



## The archaic Acheulean lithic industry of the Cretone basin (Latium, central Italy)



P. Ceruleo<sup>a</sup>, F. Marra<sup>b,\*</sup>, L. Pandolfi<sup>c</sup>, C. Petronio<sup>d</sup>, L. Salari<sup>d</sup>

<sup>a</sup> Via Giotto 18, 00019 Tivoli, Roma, Italy

<sup>b</sup> Istituto Nazionale di Geofisica e Vulcanologia, Sezione Sismologia e Tettonofisica, Via di Vigna Murata 605, 00147, Roma, Italy

<sup>c</sup> Dipartimento di Scienze, sezione di Geologia, Università degli Studi "Roma Tre", Largo S. Leonardo Murialdo 1, 00146, Roma, Italy

<sup>d</sup> Dipartimento di Scienze della Terra, Sapienza, Università di Roma, P.le Aldo Moro 5, 00185, Roma, Italy

### ARTICLE INFO

#### Article history:

Received 29 April 2015

Received in revised form 17 July 2015

Accepted 22 July 2015

Available online xxxx

#### Keywords:

Acheulean lithic industry

Lower Paleolithic

Central Italy

Middle Pleistocene lacustrine successions

Glacio-eustatic cycles

### ABSTRACT

A rich record of Lower Paleolithic lithic industries collected within the lacustrine basin of Cretone (Latium, Central Italy) is described in detail, showing the occurrence of two distinct tool assemblages. According to the geochronology data constraining the evolution of the lacustrine basin, in which the largest portion of the sedimentary filling correlates with the depositional cycles linked to Marine Isotopic Stages (MIS) 15 and 13, most of the Cretone lithic industry shows the characters of an archaic Acheulean facies, relatively rich in bifacials with lithic industry on flake and roughly cut pebbles (often tending to two-sided chopper), that has similarities with the oldest Italian complexes (e.g.: Isernia - La Pineta). In contrast, a smaller record of artifacts displaying features kin to the early Middle Paleolithic complexes of this region, is likely associated with later frequentation of the area during MIS 9 through 7, when lacustrine conditions were largely superseded by a fluvial-palustrine environment, to which limited sedimentary deposits are associated, and migrated to the eastern margin of the basin, where a smaller lake persisted until MIS 5. The recognition of the described "archaic" facies of Acheulean industry within a geochronologically constrained context provides new data on the lower - middle Paleolithic transition in central Italy and allows us to present a comparative review of other important sites of this region.

© 2015 Elsevier Ltd. All rights reserved.

### 1. Introduction

Findings of lithic industry, generically referred to the lower Paleolithic, have been documented in some twenty sites spread in the surroundings of Palombara Sabina along the Apennine's margin of Latium (Fig. 1) (Ceruleo, 1984, 1985, 1986, 1987, 1996, 1997, 2001; Ceruleo and Zei, 1996, 1998). In the present paper we document the occurrence of abundant prehistoric lithic artifacts which concentrates, along with a large number of vertebrate fossil remains, within a relatively small, geographically and morphologically constrained sector of the abovementioned area, near the village of Cretone.

The Cretone basin is a sub-rhomboidal structural depression located ca. 30 km north of Rome and 20 km east of the Monti Sabatini Volcanic District (Fig. 1). This sector hosts the remnants of a lacustrine basin that developed during Middle Pleistocene as a consequence of the volcano-tectonic evolution of this region, as reconstructed in a dedicated paper (Marra et al., submitted for publication). Whereas a detailed description of the geochronologic and morpho-stratigraphic data constraining the age of the sedimentary deposits in which the recovered lithic industry is embedded is beyond the scope of the present work, a summary of

these data is provided in Figs. 2 and 3, showing ages of the volcanic deposits intercalated in the lacustrine succession of the Cretone basin, as well as the correlation of the different sedimentary cycles with the marine isotopic stages of the  $\delta^{18}\text{O}$  curve.

