

The “San Bartolomeo” shelter: a flint exploitation site in Central Italy

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Several features and tools connected with flint quarrying and exploitation have been found at the “S. Bartolomeo” shelter (Mt. Maiella — Central Italy): a waste heap, a flint workshop, a flint pick and several limestone cobbles employed as heavy hammers. This site was an intermediate altitude hunting camp of early final Epigravettian age where flint was seasonally quarried.

KEY-WORDS: Upper Palaeolithic, Epigravettian, flint quarry, flint workshop, Central Italy.

INTRODUCTION

The “S. Bartolomeo” shelter is located on the northern slope of Mt. Maiella, a mountain group of the central Italian Appennine ridge, at about the latitude of Rome (Fig. 1); it is almost at the bottom of Santo Spirito valley, at a height of 750 m above sea level, 20 m away from another rock shelter where a small church consecrated to St. Bartholomew and a hermitage were built in the 12th century. The excavations have been carried out since 1990 by the Dipartimento di Scienze Archeologiche of the University of Pisa (Boschian 1993:149-50); the investigated area is about 20 m², which is only a small portion of the whole surface of the shelter floor. The results of this work must consequently be still regarded as a preliminary report. Further excavations should explain better whether this site was visited only for flint exploitation or also for other purposes.

Despite the restricted size of the investigated area, several pieces of evidence have been found that flint was quarried from this site. Italian Upper Palaeolithic flint exploitation sites are rare and this is the only one in Central Italy: its discovery brings new data to the knowledge of the peopling of the Abruzzo area.

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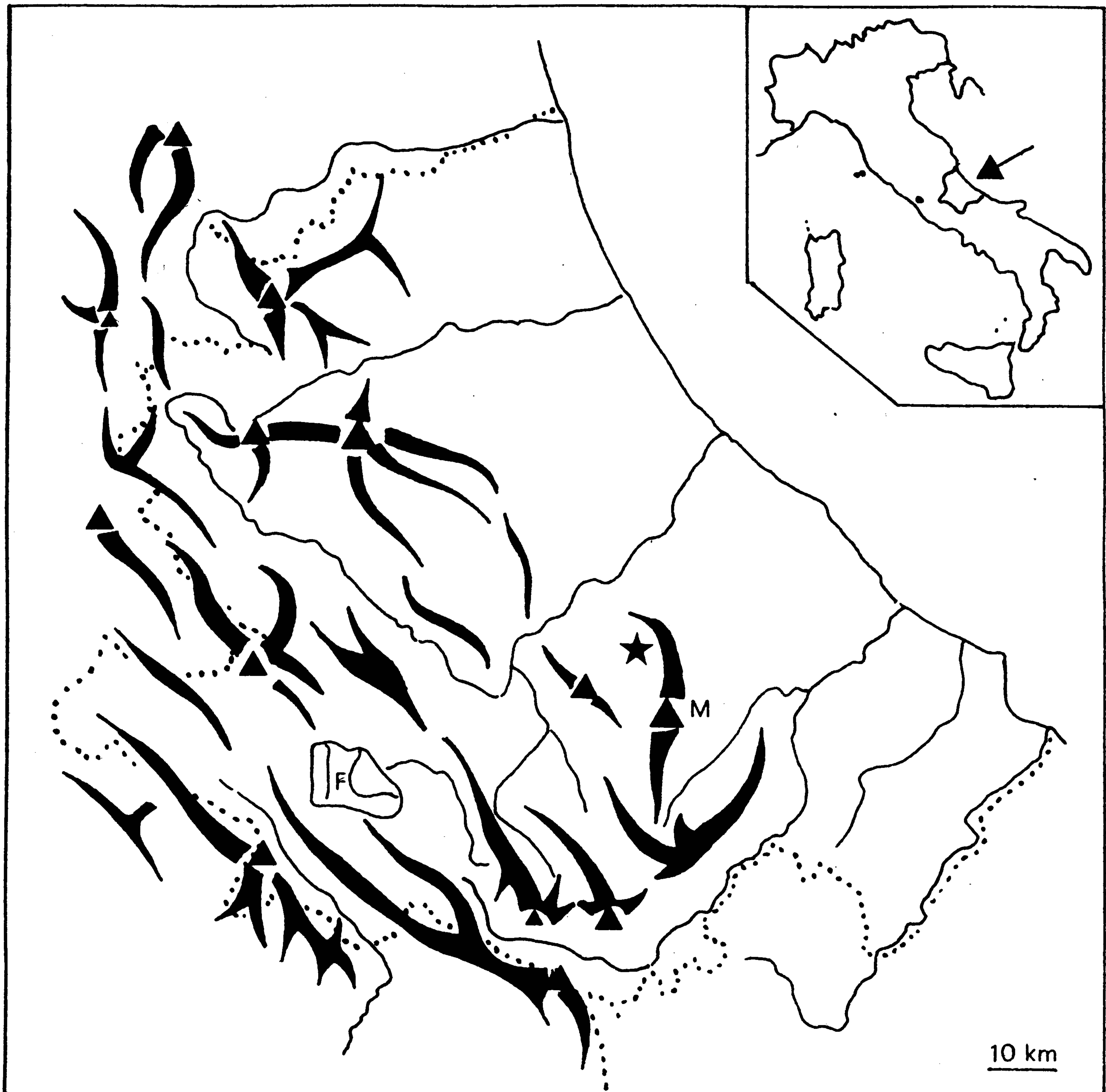


