XIII INTERNATIONAL CONGRESS OF PREHISTORIC AND PROTOHISTORIC SCIENCES - FORLÌ - ITALIA - 8/14 SEPTEMBER 1996

PROCEEDINGS

6 WORKSHOPS - TOME II

- LITHIC TECHNOLOGY: FROM RAW MATERIAL PROCUREMENT TO TOOL PRODUCTION
- CA' BELVEDERE DI MONTE POGGIOLO: THE FIRST INHABITANTS IN EMILIA-ROMAGNA
- BEFORE FOOD PRODUCTION IN NORTH AFRICA: GENERAL QUESTIONS AND ANALYTICAL TOOLS DEALING WITH RESOURCE EXPLOITATION AND POPULATION DYNAMICS AT 12,000-7000 BP
- FUNCTIONAL ANALYSIS OF LITHIC ARTEFACTS: CURRENT STATE OF THE RESEARCH
- RELATIONS BETWEEN THE CAUCASUS, ANATOLIA AND S.E. EUROPE IN THE COPPER AND BRONZE AGE
- THE TEACHING OF PREHISTORY IN SCHOOLS AND UNIVERSITIES
- FIRST SUGGESTIONS FROM ALTAMURA CAVE
- THE ARCHEO-PALAEONTOLOGICAL SITES OF THE SIERRA DE ATAPUERCA (SPAIN)
- INITIATIVES FOR A MODERN MUSEOGRAPHY

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Layout: Marinella Fabro, Andrea Laghi
Photocomposition: Flavio Ronchi for UNA CITTA' s.c.r.l., Forlì
Print: Grafiche M.D.M. Litografia s.r.l., Forlì
Publisher: A.B.A.C.O. s.r.l., Forlì

VOLUME 6 - Tome II

This volume has been realised with the contribution of:
CNR - Comitato 15, Scienza e Tecnologia Beni Culturali.

ISBN 88-86712-48-0

UNIONE INTERNAZIONALE DELLE SCIENZE PREISTORICHE E PROTOSTORICHE
Membro del Consiglio Internazionale della Filosofia e delle Scienze Umane
(C.I.P.S.H. - U.N.E.S.C.O.)

UNION INTERNATIONALE DES SCIENCES PRÉHISTORIQUES ET PROTOHISTORIQUES
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(C.I.P.S.H. - U.N.E.S.C.O.)

ATTI DEL XIII CONGRESSO

ACTES DU XIII CONGRES

PROCEEDINGS OF THE XIII CONGRESS

VOLUME 6 - Tome II

FORLI' - ITALIA

1996

8 - 14 settembre
8 - 14 septembre
8 - 14 september

A.B.A.C.O. EDIZIONI

WORKSHOP 13

Ca' Belvedere di Monte Poggiolo: i primi abitanti in Emilia-Romagna
Ca' Belvedere di Monte Poggiolo: les prèmiers habitants en Emilia-Romagna
Ca' Belvedere di Monte Poggiolo: the first inhabitants in Emilia-Romagna

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PEBBLE INDUSTRIES OF THE RIMINI AREA

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Surveys carried out since 1968 on Covignano hill (Rimini) have led to the discovery of numerous artifacts near San Fortunato at altitudes comprised between 100 and 150 metres above sea-level (Sabattini 1985; Fontana *et al.* 1987; Peretto 1992; Barogi *et al.* 1996; Barogi & Sabattini 1996) (Fig. 1). The examination of this material resulted in the distinction of three complexes characterised by pebble artifacts which were homogeneous from the point of view of their techno-typological characteristics and physical state.

Covignano hill, with the dorsal watershed between the rivers Marecchia and Ausa, is constituted from the south-west to the north-east by a series of Plio-Pleistocene deposits consisting of Pliocene *Argille Azzurre* and sandy beach deposits. The morphology of the hill is characterised by a series of terraces (Antoniazzi *et al.* 1996) which can be seen on the geological map (Fig. 2).