Around 600 ka, an overall uplift occurred in this region, precluding to the start of the paroxysmal activity of the Quaternary volcanic districts of central Italy (Karner et al., 2001); associated to this uplift, a volcano tectonic depression originated along the Tiber River valley, causing the establishment of a lacustrine environment and providing favorable conditions to the frequentation of vertebrate species that populated this area. The lacustrine conditions endured during the late Middle Pleistocene, although the extension of the basin changed in consequence of the interplay among local vertical movements, volcanic activity and global glacio-eustatic fluctuations. These concurrent factors determined the deposition of a series of sedimentary cycles, correlated to the different highstands of the sea level and the intervening erosive phases, which presently occur as terraced deposits within the Cretone basin (Fig. 2). The  $^{40}\text{Ar}/^{39}\text{Ar}$  age and geochemical fingerprint of several volcanic tephra layers interbedded within the lacustrine succession, coupled to the morpho-structural analysis of the basin, allowed Marra et al. (submitted for publication) to recognize six sedimentary cycles and to correlate them with phases of sea-level rises associated to the Marine Isotopic Stages (MIS) 15 through 5, constraining the age of the sedimentation between 600 and 125 ka (Fig. 3).

\* Corresponding author.

E-mail address: [fabrizio.marra@ingv.it](mailto:fabrizio.marra@ingv.it) (F. Marra).

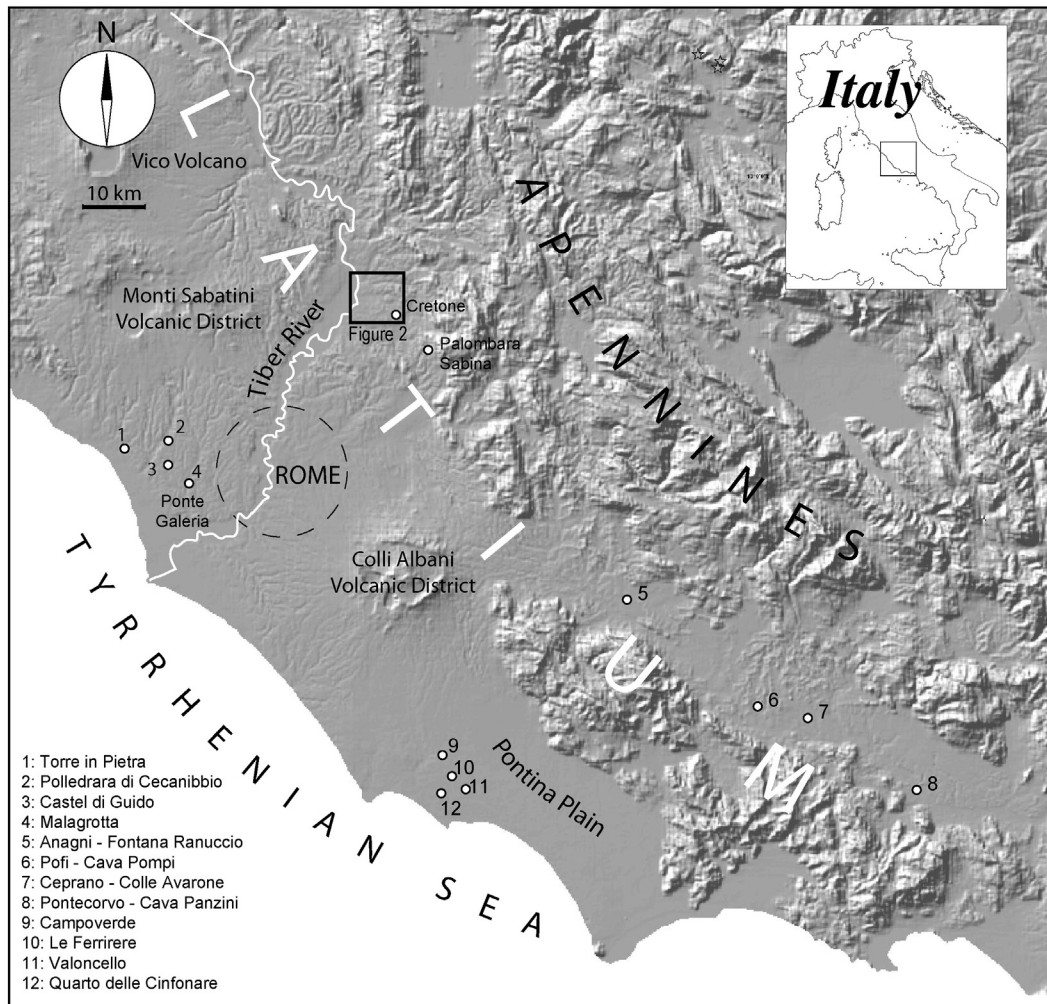


Fig. 1. DEM image of central Italy showing location of the investigated area and of the lower Paleolithic sites of Latium mentioned in the text.