Fig. 1. Location map. The outline of the Appennine ridge in the Abruzzo Region is displayed: M — Mt. Maiella; F — Fucino Plain; star — “S. Bartolomeo” shelter.

MORPHOLOGICAL AND GEOLOGICAL OUTLINE

The 300–1800 m belt of the northern side of Mt. Maiella is characterized by several deep and winding valleys and ravines which dissect the smooth surface of the slope, complicating the morphology of the area. The flanks of the valleys are often very steep, even subvertical; cliffs sometimes alternate with coarse scree deposits. The cliffs frequently present more or less deep notches caused by the erosion of the stream

current along the softer rock layers. These notches are often wide and form rock shelters which have been inhabited from the Upper Palaeolithic to a few centuries ago.

The rock formations outcropping in the area are the “Bolognana formation” and the “S. Spirito formation” (Accordi *et al.* 1988:85–6) which are mainly made up of layered grainstones and packstones of Eocene-Oligocene age. Levels — or groups of levels — with dark brown to dark grey chert nodules are frequently interbedded in these formations: the nodules are usually subspherical or slightly amoeboidal 5–20 cm across, but also some lenses up to 1 m wide are present. The rock is rather tectonized and thus only a relatively small percentage of nodules are suitable for flaking, while the larger lenses are always deeply fractured. The layering slopes approximately 20° to the west.

The rock shelter which is the subject of this work is about 40 m wide and 5–7 m deep; the ceiling is 4 to 8 m high. A small terrace, partially eroded by the stream which today flows 6–7 m deeper down, lies in front of it.

An approximately 5 m thick group of cherty limestone layers outcrops both inside the shelter on the end wall and outside, a few metres lower down, along the vertical step of the terrace eroded by the stream (Fig. 2). In fact probably not all these cherty levels were exposed during the period of use of the sites because the stream flowed at a higher level and the nodules outcropping along the terrace cliff were not exposed. Likewise, some other cherty horizons inside the shelter were covered by sediments that were later eroded.

The lithologic succession of the deposit that partially infills the shelter, and in which the anthropogenic levels lie, is the following, from bottom to top (the description is in accordance to the standard proposed by Catt *ed.* 1991):

1. Monogenic slightly cemented conglomerate, with poorly sorted, granule- to cobble-sized rounded limestone elements. Sandy calcareous matrix with a few quartz and frequent subhedral pyroxene elements (*tephra*); small chert flakes are also frequent. Skeleton-supported structure. Thickness 2–3 m. This layer lies directly on the rock surface of the bottom of the shelter. Probably of middle Pleistocene age.

2. Alteration and/or pedogenization level of the underlying conglomerate: loose rounded limestone elements in sandy and silty light brownish or yellowish matrix with dark grey ashy patches. Thickness 10–15 cm, subhorizontal plane, clear limit. Frequent flint artefacts, mainly blades, flakes and cores at its top. Late Pleistocene (Tardiglacial) age.