In this area the Pliocene sediments have quite limited and discontinuous outcrops and are not clearly stratified, often as a result of bioturbation. Despite this, no fossils were found although an abundant ichthyofauna was found in these rocks in the Marecchia valley (Sorbini 1982, 1987) as well as malacofauna (Ricci Lucchi *et al.* 1992), animal bones and plant remains (Sabattini 1988, 1989).

The sediments at San Fortunato are constituted by lightly cemented or loose sands, often with a crossed stratification, and with limited and generally thin intercalations of siliceous and pelitic gravels. It is a beach deposit with Pectinidae, Ostreidae, Pinnidae (Lotti & Sabattini 1985) and foramerifera attributed to the Upper Pliocene or the transition to the Pleistocene (Antoniazzi *et al.* 1996), which formed on the sea bottom at shallow depths, in which the few pelitic levels present are attributed to mud which was trapped in the depressions between the deepest sand banks. An analogous situation was found in the nearby hill at Santarcangelo (Parea 1994).

On the hill at S. Fortunato-Covignano (Fig. 3) there are seven terraces of which often only the morphological evidence has remained as a result of the erosion and anthropic activity, as well as the fluvial alluvium (Antoniazzi *et al.* 1996). These terraces have recently been interpreted as a succession of coast lines (Parea 1986, 1994), sculpted by the sea after the Quaternary glacial and interglacial periods, in a hill in progressive orogenetic uplift. Previously these terraces were attributed an alluvial origin (Lipparini 1969; Ruggieri 1970; Carloni *et al.* 1971). This particular morphological situation may in fact have had a more complex genesis, involving both marine and fluvial action and dislocations caused by faults.

The pebble industry was found in three main zones indicated on the geological map as A, B and F (Fig. 2). The first area, where 84.8% of the artifacts was found, is located on the slope immediately to the west of the highest terrace at San Fortunato. Zones B and F (with 11.6%

and 3.6% of the industry respectively) are situated at lower altitudes in the upper part of the opposite slope.

A test excavation carried out in area A, directed by Prof. Carlo Peretto, showed that the lithic industry is found exclusively in the colluvium on top of the Plio-Pleistocene beach sands. This colluvium is formed by elements derived from the erosion of the terrace on top of the hill, of which the original gravely deposit, rich in siliceous pebbles of which some are quite large, has now been virtually destroyed by erosion and anthropic activity. The artifacts found on the other slope are located in an analogous context.

Therefore it seems that the Palaeolithic hominids at S. Fortunato had settled on a tract of coastline where a river flowing down from the Apennines transported gravely sediments to the sea which were then reworked and distributed along the shore by the currents. The gravel in the river and on the beach would have provided the necessary raw material for the manufacture of lithic artifacts. The research carried out at the site of Ca' Belvedere di Monte Poggiolo (Peretto & Prati 1983; Antoniazzi *et al.* 1984, 1988, 1992, 1993, 1995, 1996; Antoniazzi 1987; Peretto *et al.* 1987; Peretto 1989, 1992; Amore *et al.* 1996) has furnished information of fundamental importance for this and other sites in the Apennine foothills in Romagna. On the basis of this information it is possible to date the deposit at San Fortunato to an archaic phase of the Lower Palaeolithic, in a coastal environment, characterised by a cold temperate climate with elephants, rhinoceros and bison, and a mainly steppe vegetation with some trees (pines, spruce etc.).

The techno-typological study of the pebble industry at San Fortunato was carried out using the simplified data collection scheme of Bisi *et al.* 1978, in association with the type list used for the study of the pebble artifacts at Monte Poggiolo in the province of Forlì, which is the reference site for the oldest pebble industries in the Emilia-Romagna area (Bisi *et al.* 1984).

The analysis which follows takes into consideration only that material from the most abundant assemblage (zone A), constituted by 473 artifacts (Barogi *et al.* 1996). The other two assemblages, from zones B and F, with 65 and 20 artifacts respectively, have the same characteristics as those found in zone A.

