

ANNUAL JOURNAL OF RESEARCH

ISSN 1023 - 0688

# ANCIENT SINDH

PUBLICATION OF THE DEPARTMENT OF ARCHAEOLOGY, FACULTY OF NATURAL SCIENCES



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PAKISTAN

## **AN ITALO-PAKISTANI JOINT PROJECT ON THE ROHRI HILLS**

### **(SINDH - PAKISTAN) : AIMS AND PERSPECTIVES**

#### **PREFACE**

The first detailed description of the Rohri Hills was given by Blandford in his "Geology of Western Sindh" around the end of the last century. In chapter five of his volume, after describing the geological and geographical aspects of the limestone hills, he reports the occurrence of large masses of flint nodules. He also mentions the presence of flint on the flat, dissected limestone terraces on the top of the mesas and, in particular, he wrote that "the flints weather out and cover the surface throughout a large area, cores and flakes split from them being scattered about in abundance in some places" (Blandford, 1880: 103).

This preliminary archaeological note was followed, some fifty years later, by the report of Cousens (1929) and soon after by the discoveries of De Terra and Paterson (1939) who were the first to point out the presence of both Palaeolithic and Harappan assemblages on the hills. Furthermore they recognized strong analogies between the flint artefacts observed on the Rohri Hills and those from Mohenjo-daro. Thus they were the first to suggest that some kind of activity had been carried out on the hills in Harappan times.

The research was rescued by B. Allchin who mainly centred her attention to the northern and the southern edges of the hills. In the winter of 1975-1976 (Allchin, 1976:477) she found extensive Harappan chipping floors near Sukkur and Rohri and later accurately described the flint assemblage collected from the surface of 2 square metres from one of these workshops. Middle and Late paleolithic assemblages were also recovered by this Author during the same preliminary survey. Strong similarities between the artefacts from the Rohri Hills and those from Mohenjo-daro are pointed out by B. Allchin in a further paper on the flint blade industries of Sindh where the Harappan working floor of the Rohri Hills are illustrated for the first time (Allchin, 1979:185). In this article great importance is given to the geographical location of the flint workshops found near Sukkur. In fact the concentration of Harappan factories close to the Indus gorge and the supposed absence of working floors of the same Culture further to the south is considered by the Author as a proof that the flint artefacts were transported by boat down to the town of Mohenjo-daro (Allchin, 1979:187). More considerations were made on the sites around Rohri, in particular on the distribution of the manufacture *debris* and on the presence of cleared spaces large enough for a man to sit and chip artefacts (Allchin *et al.*, 1978: 277).

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More recently, investigations were carried out in February 1986 by P. Biagi and M. Cremaschi (1988, 1990, 1991). During the 1986 survey many Palaeolithic and Harappan sites (fig.1) were discovered in several, until then uninvestigated, territories of the hills. The region around Rohri and Sukkur was visited again. It showed that most of the working floors observed a few years before had already been destroyed for industrial purposes. Nevertheless important sites were found in that area. Among these that of the Buddhist Cave (later destroyed in 1990) where an archaeological sequence with Harappan and Buddhist layers was recognized for the first time (Biagi and Cremaschi, 1990: 37) (fig.2). Early palaeolithic Acheulian industries characterized by hand-axes and side scrapers on "Clactonian" and *Proto-Levallois* flakes were also recovered as well as several assemblages typologically attributable to the Early-Middle Palaeolithic (figs. 3 and 4) (Biagi and Cremaschi, 1988).

Important discoveries were also made along the western fringes of the central part of the hills, in the neighbourhood of the shrine of Shadee Shaheed. Here dozens of impressive Harappan structures related to the flint quarrying carried out on industrial scale, were recovered (Biagi and Cremaschi, 1991). Extractive pits and workshops, sometimes grouped together, with abundant discharges of *debitage* flakes border the limestone plateaus of the hills, just to the south and the east of the shrine (fig.5).