3. River sand lens: coarse to fine calcareous sand with a thin lamina of volcanic ash (*tephra* layer). Thickness 0–25 cm, subhorizontal to slightly sloping plane limit. This lens is about 2 m wide and infills a shallow depression of the surface of the underlying horizon near to the shelter bottom wall. At the top of it about 20 cm of

densely packed chipped flint artefacts in sandy matrix have been found. Late Pleistocene (Tardiglacial) age.

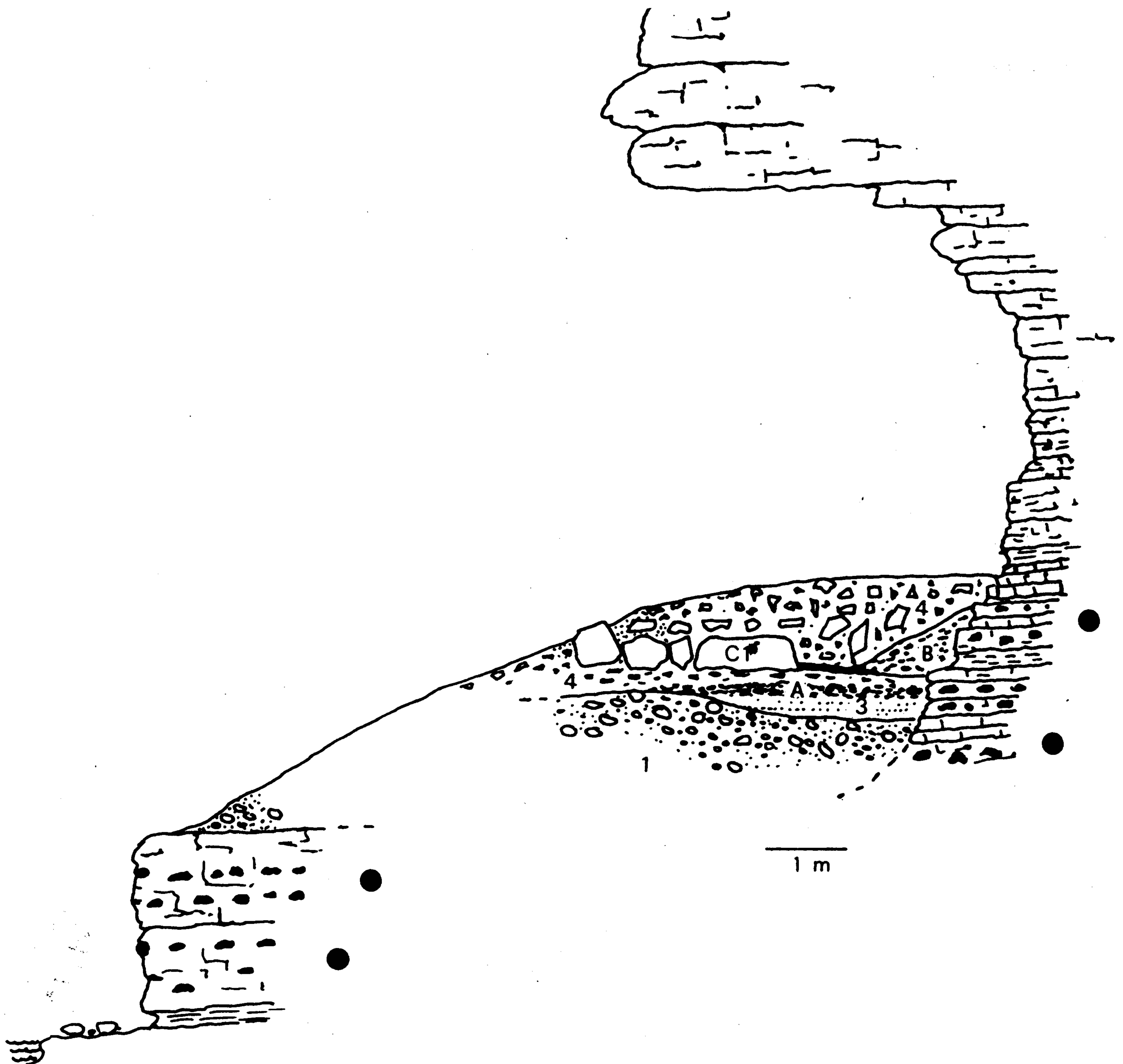


Fig. 2. "San Bartolomeo" shelter. Cross-section of the shelter and its deposit. The North is to the right: 1 — Basal conglomerate; 3 — River sand; 4 — Calcareous breakdown deposit; A — Flint workshop; B — Limestone waste heap; C₁ — Large flat-top boulder; Black dots — position of cherty layers.

