, 1997b; The Editor, 1999) and genetic (Schwidetzky, 1963; Arnáiz Villena, 1997), favourable to admitting the same origin (Saharan, Proto-Berber or Proto-Amazigh) for Guanches, Tartesicians, Iberians, Etruscans

and Sumerians. The risk lies in stating that some thousands of years before the discovery of the Canary Islands by the Europeans, some people travelled from the Islands to the Iberian Peninsula, directly or through Berber land. Since Guanche people had no knowledge of navigation at the conquest time (Krzak, 1973; Anonymous, 1998), the question is who carried the bead to the Peninsula. Was it a Proto-Berber from the 2800 B.C. (during the first Berber expansion) that traded with the Guanches and then built a settlement in the present archaeological site? Or was it some Berber warrior, previously visiting an old site at the Canary Islands, left in passing during one of the multiple razzia that devastated the Castilian villages from 8th century (Tarik Ben Ziad) to the 11th century (Mohamed Aben Abi Amir, Al-Mansur-Billah)? We believe that no possibility can be discarded, even the first. We think that by 3000 B.C. (or much earlier), some primitive people (Serra Rafols, 1969; Laoust, 1992; Alonso, 1997a; Ben Madison, 1999) could cross both the 100 km that separate the Canary Islands and Continental Africa and the 40 km that separate North Africa and Spain, with simple watercraft and some dose of maritime savvy.

As concerns the shape of the bead, a key motif for the theory and apology of abstraction is the resonance between different old and modern human structures. The fascination arises when we investigate the principles behind similar forms in time and space. In our case, the question is related to a principle laid down in 1894 by Pierre Curie. Curie's Principle states that symmetric causes produce equally symmetric effects (Stewart, 1994). For example, this implies that structures with $D_{\infty h}$ symmetry are destined to rotate, either on a cord (as the necklace bead) or on an axis (as the tire in a car or a seal in a ring-seal). This is important, because for many purposes it is the symmetries of an object that are primary. We think that artists, anthropologists and scientists must share an intuitive and intellectual communion with the static of natural forms at a profound level.

In respect to the decoration, the zigzag representation is an old aquatic symbol. The presence of the zigzag on the edge of circular objects (symbol of the sky in its relationships to the land) has represented, for most cultures, the waters of the sea (or the mountains) that surround and limit the land world (Oceanos)(Champeaux, 1972). It can not be forgotten that symbolism and decoration are correlative and difficult to differentiate. This gives cause for a problem that individuals of our time have been trying fruitlessly to solve.

As concerns the possibility of using the bead as an amulet, in Mediterranean areas of the Iberian Peninsula, the belief that the only natural remedy against infertility are like-olivine green stones (mounted as a jewel), persists to this day (Salazar Agullo, 1999).

In conclusion, the reported finding only gives evidence that a primitively worked piece in volcanic rock arrived at the centre of the Iberian Peninsula to an Eneolithic site. However, the very high possibility of Canary Islands origin for the bead raises intriguing questions on early Europe-Northwest Africa relationships. On the other hand, the "advanced" form of the piece illustrates the resonance of human structures throughout time.

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Captions of figures:

Figure 1: Shape of the bead from presumably Eneolithic era found in the archaeological site "Virgen de Siete Iglesias" in Matapozuelos (41° 25´ N; 4° 47' W), Valladolid (Spain). (a) View from the pole whereby it was carved; (b) View from the another pole.
Figure 2: Monocrystal inclusions in the fine grained crystal lava in which is worked the necklace bead from Matapozuelos, Valladolid (Spain).
Figure 3: Radiographic plate after x-ray exposure of the necklace bead from Matapozuelos, Valladolid (Spain). (a) Polar view; (b) Lateral view.
Figure 4: XRF-WDS spectra of the necklace bead from Matapozuelos, Valladolid (Spain).
Figure 5: Archaeological findings in the site "Virgen de Siete Iglesias" in Matapozuelos, Valladolid (Spain).
Figure 6: Peripheral decoration marks of the necklace bead from Matapozuelos, Valladolid (Spain).