## THE PROJECT

The archaeological discoveries of February 1986 demonstrated that large territories of the Rohri Hills were totally unknown from an archaeological point of view and potentially rich in prehistoric sites. Nevertheless many areas were in danger (or had already been destroyed) since limestone blocks were collected for cement making and both limestone and chert nodules were gathered to be carried down the hills to be used as road metal (Dar, 1991: 2).

The importance of the Rohri Hills sites led to the making of a three year (1993-1995) cooperation of archaeological investigation and recording between the Universities of Shah Abdul Latif Khairpur (Dept. of Archaeology) and Venice (Italy) (Dept. of Historical Archaeological and Oriental Sciences) called the joint Italo - Pakistani Rohri Hills project whose scope is the study of the Harappan quarrying activities and the environmental reconstruction of the Rohri Hills landscape at least from the fifth millennium BP onwards (1). The project, started in January 1993, includes the following specialists:

- Prof. Dr. Nilofer Shaikh (Project Director)
- Prof. Dr. Paolo Biagi (Project co-Director)
- Prof. Dr. Mauro Cremaschi (Geoarchaeologist)
- Prof. Mukhtiar Kazi (Archaeologist. Palaeolithic assemblages)
- Dr. Lanfredo Castelletti (Archaeobotanist)
- Dr. Marco Madella (Archaeobotanist)
- Dr. Caterina Ottomano (Palaeopedologist and geomorphologist)
- Dr. Andrea Pessina (Archaeologist. Flint typologist)
- Mr. Abdul Qayoom Mahar (Botanist)
- Dr. Elisabetta Starnini (Archaeologist and designer)
- Mr. Aldo Maifreni (Surveyer and Photographer)
- Mr. G. Muhiuddin Veesar (Archaeologist)

Mr. Qasid Hussain Malah (Archaeologist. Harappan pottery)

Mr. Fabio Negrino (Archaeologist. Flint refitting)

Mr. Alfredo Ratti (Botanist)

The survey carried out during the first season of fieldwork (January 1993) on the hills surrounding the shrine of Shadee Shaheed revealed the presence of hundreds of archeological structures related to flint extractive activities, 794 of which were recorded and 2 (partly) excavated, namely sites 58 and 59 (fig. 6), along the northern fringe of the mesa (Biagi and Pessina, 1993: figs. 1 and 2). The survey, that lasted ten days, was carried out by four Pakistani and Italian members of the team working together, seven hours per day. The survey investigated the limestone terrace facing Shadee Shaheed as well as its inner edge, covering a total area of some 2.5 square kilometers. All the survey was carried out on foot, accurately checking the above-mentioned territory, and marking with waterproof red paint, each archaeological structure. The features themselves were divided into the following categories: 1) pits, 2) workshops, 3) trenches, 4) platforms, 5) "C" shaped canals. In fact most of the structures revealed to be composed of more than one units (e.g. several joint pits or one pit and some workshops etc.). One of the smallest workshops, called site 58, was collected in full, square metre per square metres. It produced 101.73 kilograms of flint artefacts, including 211 cores and 6903 artefacts. Site 59, some 70 metres NNE of site 58, is a structure composed of a quarrying pit and a workshop. The pit had been tested opening a trench one metre wide. The trench excavation was carried out by showelling with the help of two workmen and its profile later cleaned by trowel. Even though the excavation was too small to draw any conclusion, it was clear that the pit had been excavated in order to reach the natural flint vein. The pit was later partly refilled with limestone block in Harappan times and then abandoned. A flint workshop had been partially destroyed by the Harappan diggers who went down some 2 metres into the natural limestone of the mesa. Two square metres of the workshop connected with the pit were collected. They yielded a flint assemblage fairly different from that of site 58, composed almost exclusively of narrow and very narrow flint bladelets.

Prehistoric quarrying has been subject of recent work throughout the world (Ericson and Purdy, 1984, Torrence, 1986). The importance of quarries as archaeological sites is reported by Ericson (1984: 1) "The quarry remains the logical site to begin the study of a stone-tool-using culture".