4. Coarse angular or subangular often platy calcareous stones, poorly sorted fine gravel- to block-sized, organized in several sedimentary bodies of irregular shape. Very scarce sandy calcareous matrix. Frequent chipped flint, bone and charcoal. Human activity has probably been the primary cause of the complex shaping of the sedimentary bodies that make up this layer. Thickness 1 m, subhorizontal plane limit. Late Pleistocene (Tardiglacial) age.

DATING AND CULTURAL SETTING

The sedimentological and stratigraphical aspects of the deposit suggest that the interval in which the archaeological layers were deposited was rather short; moreover, the typological characters of the lithic assemblages of the various horizons are homogeneous. It has then been inferred that the shelter had probably been inhabited for a short period and therefore all the flint tools found in different horizons have been considered as a whole.

The lithic assemblage can probably be ascribed to the Italian Epigravettian (Boschian 1993:159), possibly to the "transition phase" (Laplace 1964:43-5, 1966:319-21) between the "*epigravettiano evoluto*" and "*epigravettiano finale*" (Zamagni 1994:42-5) which has been dated to the period 15,000-13,500 BP on other sites of the Italian Peninsula. More reliable datings are expected from the study of the tephra layer.

It must be pointed out that the amount of tools excavated so far is not sufficient to form a statistically reliable sample; moreover, the excavated surface is too small to provide a good overview of all the characteristics of the site even though the collected data have given good information about the mining activity. Finally, the features found in the excavation area represent a highly specialised activity area. Thus the data about the tool-kit and the other artefacts may be affected by serious anomalies in terms of typology and typometry.

The shelter was probably a hunting camp visited seasonally by groups of fisher-hunter-gatherers who practised high-altitude hunting during the summer: the place is well exposed to the south, sheltered from cold winds and rain, close to water and with easily available flint. Several similar sites of the same age have been found by survey along the course of the stream wherever such conditions are met.

The flint exploitation was possibly incidental and it was quarried for local use: it is less likely that this site was a primary flint supply inasmuch as this type of flint is not very common in the lowland sites of the same age that were intensively occupied for longer periods, *e.g.*, the Fucino area (Barra Incardona and Grifoni Cremonesi 1991; Bisi *et al.* 1983; Cremonesi 1968; Grifoni and Radmilli 1964; Radi 1982; Radmilli 1956, 1963, 1977:144-230). Moreover exotic types of flint have been found at "S. Bartolomeo": a relatively high percentage of the retouched tools is made of imported flint types. Finally, in some cases older artefacts were collected from neighbouring Lower Palaeolithic sites (mainly Valle Giumentina) and chipped in the shelter.

SITE PATTERN

Very little can be inferred at present about the site pattern since the excavated area is still rather small. Nevertheless the available data pertain mainly to the area of flint exploitation. Three features have been found in the excavation area (Figs 2-3):

