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Assessment of the Acheulean in Southern Italy: New study on the Atella site (Basilicata, Italy)

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ABSTRACT

In this research, still at a preliminary stage, we have studied the lithic assemblage of Cimitero di Atella site (Basilicata, Southern Italy) with a technological and techno-functional approach, never applied to this material before. Previously, lithic implements were principally classified with a typological methodological approach. This site was ascribed to the Lower Acheulean, even if large tools found *in situ* are very few and not properly bifacially worked. This new analysis allowed us to note the presence of technical recurrences both in production and tool formation. The results have been consequently compared with those concerning other similar and almost coeval sites, finding many analogies in production strategies, but also some differences mainly due to shape and quality of the raw material. We underline the great scientific potential of this site and the whole area of the Atella basin, which can surely be included in the large debate on the first peopling of Europe and the diffusion of the bifacial technology.

1. Introduction

Cimitero di Atella site was found in 1990 and investigated for more than twenty years by a team of Università di Firenze directed by Prof. Borzatti von Löwenstern. Thanks to geological and geomorphologic studies on the Atella basin area, in addition to the classification of the lithic industry on typological basis, a chronology around 600–550 ka (MIS 15) was proposed for this site (Borzatti et al., 1997). Moreover, the presence of "bifaces" among the lithic industry has led authors to attribute this techno-complex to the Lower Acheulean. This new study, subject of a master degree thesis (Abruzzese, 2014), had as its main goal to contribute to the characterization of this lithic complex through a technological and techno-functional methodological approach. In this way, we have attempted to partially elude the limitations of the chrono-stratigraphical attribution of the site, including the absence of numerical dates and several taphonomical problems. If the new research at Atella is just beginning, this work is a first step to try to reassess the lithic assemblage features. The site of Atella has been considered as one of the first evidences of Acheulean in Europe with Notarchirico (Piperno, 1999), Barranc de la Boella (Vallverdù et al., 2014), La Caune de l'Arago P-Q (Barsky and de Lumley, 2010) and La Noira (Moncel et al., 2013). However, new study of the lithic industry led us to reconsider this attribution. Handaxes are very poorly represented in this assemblage, in contrast to other types of tools. The aim of this paper is to discuss the question of the variability of the first Acheulean in the European context, starting from the results of the new technological study of the whole level F assemblage.

2. Materials and methods

2.1. Regional setting and chrono-stratigraphical context

The village of Atella is located in Southern Italy (province of Potenza, region of Basilicata), about 10 km to the south of the Vulture volcano summit (Fig. 1). The Paleolithic site stands in the

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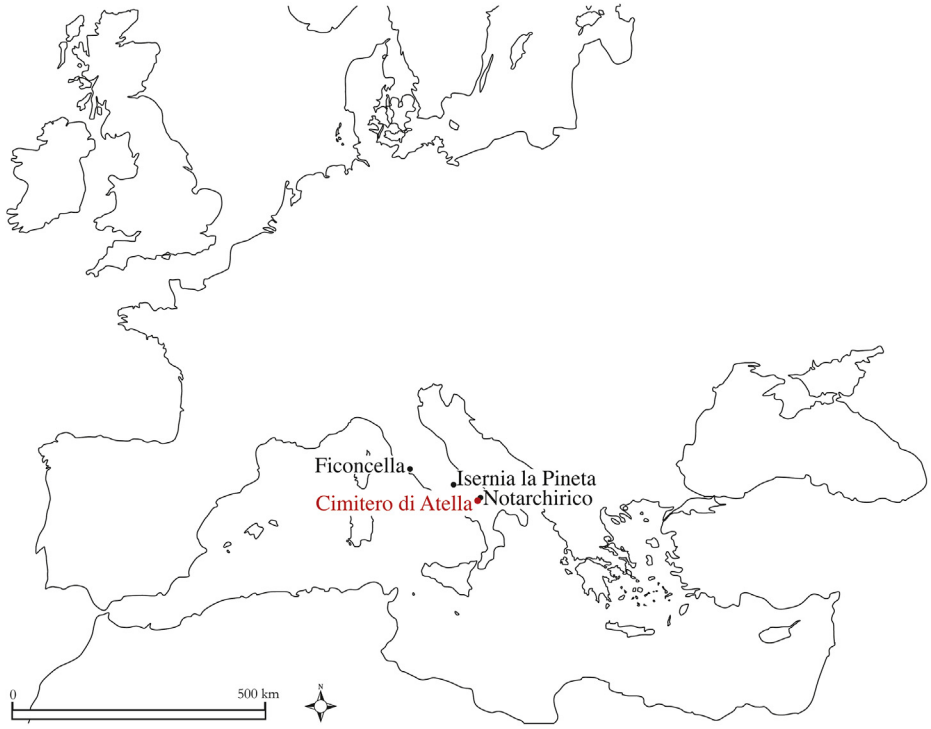