Several vertebrate remains (over 200 specimens taxonomically determined) were collected at various sites uniformly spread in the southern sector of the Cretone basin, but about 50% were found within a small sector located at the eastern margin of the basin, in the locality Osteria Moricone (sector 2 and area of collection B in Fig. 2). Here, fossil remains of *Ursus cf. spelaeus*, *Palaeoloxodon antiquus*, *Stephanorhinus* sp., *Equus ferus*, *Equus hydruntinus*, *Hippopotamus cf. antiquus*, *Sus scrofa*, *Axis eurygonos*, *Cervus elaphus eostephanoceros*, *Dama* sp., *Bison cf. schoetensacki*, *Bison priscus*, *Bos primigenius* and some remains referred to *Bos* vel *Bison*, *Cervus elaphus* ssp. And undetermined Cervidae were found. In other sites of the basin (Camporiocchio, Fosso Casa Cotta, Fosso della Buffala, Marzolano, Valle Fiora and Sferracavallo) several remains of some of the above taxa, and also of *Canis lupus*, *Crocota crocuta*, *Stephanorhinus kirchbergensis*, *Capreolus capreolus*, undetermined Testudinoidea and undetermined Elephantidae were collected.

According to the identification of distinct depositional cycles spanning the Middle Pleistocene, the vertebrate remains collected in this area belong to different taxa attributable to distinct Faunal Units (FU), spanning the Galerian through the Aurelian Mammal ages (Gliozzi et al., 1997; Petronio et al., 2011), as documented in Marra et al. (submitted for publication). In particular, the concurrent occurrences of *Hippopotamus cf. antiquus*, *Axis eurygonos* and *Cervus elaphus eostephanoceros*, which do not persist after MIS 15, MIS 13 and MIS 11, respectively, along with *Canis lupus*, *Ursus cf. spelaeus* and *Equus hydruntinus*, which appear only since MIS 9 and 8.5 (Gliozzi et al., 1997; Marra et al., 2014a), suggest the presence of distinct Middle Pleistocene mammal assemblages referable to Isernia FU, Fontana Ranuccio

FU, Torre in Pietra FU or Vitinia FU, and of a Late Pleistocene assemblage. Therefore, evidence of the presence of temporally and physically distinct depositional environments for the fossils remains, as well as for the associated lithic industry occurs in the Cretone basin (see Fig. 2).

In the following sections, we describe the lithic industry collected within the Cretone basin and we show that two distinct “facies” can be recognized which, according to the related paleontological and chronostratigraphic record, can be ascribed to distinct palaeoethnological contexts: one documenting an early Acheulean age, and the other one a later early Middle Paleolithic age (“pre-Mousterian” sensu Blanc, 1954; Piperno, 1992; or “proto-Pontinian”, sensu Taschini, 1967).

Although the human artifacts, along with the vertebrate remains, are collected from the ground preventing us from recognizing the exact sedimentary cycle in which they were embedded, most of them are well preserved and keep coating of the lacustrine sediment in which they were embedded. The geologic study of the Cretone basin demonstrated that the lacustrine conditions and the related sedimentary fill were essentially limited to MIS 15 and MIS 13. In contrast, the successive sedimentary cycles are represented by thin limbs of terraced deposits with limited lateral extension (Figs. 2 and 3), suggesting that the abundant findings of the Acheulean facies of lithic industry were originally embedded within the oldest, larger portion of the lacustrine deposits, correlating MIS 15 and MIS 13, and, at a lesser extent, MIS 11. In contrast, the early Middle Pleistocene facies, according to its later age and limited occurrences, is more likely associated to the alluvial/colluvial deposits and paleosoils that developed in this area since MIS 9.

Download English Version:

<https://daneshyari.com/en/article/7446595>

Download Persian Version:

<https://daneshyari.com/article/7446595>

[Daneshyari.com](https://daneshyari.com)