Even though the study of the Shadee Shaheed quarries is still at its beginnings, the analysis of the flint assemblages demonstrated the complexity of the Harappan industrial working chain. The two workshops studied in detail (sites 58 and 59) show rather different characteristic artefacts (Biagi and Pessina, 1993). The production of blades and narrow blades was undoubtedly very specialised and obtained with both the percussion and the pressure technique according to the specific necessities of the craftman.

Given the restricted area so far surveyed (2.5 square kms only), many problems remain open to question. What is clear is that the flint outcrops were exploited on an industrial scale and that some of the suggestions of Inizan and Lechevallier (1990: 57), such as those considering the long-distance transport of raw materials throughout the whole Indus Valley, most probably correct. On the basis of the results of the 1993 investigations some of the assumptions by Cleland (1987: 106) who considers the site of Kot Diji as a production centre for the export of lithic blades seem to be over. In fact, this site (Khan, 1965), from which a collection of only 295 "morphological flint types" is preserved, lies some 10 miles to the south west of the largest concentration of the Shadee Shaheed workshops. Furthermore, recent investigations have now furnished new evidence of the presence of more Harappan sites in the vicinity of Rohri hills which have presence of chert blades and cores etc, alongwith other cultural material. All this new evidence of workshop on hill tops and residential sites in the vicinity of hills has given a new shape

to the production distribution pattern of the Indus Civilization people and will have to be studied in the new perspective.

Other open questions concern the chronology of the flint quarries. At this preliminary stage of the research it is impossible to define a seriation of the sites. The impressive amount of extractive structures and workshops around Shadee Shaheed and the presence of chipping floors in other areas of the hills, such as Rohri for instance, should indicate that the activity lasted for an unspecified, rather long period.

Many artifacts were certainly traded to the main cities of the Indus Valley as suggested by Allchin and Allchin (1982:183) and Kenoyer (1984). Among these certainly are the unretouched narrow bladelets whose manufacture into highly specialised instruments, such as the hypermicrolithic drills (Bulgarelli, 1986), is well documented from the Moneer South East Area of Mohenjo-Daro (Vidale, 1990) (2). This research has opened up new vistas and has provided much more new data for further research on the Indus Civilization.

#### FOOT NOTES

(1). According to the agreement signed on February 8th, 1992, the Pakistani side will provide:

1. 1:50000 maps of the region to be surveyed and any other available maps as well as aerial photographs, if allowed by the government.
2. Accommodation for the Italian team into double rooms,
3. Excavation equipment and photographic laboratory for the development and printing of B&W films.

The Italian side will provide:

1. Food for the Italian team for all the duration of their stay at the Shah Abdul Latif University Khairpur.
2. B&W films and slides as well as printing paper for all the project members.
3. Laboratory analyses for geoarchaeological and archaeobotanical samples.
4. One balloon for aerial photographs and technical equipment for site surveying.

The Italian members of the team will also assist the students of Archaeology of the Shah Abdul Latif University and will deliver a number of lectures on prehistoric Archaeology, Geoarchaeology and Archaeobotany.

The preliminary reports on the annual campaigns will be published in **Ancient Sindh** research Journal of the department of Archaeology Shah Abdul Latif University Khairpur and in the Rivista di Archaeologia, periodical of the department of Historical-Archaeological and Oriental Sciences of the University of Venice (Italy) or any other scientific articles on different aspects of the research will be published in any international journal after agreement between the project Directors.

The final report of the three years (1993-1995) joint Italo-Pakistani Rohri hills Project will be published in **Ancient Sindh** Research Journal of the department of Archaeology, Shah Abdul Latif University, Khairpur and in a volume issued by the department of historical-Archaeological and Oriental Sciences of the University of Venice (Italy).

(2) The training of a student or a department teacher of the University of Khairpur in the study of Macrobotanical remains from Archaeological sites, for a period of one month to be spent in Italy at the Archaeobiology Laboratory of the Museum of Como.