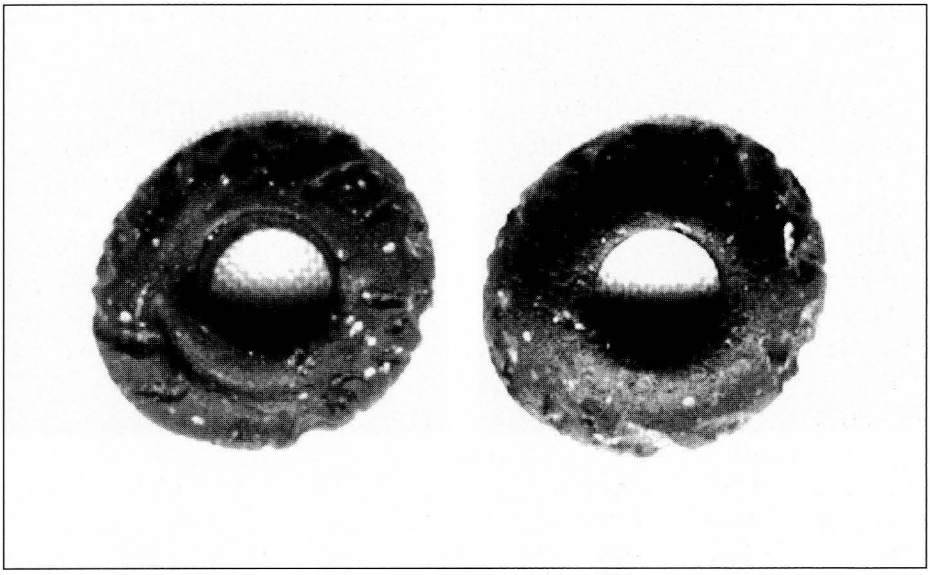
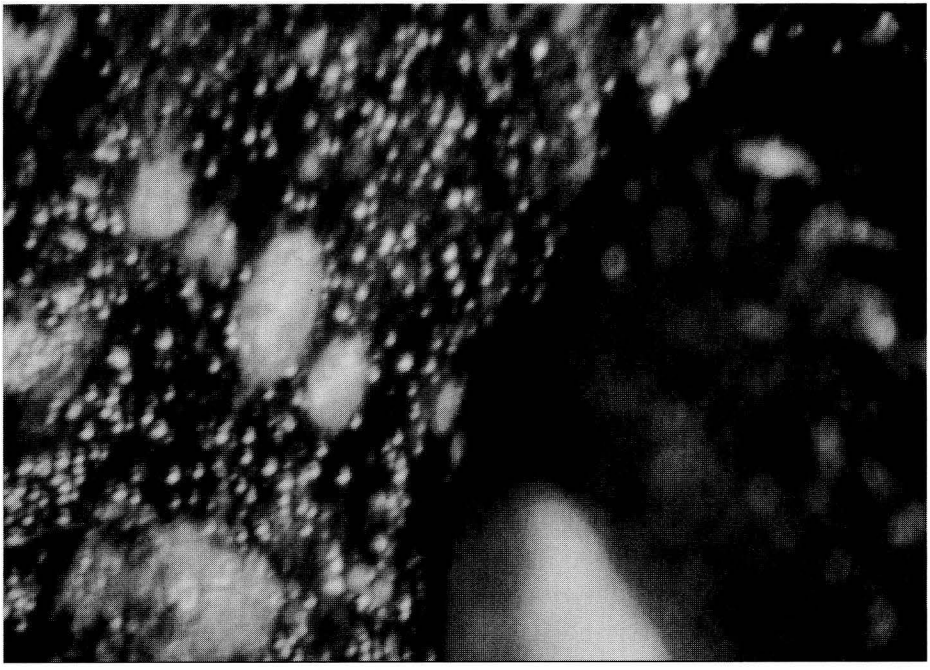


Fig. 1

Fig. 2



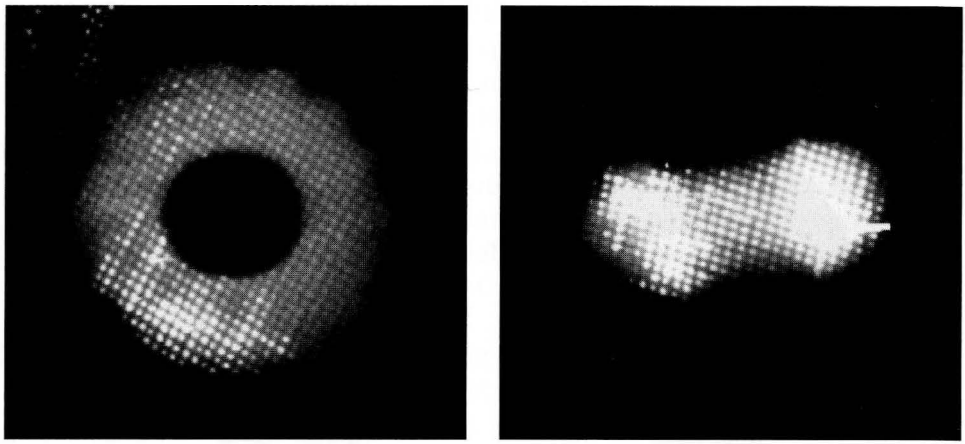
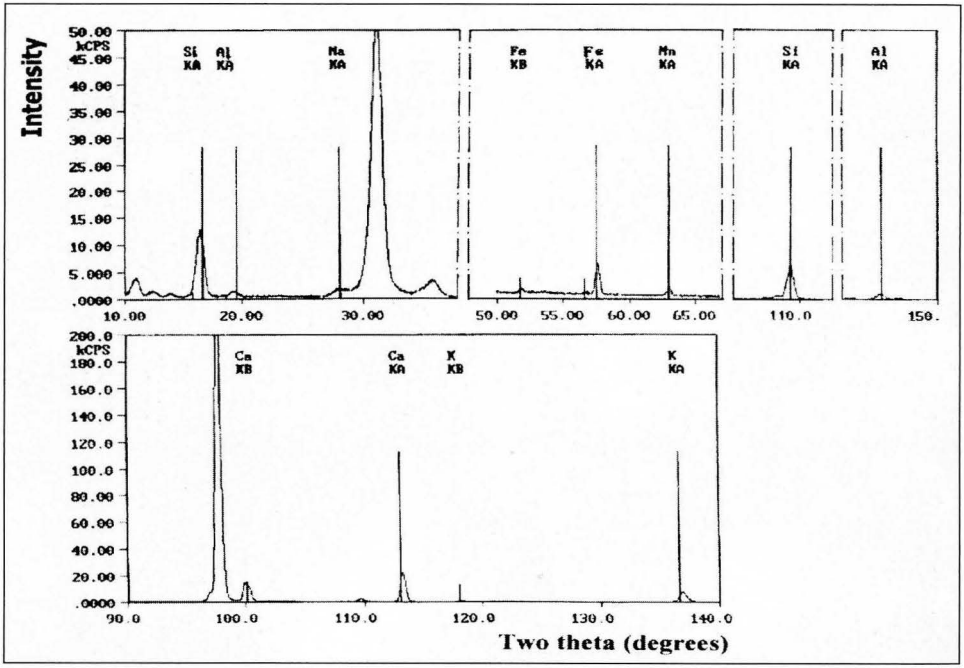