The study of the techno-typological characteristics of the industry from zone A resulted in the following observations:

1.The artifacts are made exclusively from flint pebbles (or pebbles with partially siliceous calcareous lithologies) with average dimensions comprised between 5 and 10 cm.

2.The flake component (composed of 254 artifacts) consists of a predominance of flakes (52%) followed by first order flakes (30%) and some pebble segments (1.5%) and rejuvenation flakes (1.5%). The data regarding the presence of cortex on the dorsal surface of the flakes show a marked prevalence of cortical artifacts (92.1%) and very few non cortical ones (7.9%). The quantity of flakes with partial lateral cortex (12.2%) and cortex backing (41.7%) is particularly interesting. The morphology of the platform shows a prevalence of cortical types (41.7%) followed by flat types (21.3%). The presence of some dihedral (2.3%) and facetted platforms (1.5%) indicates that in some cases the striking platform of the core was prepared more accurately. The majority of the bulbs are simple (56.7%) although there are also some pectunculate (6.3%) and spiked types (2.7%). The latter formed as a result of the use of bipolar percussion on anvil. The typometric analysis revealed a predominance of medium and large, short and thick artifacts.

3.There are 219 pebble artifacts. The majority is constituted by cores with one or more prepared striking platforms (41.2%) followed by cores with one or more natural striking platforms (31.1%). In general all the cores are characterised by a limited number of flake scars (between 1 and 3), although the cores with one prepared striking platform are often characterised by more flake scars. The other core types (cores with orthogonal striking platforms

2.8%, discoidal cores 5.5%, cores with randomly oriented flake scars 4.2%, cores with alternate flake scars 1.4% and unclassified cores 1.4%) are represented by very few artifacts. There are also some pebbles which were probably percussors (3.1%) and broken pebbles (2.8%).

4.The tools discovered in zone A are scarce and the variety of types extremely limited. According to the Bordes type list (1961) there are 27 tools of which more than half (51.9%) are represented by choppers and chopping tools. These are also characterised by few flake scars (between 1 and 6, with a predominance of those with 2). The cutting edges or crests are mainly linear rectilinear or linear convex. Among the other tools, two are made on pebbles and the rest on flakes. The majority consists of sidescrapers and denticulates, and there are two endscrapers and two notches. The presence of carinated types is determined by the characteristics of the blanks, which are almost exclusively first order flakes, half pebbles or very thick flakes. The retouch is either semi-abrupt or simple, invasive and direct. The profiles are either linear or denticulated.

The assemblage from Covignano is therefore an industry which was made by flaking rounded pebbles of medium dimensions with flake products characterised by large portions of cortex and by cortical or flat platforms (first order flakes, pebble segments, large decortication flakes) as well as some elements which suggest a greater exploitation of the raw material, such as rejuvenation flakes or flakes with dihedral or facetted platforms and no cortex. This situation is reflected in the analysis of the pebble artifacts which consist of numerous cores with one natural striking platform and one or only a few flake scars as well as more complex types with prepared platforms (Fig. 4).

The reduction sequence started with the creation of a flat striking platform by detaching a first order flake or by breaking the pebble longitudinally or transversally, often using the bipolar technique; it usually continued with a series of unidirectional flake removals from the opposite side of the pebble producing a series of flakes either completely covered with cortex or with lateral cortex, and finally the production of one or more flakes without cortex characterised by a long cutting edge with the flake scars of previous flakes on the dorsal surface (sometimes with the rejuvenation of the striking platform).

From a techno-typological point of view the industry has similar characteristics to that at Ca' Belvedere di Monte Poggiolo and other pebble industries, described in this volume, which have been discovered along the Apennine foothills in Emilia-Romagna at various localities in the area between Bologna and Rimini. In particular it is characterised by opportunistically flaked pebbles implying a notable "waste" of raw material. It is difficult to evaluate to what extent this aspect can be attributed to the abundant supply of local raw material, since the absence of palaeoeconomic data means that detailed interpretations of the site are not possible.