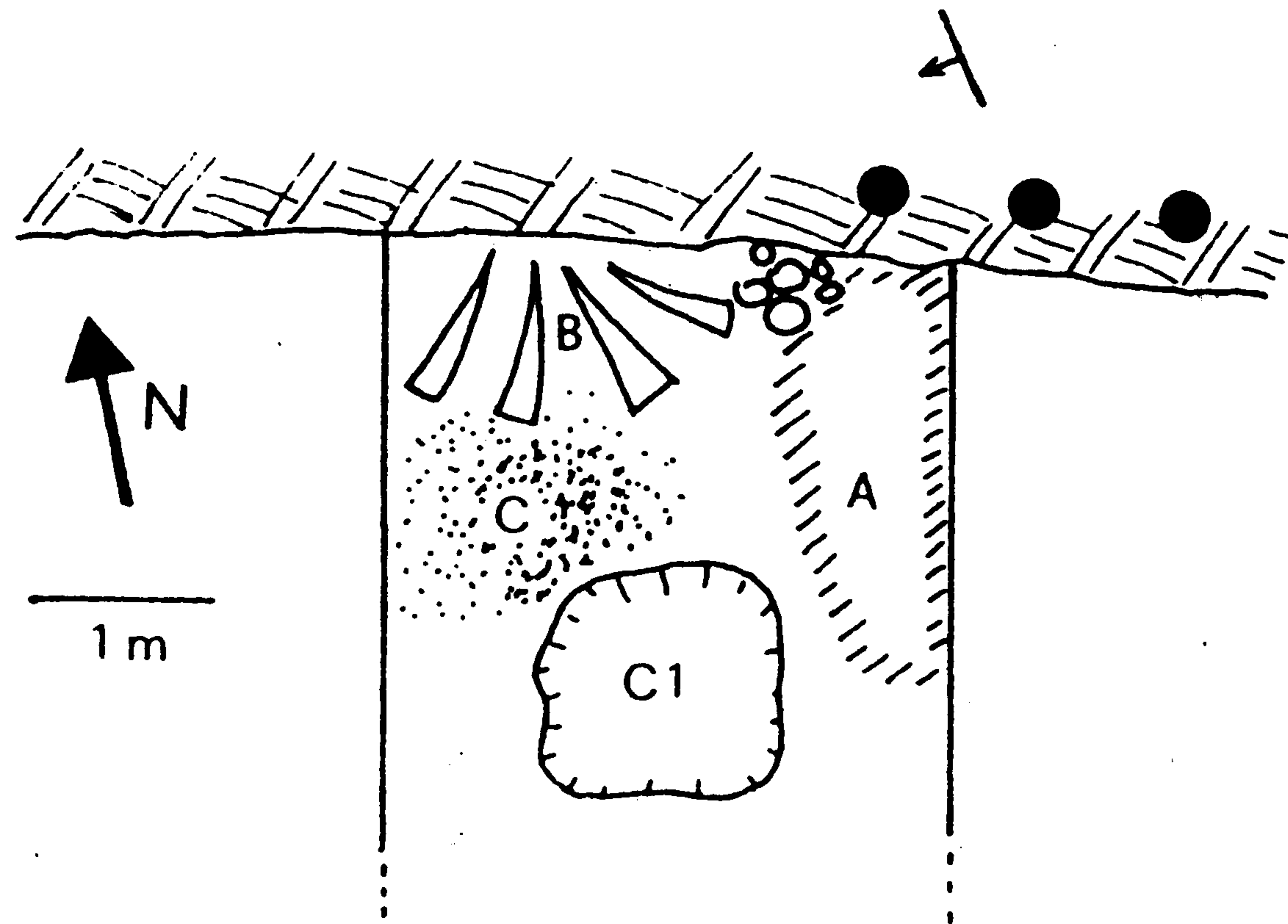


Fig. 3. "San Bartolomeo" shelter. Site pattern map: A — Flint workshop; B — Limestone waste heap; C — Hearth; C1 — Large flat-top boulder; Black dots — position of cherty layers. The geological layering symbol indicates strike and dip of the limestone bedrock.

A. Flint workshop: a flat area about 3 m² wide where about 9000 debitage products were found in a 15–20 cm thick layer. "Pre-cores", cores, blades and flakes (often broken), flint waste and a few tools are densely packed in a sandy loose matrix. The area is elongated, lying perpendicularly against the end wall. It is located exactly where the uppermost level of the group of cherty limestone layers outcropping inside the shelter disappears under the cover of the middle Pleistocene conglomerate due to its natural dip. It is still to be determined whether this feature has been cut by the erosion or has kept its original aspect.