(3) The project, officially licenced by the Director General of Archaeology and Museums of the Government of Pakistan (No.33/5/92- Arch.) (P-11), is under the patronage of the Italian Institute for prehistory and protohistory (IIPP) and of the Museicivici di Como (Italy). It is financially supported by the University of Shah Abdul Latif Khairpur (Sindh-Pakistan), Serre Ratti Ltd (Como - Italy), Ligabue Foundation (Vencie- Italy), Maffei Ltd (Milan - Italy) and Geosondaggi Ltd (Este -Italy).

## REFERENCES

- Allchin, B. 1976 - *The Palaeolithic Sites in the Plains of Sind and their Geographical Implications*. The Geographical Journal, 142 (3) : 471 - 489. (Reprinted in this volume)
- Allchin, B. 1979 - *Stone Blade Industries of Early Settlements in Sindh as Indicators of Geographical and Socio - economical Change*. In Taddei, M. (ed.) *South Asian Archaeology 1977*: 173 - 212. Naples.
- Allchin, B. and Allchin, R. 1982 - *The Rise of Civilization in India and Pakistan*. Cambridge, University Press.
- Allchin, B. Goudie, A. and Hedge, K. 1978 - *The Early Prehistory and Palaeogeography of the Great Indian Desert*. London, Academic Press.
- Biagi, P. and Cremaschi, M. 1988 - *The Early Palaeolithic Sites of the Rohri Hills (Sindh, Pakistan) and their Environmental significance*. World Archaeology, 19 (3) : 421 - 433.
- Biagi, P. and Cremaschi, M. 1990 - *Geoarchaeological Investigations on the Rohri Hills (Sindh, Pakistan)*. In Taddei, M. (ed.) *South Asian Archaeology 1987*: 31 -42. Rome.
- Biagi, P. and Cremaschi, M. 1991 - *The Harappan Flint Quarries of the Rohri Hills (Sindh -Pakistan)*. *Antiquity*, 65 (246) : 97 -102.
- Biagi, P. and Pessina, A. 1993- *Surveys and Excavations in the Rohri Hills (Sindh -Pakistan): a preliminary Report on the 1993 Campaign*. This Volume.
- Blandford, W.T. 1880 - *The Geology of Western Sind*. *Memoirs of the Geological Survey of India*, 17: 1-192.
- Bulgarelli, M.G. 1986- *Remarks on the Mohenjodaro Lithic Industry Moneer South East Area*. *East & West*, 36 (4) : 517-520.
- Cleland, J.H. 1987- *Lithic Analysis and Culture Process in the Indus Region*. In Jacobson, J. (ed.) *Studies in the Archaeology of India and Pakistan*: 91-116. Aris & Phillips, Warminster.
- Cousens, H. 1929- *The Antiquities of Sind*.
- Dar, S.R. 1991 *From the Editors' Desk*. *Lahore Museum Bulletin*, IV (2) : 1-2.
- De Terra, H. and Paterson, T.T. 1939 - *Studies on the Ice Age of India and Associated Human Culture*. Washington, Carnegie Institute.
- Ericson, J.E. 1984 - *Toward the Analysis of Lithic Production Systems*. In Ericson, J.E. and Purdy, B.A. (eds.) *1984 Prehistoric Quarries and Lithic Production* :1-9. Cambridge, University Press.

- Inizan, M. L. and Lechevallier, M. 1990 - *A Techno-economic Approach to Lithics: some examples of Blade Pressure Debitage in the Indo-Pakistani Subcontinent*. In Taddei M. (ed.) *South Asian Archaeology 1987*: 43-60. Rome.
- Kenoyer, J.M. 1984 - *Chipped Stone Tools from Mohen-jo-daro*. In Lal, B.B. and Gupta, S.P. (eds.) *Frontiers of the Indus Civilization* : 117-132. New Dehli, Books & Books.
- Khan, F.A. 1965 - *Excavations at Kot Diji*. *Pakistan Archaeology*, 2: 11-85.
- Torrence, R. 1986 - *Production and Exchange of Stone Tools*. Cambridge, University Press.
- Vidale, M. 1990 - *Study of the Moneer South East Area. A Complex Industrial Site of Mohenjodaro*. *East & West*, 40 (1-4) : 301-314.