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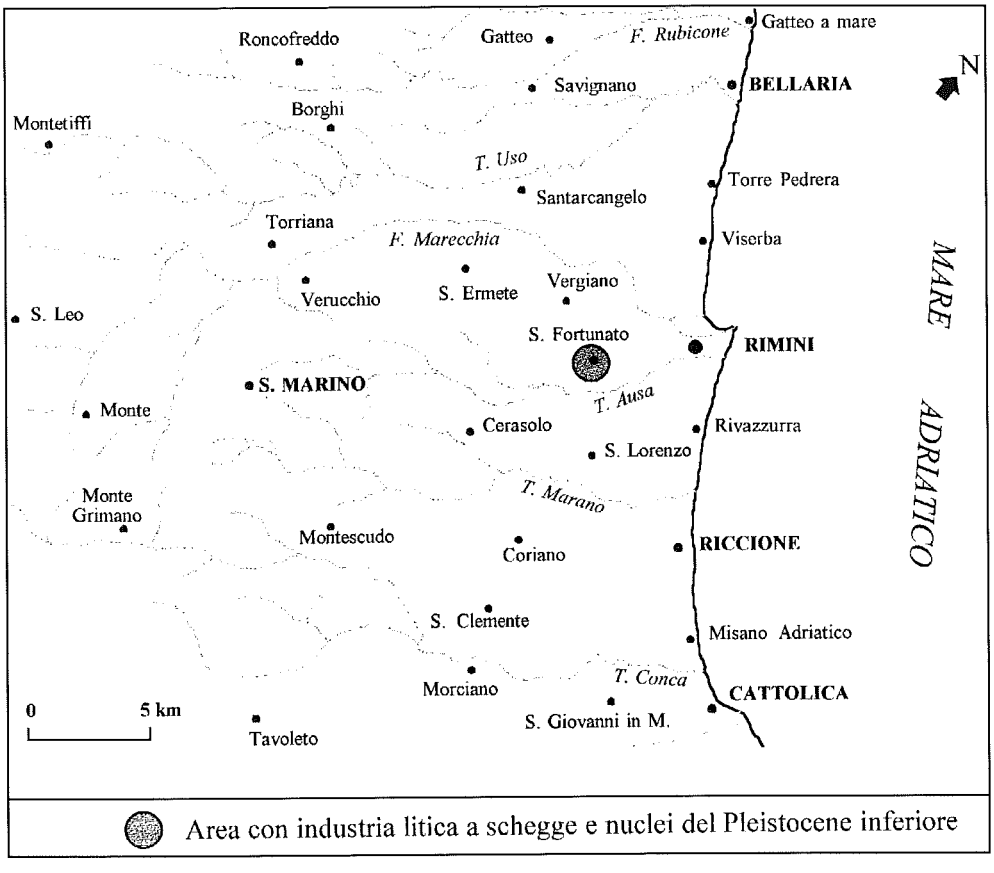

Fig. 1. Geographic location.

