

A NOTE ON SOME PETROGLYPHS OF THE MOROCCAN HIGH ATLAS

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ABSTRACT. The rock carvings of Oukaimeden, an altitude valley of Moroccan High Atlas, were possibly engraved around the end of the third millennium BC. Some of these glyphs are examined herein, paying a special attention to those with a discoid shape, carved on the glossy surface of about horizontal slabs of red sandstone. Carved in the inner space of one of these glyphs there are two symmetrical series of arcs turned toward the center, which is marked by a central hollow. Although the discoid glyphs are usually interpreted as shields, it is suggested that if completed with a vertical rod inserted in its center, one of the glyphs may act as a rudimentary device usable to recognize the autumnal equinox. Knowing such days also in a very approximate way was of special interest in a shepherd community, forced in autumn to move the herds from altitude pastures to the plains, avoiding heavy rains along the mountain paths. Further meanings of discoid glyphs are discussed, as well as the possible significance of some small hollows carved in definite number along their western outer side or, in other carvings, set in linear arrangements.

The petroglyphs of Oukaimeden were discovered in 1949 in a valley of the Moroccan High Atlas (Malhomme 1959–1961). As a precious cultural heritage, the site has been object of many studies and on the topic a rich literature is available (Souville 1991). Although there is some uncertainty about their age, it is generally accepted that the glyphs were engraved around the end of the third millennium BC as expression of a sheep-farming community (Searight 2013). Besides pastoral themes, most frequently found, other representations do not allow such obvious interpretation. Simoneau (1968) puts in evidence the significant number of “représentations symboliques”, about 20% of the subjects, which point to a culture well rooted in an indefinite past; this Author also underlines the similarities of the High Atlas petroglyphs with those of Val Camonica (Northern Italy), whose age however is dated back to IV-VIII millennia BC. A similar opinion about the significance of the glyphs is expressed by Malhomme (1959–1961), who thinks the glyphs show “une persistance de cultures probablement très anciens”. In the perspective proposed by these authors, some discoid glyphs are discussed in this note, after *in situ* observations (2013, 2016). The petroglyphs are carved on red sandstone slabs, sited at 31° 12'33" N and 7° 51'11" W,



FIGURE 1. A discoid glyph; the center is marked by a hollow limited by a girdle. Three concentric bows protrude toward the center and face three others in a symmetrical position. The angle \widehat{ACB} is close to 45° .

2.612m above sea level; the glossy surface of the rock makes the engraved grooves quite evident. The reported measurements are to some extent not precise because of the width of the carved lines, possibly made percussing the smooth surface of the rock. Here are discussed the following glyphs:

- a) A discoid engraving on a slab nearly horizontal, only slightly inclined to North (Fig. 1). The glyph represents a circle of 40cm diameter marked out with remarkable accuracy; three concentric bows engraved on the inner space protrude toward the center and face three arcs in a symmetric position, so that a line connecting the middle points of these arcs is a diameter. In the center of the glyph there is a superficial hollow of 2cm delimited by an outer girdle.



FIGURE 2. Discoid glyphs associated with series of ten small hollows.

- b) Two discoid glyphs engraved on the same horizontal slab, sited just fifteen meters from (a); both of them with round hollows aligned on the outer side of the peripheral groove (Fig. 2). The series of dot-like hollows, formed by ten elements and subtending a similar angle, are nearly in the same position on the West side of the disc. Hollows as those above described but arranged in two parallel rows are also described (Figs. 3, 4).

Although the current interpretation of the discoid glyphs is that they represent shields, Simoneau (1968) and Malhomme (1959–1961) give them a symbolic value, rooted in an indefinite past. Obviously, both maybe be correct, although a shield representation seems odd in a shepherd community, also considering the absence of other related images as arrows, arches or spears; it seems of some interest that the carvings usually interpreted as short daggers, the handle the same length than the blade, fairly frequent in the site, may rather represent clay ovens, not different from those yet in use in the area. The interpretation of the complex pattern of the glyphs herein discussed is of course subjective: it is possible that the carvings just represent ornamental objects or, in the case of linear arrangements of small hollows, a sort of simple game. It is also possible that carvings had unknown significances belonging to lost cultures or are abstract expressions of creativity. The series of dot-like hollows present in the glyphs in Fig. 2 do not support a descriptive interpretation; accepting the possibility that glyphs do not represent real object, as suggested by Simoneau (1968) and Malhomme (1959–1961), here another possibility is examined, that the glyph might be a rudimentary device of some utility in detecting the autumnal equinox. If this conjecture were true, the patterns carved in the inner space of the discoid glyph in Fig. 1 had a role in the recognition of the autumnal equinox, a significant event in a pastoral community, after which days start to become shorter and shorter and rainy weather suddenly may happens without the progression usual in temperate regions. In such a perspective, a vertical rod would have been inserted in the central hollow of the glyph, with the function of a style or gnomon: at noon the sun is in its higher position and the rod shadow would have



FIGURE 3. Hollows set in linear rows.