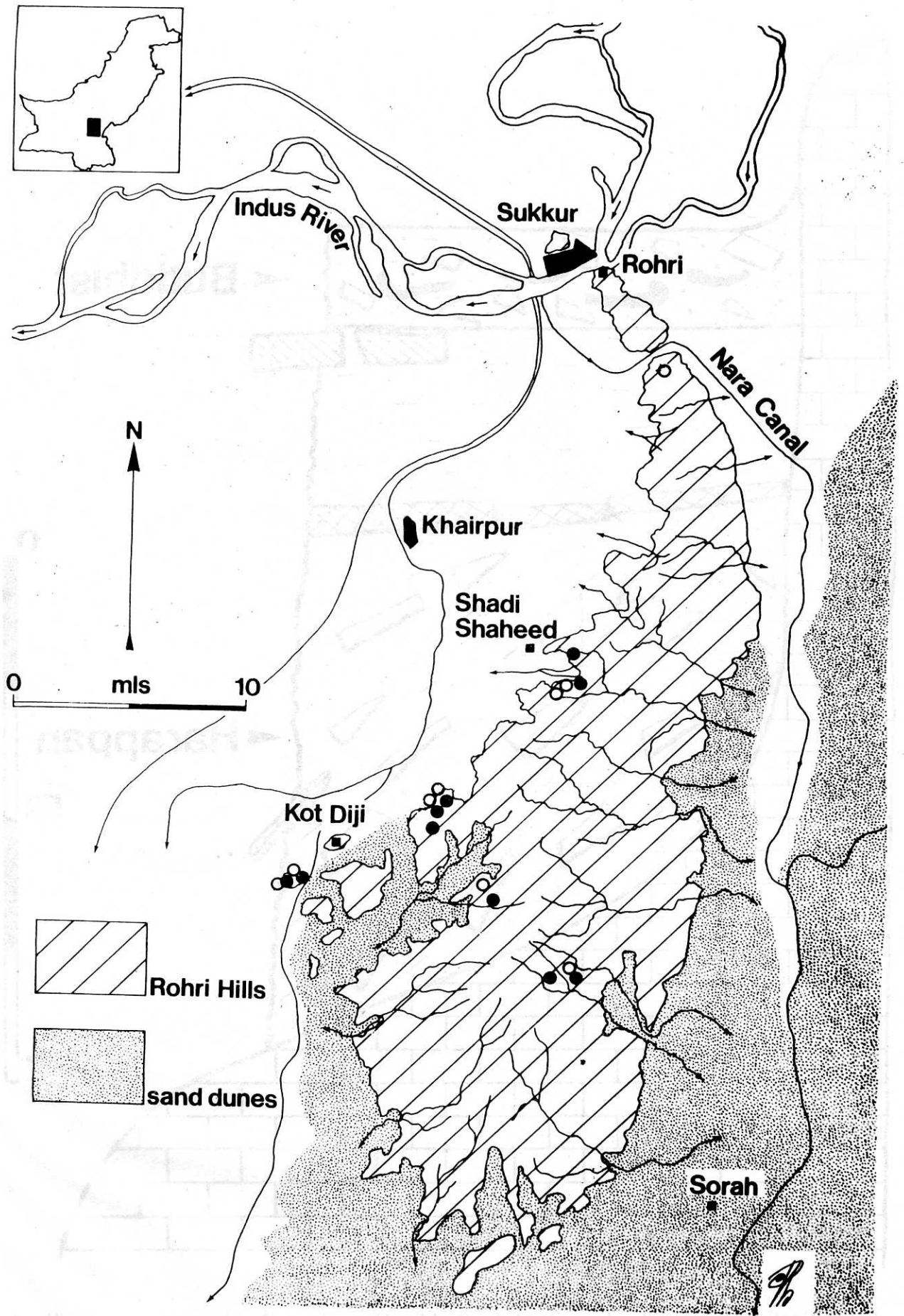


Fig. 1. Distribution map of the palaeolithic (dots) and Harappan (circles) sites discovered during the survey (data from Biagi and Cremaschi, 1990).