Fig. 1. Localization of Cimitero di Atella and other Italian sites discussed in this paper.

south of the modern village, behind the municipal cemetery, on a terrace about 90 m higher than the modern Fiumara di Atella. It is a few kilometers from Loreto and Notarchirico, the Middle Pleistocene sites in the Venosa basin (Barral et al., 1978; Barral and Simone, 1984; Piperno, 1999).

The area around the Vulture volcano shows a long-lasting eruptive activity, between about 740 and 130 ka (La Volpe and Principe, 1990; Brocchini et al., 1994). This volcano lies on a sedimentary substratum composed by marine Triassic-Miocene deposits and more recent marine and continental Plio-Pleistocene conglomerates (La Volpe et al., 1984). Among volcanic deposits, six volcano-stratigraphic units characterized by the alternation of effusive and explosive eruptions were recognized (La Volpe and Principe, 1990; Brocchini et al., 1994). However, more recently these volcano products have been subdivided into synthematic units (Giannandrea et al., 2006).

According to the paleoenvironmental studies on this area, Atella was located on the shores of a lake that developed during the Middle Pleistocene at the south of the Vulture. This lake is almost contemporaneous to those of Venosa (to the east) and Melfi (to the north of Vulture) (Borzatti and Vianello, 1993; Borzatti, 1998). Different levels were excavated at Atella site, on a surface of about 30 m^2, and currently it can be visited by public thanks to the partial museum development of the archaeological area.

The stratigraphy (Fig. 2) shows at the base some sterile silt layers (A-E), followed by levels rich in lithic and faunal remains that have been interpreted as landslides of the lake shores (F). Above, there is a sandy deposit of lacustrine origin (I) and some volcanoclastic levels which contain a less numerous lithic assemblage (L) (Borzatti et al., 1997).

The faunal remains are generally very altered by their long-lasting permanence in the shallow water of the paleo-lake (Borzatti et al., 1997). Many of them are referred to *Palaeoloxodon antiquus* (Borzatti et al., 1998): two typical straight tusks (found at different heights of level F) and some molars. Other faunal remains belong to *Bos primigenius* and to different kinds of deer (*Dama, Cervus* and *Capreolus*) (Zucchelli, 2000, 2002).

In the state of research, the Cimitero di Atella sequence can be attributed to a period between 740 ka and 480 ka, thanks to the correlation with the different vulture eruptive events (Di Muro, 1999). The first levels (A to E), interpreted as lake deposits, are related to UVS Masseria Boccaglie (660–650 ka). The level F, considered as a colluvium deposit, is recovered by the level L correlated to the UVS Masseria Granata (480 ka). This interpretation needs to be enriched by new analyses. The nature of the deposits (lake, shore, volcanic products, etc.) has to be checked by new sedimentological analyses, and new dates must be obtained. All this new analyses will be crucial to understand the taphonomical processes, as well as to determine the chronostratigraphical context of the Cimitero di Atella archaeological remains.

2.2. Lithic industry and methodological approach

The lithic assemblage is composed of cores, flakes, retouched tools and knapping waste (Borzatti et al., 1997). Raw materials are of three types: flint, quartzite and “porous radiolarite”, a particularly light rock, which presents a higher degree of alteration (Borzatti et al., 1992). A dichotomy in the use of raw materials has been recognized: different kinds of flint to produce tools on flakes, while the handaxes almost exclusively involve the porous radiolarite.

The lithic assemblage analyzed in this work comes from levels F. A first examination of the collection shows a great disparity in the state of alteration, and some doubt concerning the anthropic nature