fallen to the geographic North, giving a reference to orientate the glyph. Easily realized, such a wooden rod was a basic complement in the functionality of the glyph, as is the style in a sundial. As the position of the sun changes, the rod's shadow falls on the peripheral circle in different points, so giving the drawing a technical significance, also considering the accuracy in the delineation of the circle. If this is the case, the length of the rod determines also different points within the circle where its apical shadow would fall at noon in different days of the year, the shortest with the sun in zenithal position; furthermore, the shadow position has a special interest at dawn or at sunset. Of course, the possible significances of the inner design of the glyph is only matter of conjectures. The site of the glyph in discussion has an elevation of 2.602 m and has on its East a point 180 m higher, so in the equinox day the sun rises on this point more than two hours later the actual rising in a free horizon at sea level, and the sun sets early, since on the West the mountains profile is some 150 m higher than the glyph: this may explain the divergence (about 25°) of the observed alignment from an orientation E-W of the glyph. Here a possible role of the arcs can be seen: the angle \widehat{ACB} in Fig. 1 formed by the contact points of the intermediate arc on the circle with the center of the glyph is roughly 45° , so half of this value is close to that of the tropics. Such feature may be casual, but it seems rather unlikely that in a simply ornamental engraving the angle \widehat{ACB} has the value of the latitude of the tropical parallels. When at the summer solstice the sun rises on the glyph, the shadow of the rod is on the point where one of the arcs touches the circle (A in Fig. 1), but this is a very subjective hypothesis, depending also from the unpredictable dimensions and shape of the rod. The shadow at sunrise progressively approaches a point reached at the autumnal equinox days, when day and night have the same length. Other significant alignments could be identified through further and more accurate observations and reveal that, with a rod of appropriate length, the arcs would be rudimental solstitial hyperboles. Also, it may be that the glyph is oriented to mark, through the position of the rod's shadow, especially significant days in that community, so the peripheral circle would represent the horizon with the positions of local



FIGURE 4. Hollows set in linear rows.

sunrise, not the astronomic rising. Of course, the glyph would be a somewhat rudimentary artifact of a pastoral, small group of people in the third millennium BC or before, maybe reflecting a memory of models known by heart, anyway far from the accuracy expressed by complex cultures, as those which worked up the western European “hinges” and “roundels”, by far bigger and precisely oriented (Gimbutas 2005); however, if the herein commented glyphs would be comparable to those of Val Camonica (Simoneau 1968) they should be largely backdated.

Detecting the autumn equinox had a special relevance in a sheep farming culture: the shadow of the rod in these days allowed the recognition of the end of the dry season, regardless of the weather, which in the region is usually dry and clear. This was significant, since the way to move the herds from mountain summer pastures to the plains was slow and long, so it had to be started minimizing the risk of autumnal heavy rains running down the mountain paths. On the whole, this interpretation supports the idea of Souville (1991), that the “demi-cercles concentriques sont incontestablement liés à une cosmogonie et à un culte astrale”, although in a small community of shepherd the glyph had probably a more pragmatic role as a tool to regulate the annual rhythm of the herd’s movements.

Of some interest are also the discoid glyphs associated with ten small hollows on their external side, carved in a similar position (Fig. 2); considering that in both glyphs the series of hollows are in the same position on their west side and subtend a similar arc (ca. 80°), their features do not seem ornamental or casual. Malhomme (1959–1961) considers the dots as solar irradiations. If the circular carving represents the horizon the dots could mark the position of a special astronomical object appearing on the line of the horizon, maybe the moon or Venus, both epiphanies of lunar deities (Graves 1992) or the star *Sirius* (α *Canis majoris*), among the earliest star object of observation and cult, raising on the horizon when the rainy season is coming on.

Round hollows linearly set are also present among the glyphs (Figs. 3, 4); frequently the dots are in two rows of seven, but the number cannot be stated with accuracy since some

carvings are somewhat erased. That number fourteen suggests a relation to lunar cults, and such are indeed the well-fated days of the first lunar quarter (Graves 1992).

Dots in rows, and their number as well, with striking similarities to the here discussed dot series, have been observed in vascular fragments assigned to the third millennium of Aeolian Islands on which Bernabò Brea (1952) says “... there are frequently signs which, because their structure and position (...) do not appear in any manner as they have a decorative function”. Dots appear on symbols of old solar cults as the Sanskrit swastika. Today this graph is a largely diffuse sign of auspicious in the Eastern cultures, yet surprisingly associated with four dots also in mosaics in Christian catacombs and in vascular decorations of Magna Graecia, as it can be observed in the eighth century BC crater “*del naufragio*”. A similar sign has been found in Sicily on ceramic fragments of the Bronze Age and thought a character of the Linear A archaic alphabet (Marazzi 1997; Negri 2002). Hollows similar to those herein discussed line the round face and shoulders of a ritual statuette of the middle IV millennium found in Moldavia (Gimbutas 2005). On the whole, the above described series of small hollows suggest that they had a ritual or technical significance.

If the proposed interpretations make sense, four millennia ago (or more), shepherd communities of Moroccan High Atlas had a rational approach to astronomic facts, and drove the knowledge obtained through intelligent observations to practical applications. Although obviously rudimentary, some of the glyphs could be among the oldest astronomical tools, realized after a complex elaboration of field observations.

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