B. Debris heap: a half-conical feature approximately 2 m wide and 1 m high, probably eroded at the top, resting against the bottom wall of the shelter. Its lower limit — *i.e.*, the surface on which it lies — is a few centimetres higher than the uppermost level of the flint workshop. This feature is made up of heterometric, very angular limestone fragments, the finer elements being numerous and often rather platey; thin horizons of greenish marly debris coming from the weathering of the wall bedrock are interbedded in it. Knapped nodules of poor quality flint are very frequent and show sometimes the detachment of one or two test flakes. Waste and occasionally broken tools are also frequent. A small fireplace lies on its surface.

C. Hearth area: a large hearth not yet completely excavated, but probably 2.5–3 m² wide lies between the waste heap (which marginally covers it) and a large flat-topped boulder (C1). The hearth ash deposit is up to 20 cm thick and it leads us to infer that the fire burnt intensely for a long time; so much so that charcoal fragments are very rare and the few stones are deeply heat altered. Burnt flint fragments are very common in this and in the other features.

There is some evidence that the hearth area and the waste heap might be divided from the flint workshop by some large stone slabs arranged in a low wall.

FLINT QUARRYING

As no evidence of pit or tunnel or underground chamber digging was found at the “S. Bartolomeo” shelter, the term “quarrying” is to be preferred to “mining”, even though the difference is more semantic than substantial.

The extraction technique adopted by the Upper Palaeolithic groups that visited this site must be inferred from a few signs because alteration processes, like corrosion and crio- or thermoclastism, have erased almost all the traces left by the quarrying operations on the limestone wall.

The fractures opened in the rock by tectonic stresses were widened by corrosion and physical weathering (such processes are still active); the small rock blocks partially disjointed from the rock mass which were formed by these processes might have been easily broken down by hammering the rock with heavy masses: the chert nodules were thus quickly loosened. In fact a pile of several well-rounded limestone river cobbles 20–40 cm large that might have been used as hammers was found at the margin of the flint workshop, near the shelter wall: their surface shows traces of wear like pockmarks similar in shape to those found on the strikers used for flint retouching, and even though the pockmarks on these cobbles are larger and deeper, which is in accordance with this rougher use.

Flint picks, too, may have been used to break up the limestone: a tool (Fig. 4) which does not resemble any other artefact of the tool-kit of the Abruzzo epigravettian cultures could be interpreted as a pick or heavy axe (Di Lernia and Galiberti 1993:45, fig. 21:1; Brézillon 1968:281, fig. 125).

No traces of any effort to excavate the rock around the nodules to carve them out have been observed, even though they may have been erased by rock alteration; however this operation was probably unnecessary since the rock wall is “stairway” shaped (Di Lernia and Galiberti 1993:30) and the nodules could be easily extracted by simply shattering the small steps. In some cases the nodules outcropping from the wall are knapped and the exposed surface shows a negative print of a conchoidal fracture that cannot be interpreted as thermoclastic; an ancient attempt to extract them may be inferred, but there is no sure evidence of this.

Finally, it may be noteworthy that a hollow about 35 cm deep and approximately 2 m wide was found in the upper surface of the Pleistocene conglomerate that partly infills the shelter; it is located directly below the flint workshop, in front of the wall section where the cherty layers of the bedrock dip and disappear under the

conglomerate itself. The possibility that this hollow might be an attempt to dig into the covering deposit to follow the cherty level is under study and new excavations should provide new data on this question.