Fig. 3

Fig. 4



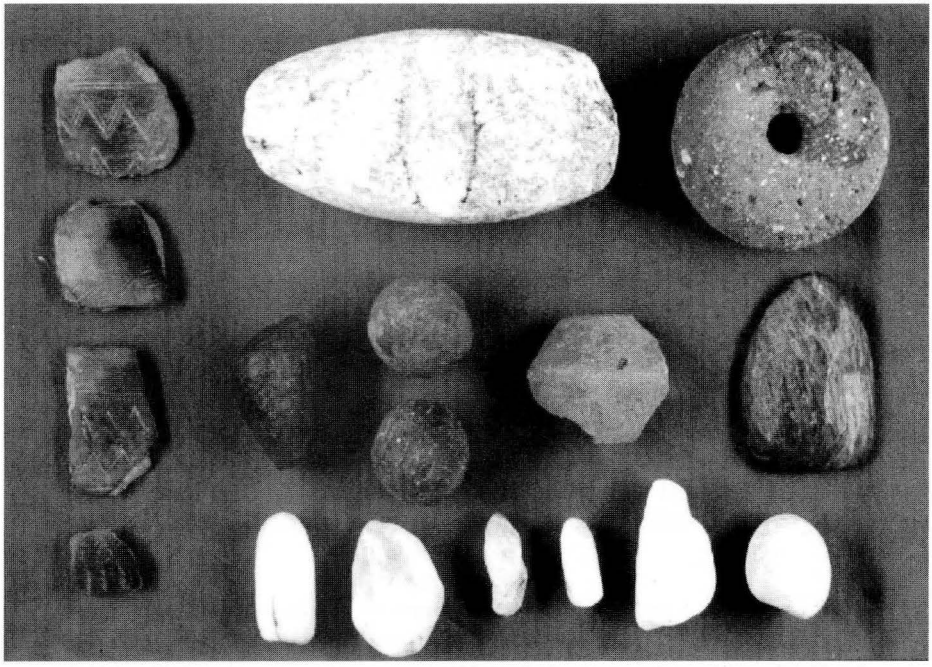


Fig. 5

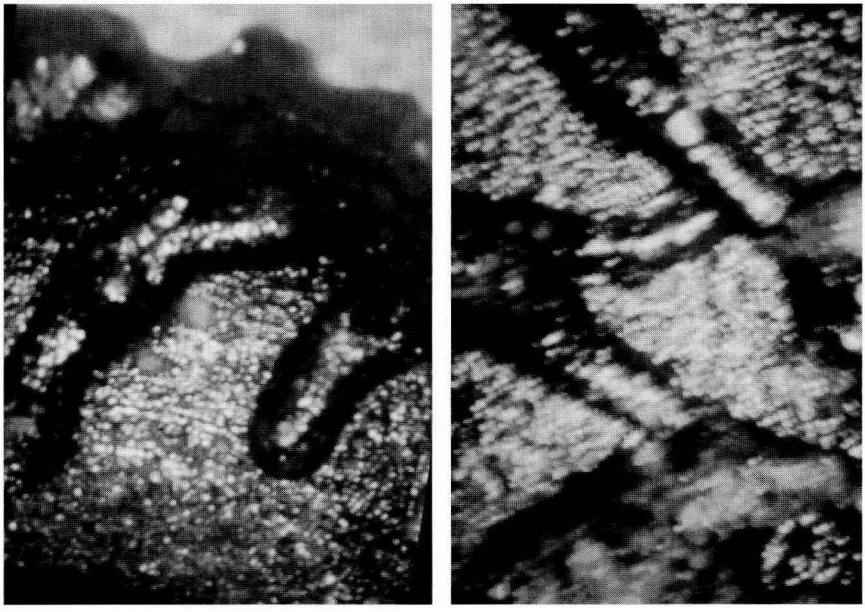


Fig. 6