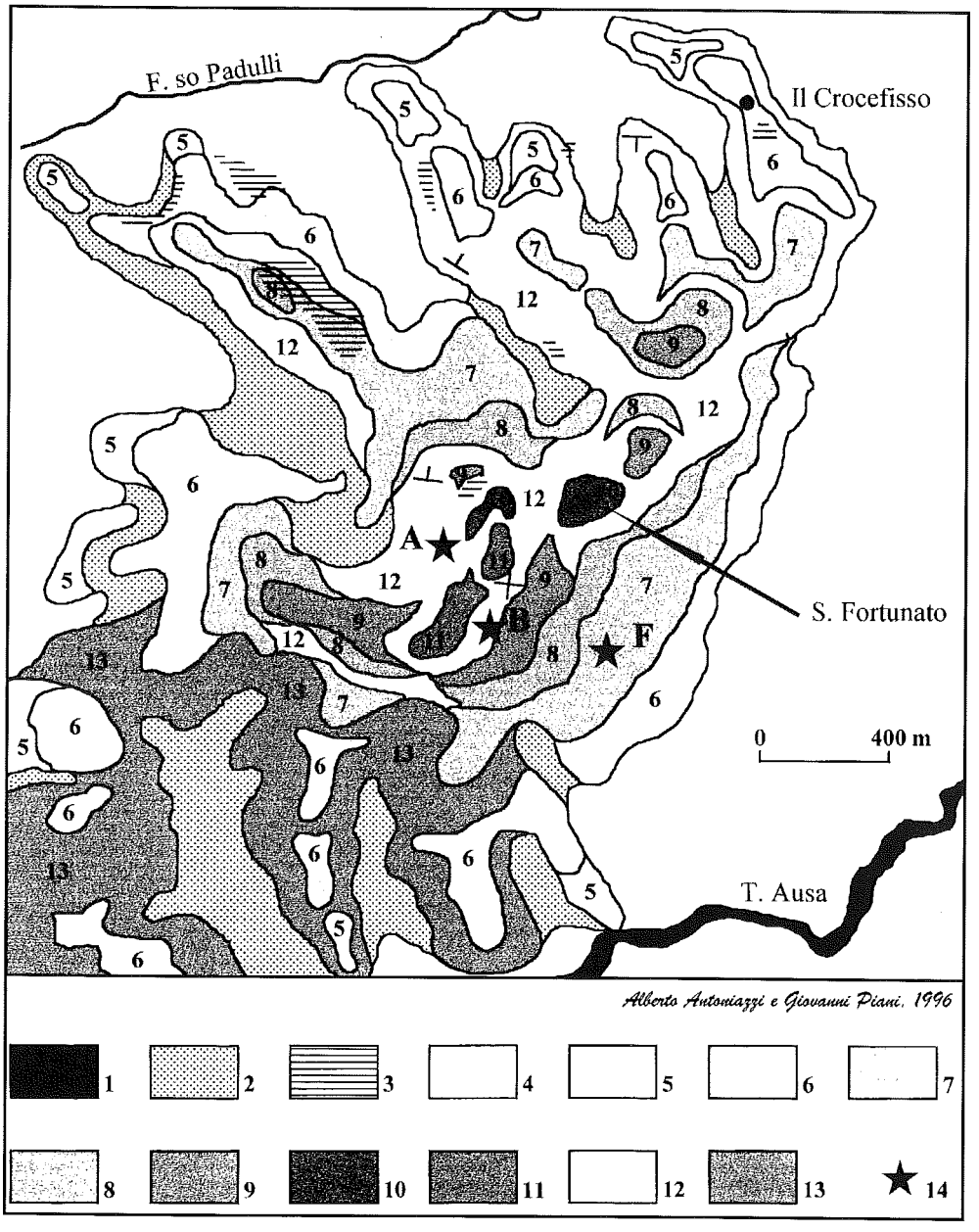

Fig. 2. Geological map of the Covignano hill with the location of the three areas where the lithic artifacts were discovered (A, B, F). Key: (1) River bed; (2) Recent colluvium; (3) Leached fersiallitic soil; (4) Alluvium (Upper Pleistocene); (5-11) Sandy gravely terraces (Lower and Middle Pleistocene); (12) Sandy beach sediments (Upper Pliocene-Lower Pleistocene); (13) *Argille Azzurre* (Pliocene); (14) Area of the discovery of the pebble industry.

Fig. 3. View of the Covignano hill showing the main terraces.