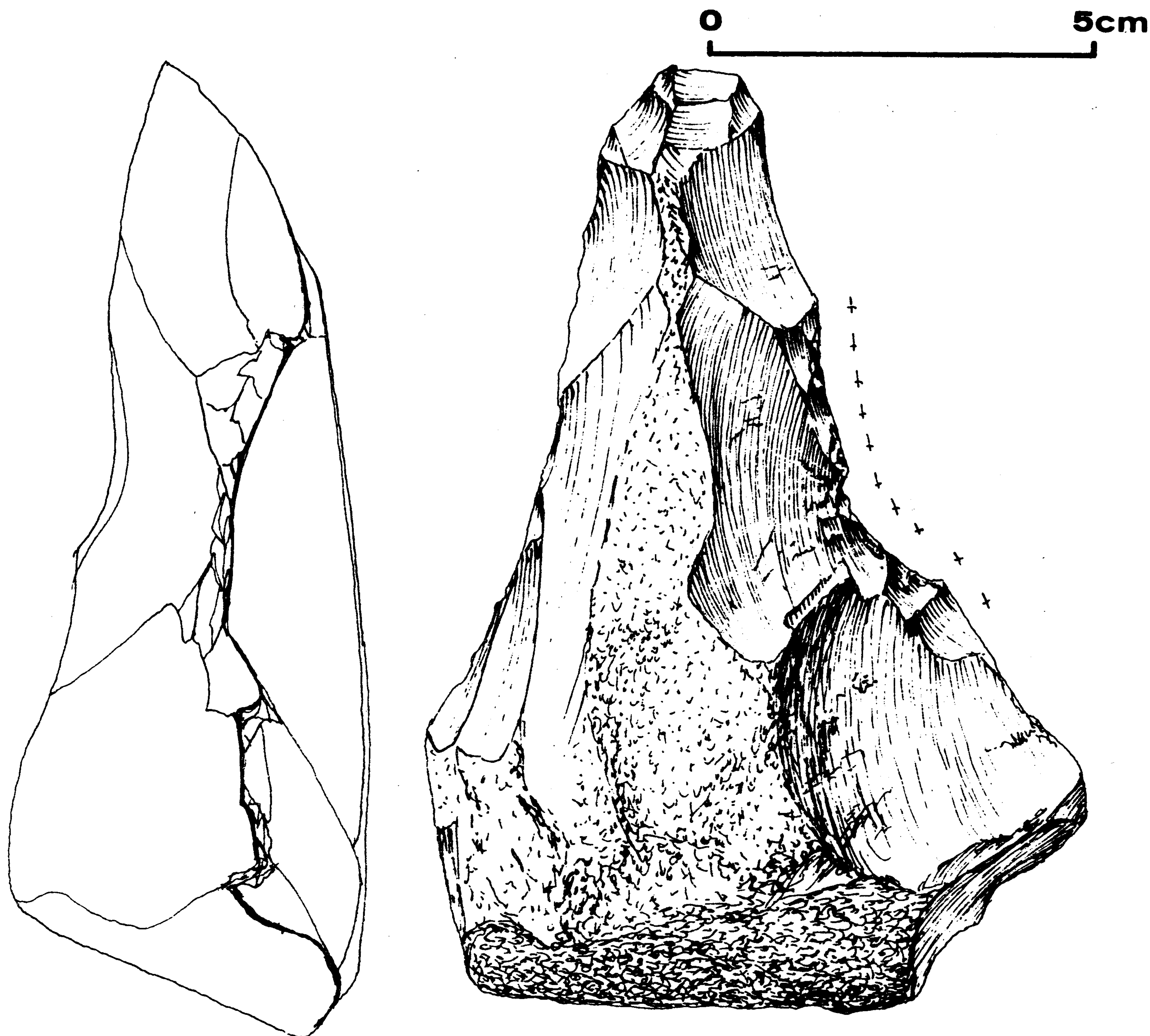


Fig. 4. "San Bartolomeo" shelter. Flint pick. Drawn by G. Almerigogna.

COMMENTS

The "S. Bartolomeo" shelter was a camp located along a hunting trail and the presence of flint was probably only one of the several reasons for which the site had been selected by the Upper Palaeolithic hunter-gatherers. The occasional visiting is probably the reason why the flint deposit had not been intensively exploited: in fact there are no pits and/or underground chambers or any other sign of intensive exploitation. The explanation for the presence of several cores or tools of "exotic"

flint is that they were imported from other sites to get things started on arrival in the shelter.

The reconstruction of the operational chain shows that the flint nodules were extracted by means of various simple techniques and the limestone waste was piled in a heap; afterwards the suitability of raw material for flaking was tested first of all by knapping the nodule and then by chipping a few flakes; finally the flaking of the suitable material was completed, leaving the flint waste on the spot. The flint may have been heat-treated before flaking.

These characteristics are in accordance with those observed on other sites of the Italian Upper Palaeolithic, even if not of the same age, as Campon di Monte Avena (Lanzinger 1984, 1989; Lanzinger and Cremaschi 1988; Cremaschi and Lanzinger 1992) and Conco-Val Lastari (Broglia and Peresani 1991).

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