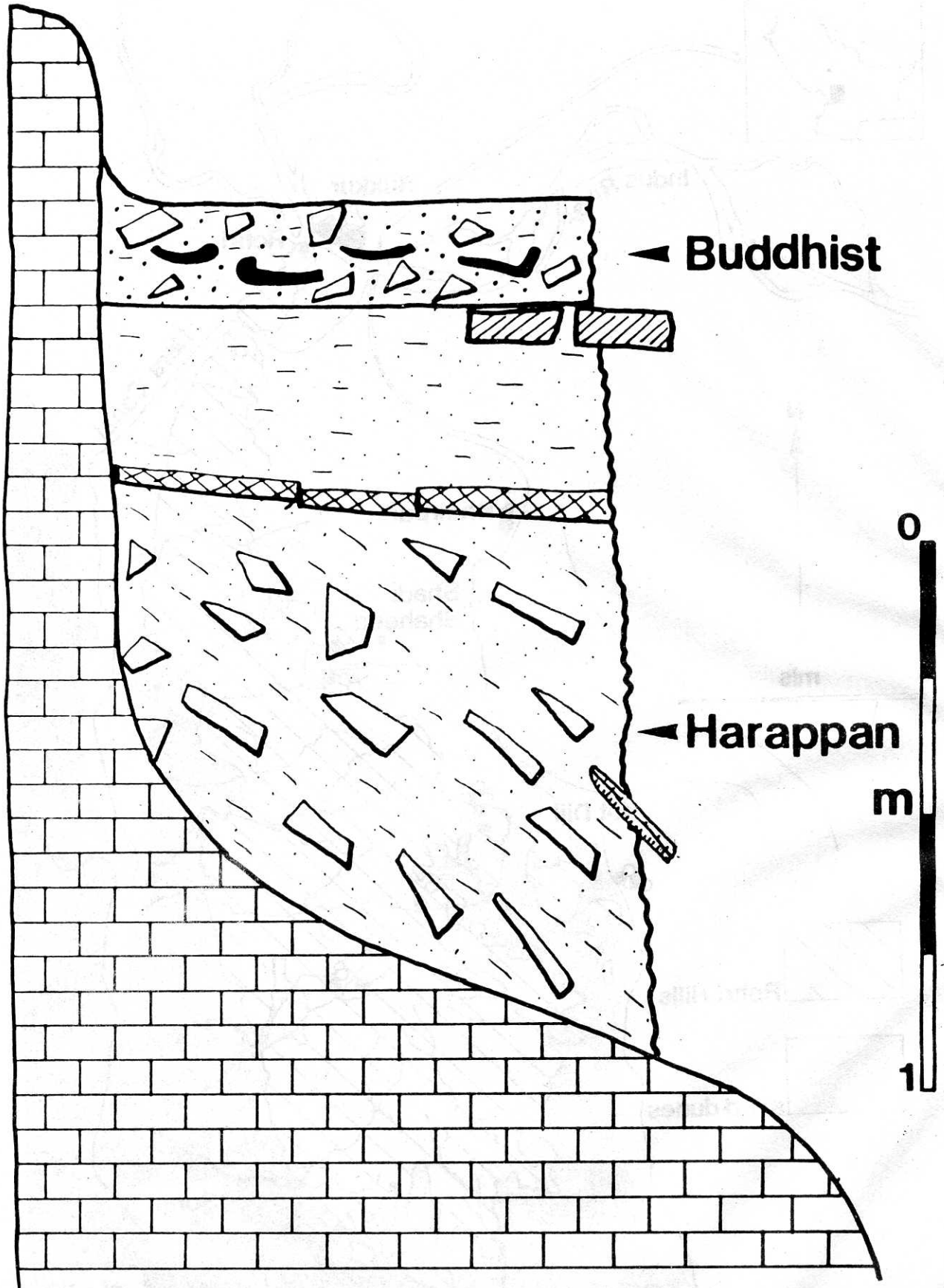


Fig.2. Section through the deposits of the Buddhist Cave (from Biagi and Cremaschi, 1990).