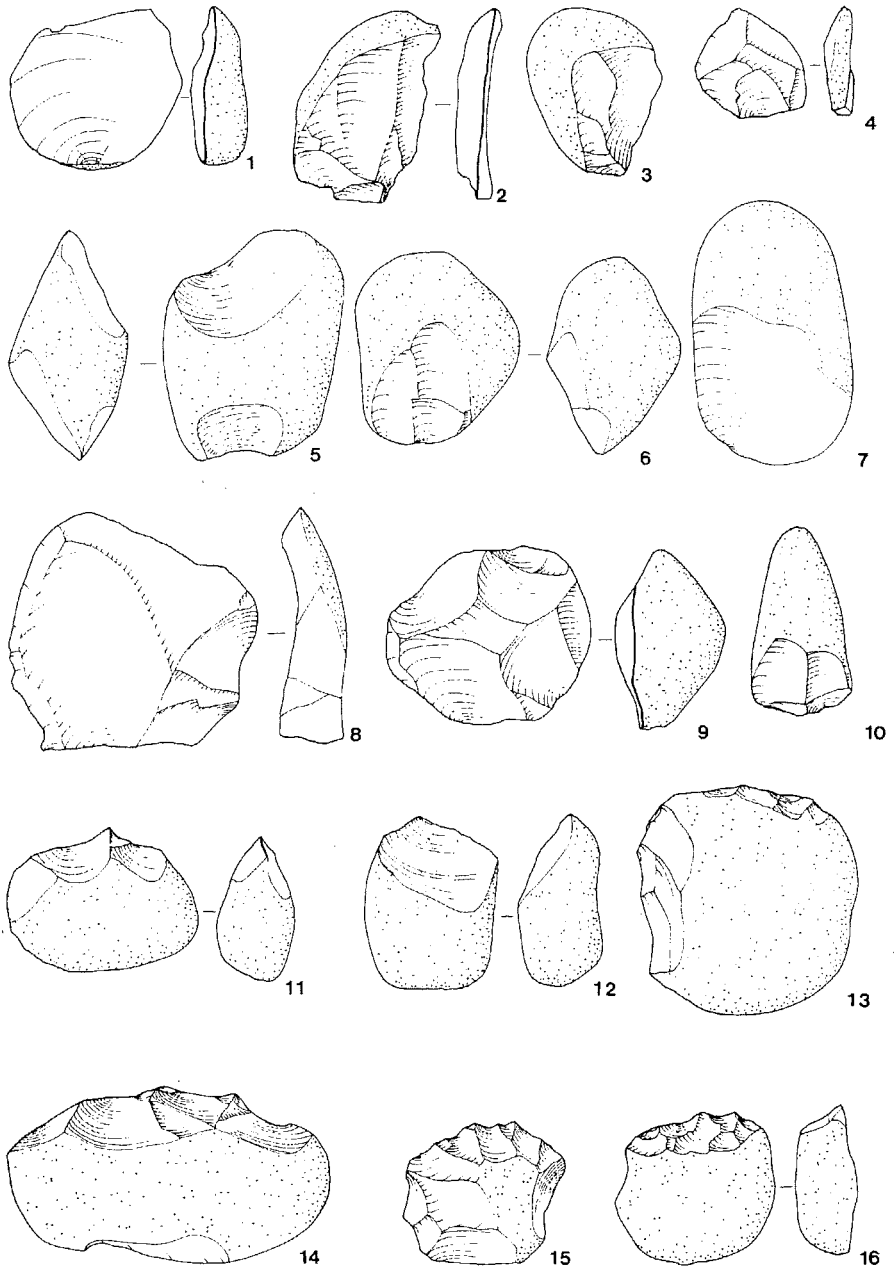

Fig. 4. Lithic industry from zone A at Covignano-San Fortunato: 1) first order flake; 2) pebble segment; 3-4) flakes; 5) core with two unprepared striking platforms; 6-7) cores with one unprepared striking platform; 8) core with one prepared striking platform; 9) core with centripetal flake scars; 10-12) unifacial and bifacial choppers; 13) latero-transversal sidescraper; 14-16) denticulate (*drawing by D. Mengoli*).