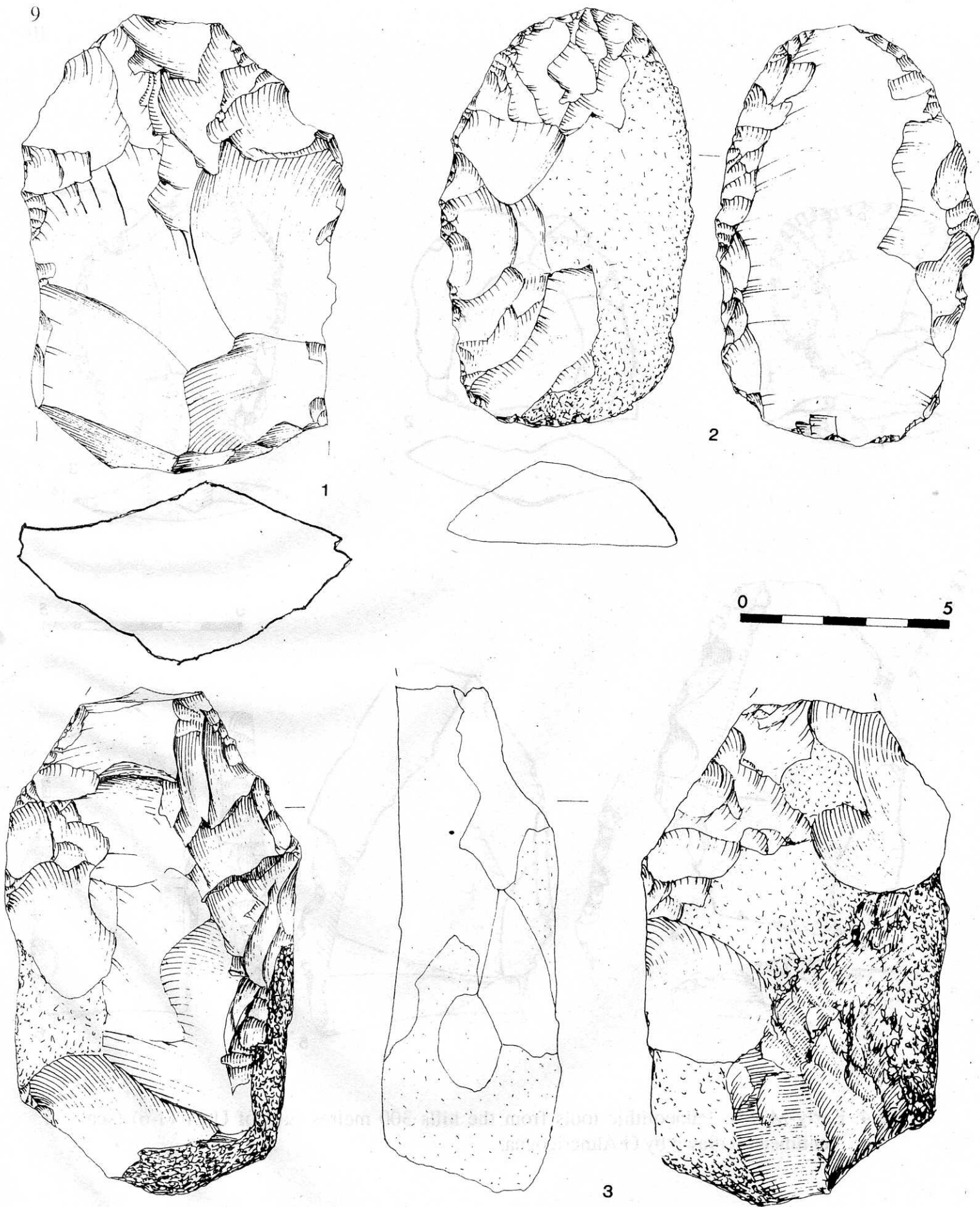


Fig.3. Early Palaeolithic bifacial tools from Unar (2,3) and the hill 300 metres East of Unar (1) (scale in centimeters) drawn by G.Almerigogna.

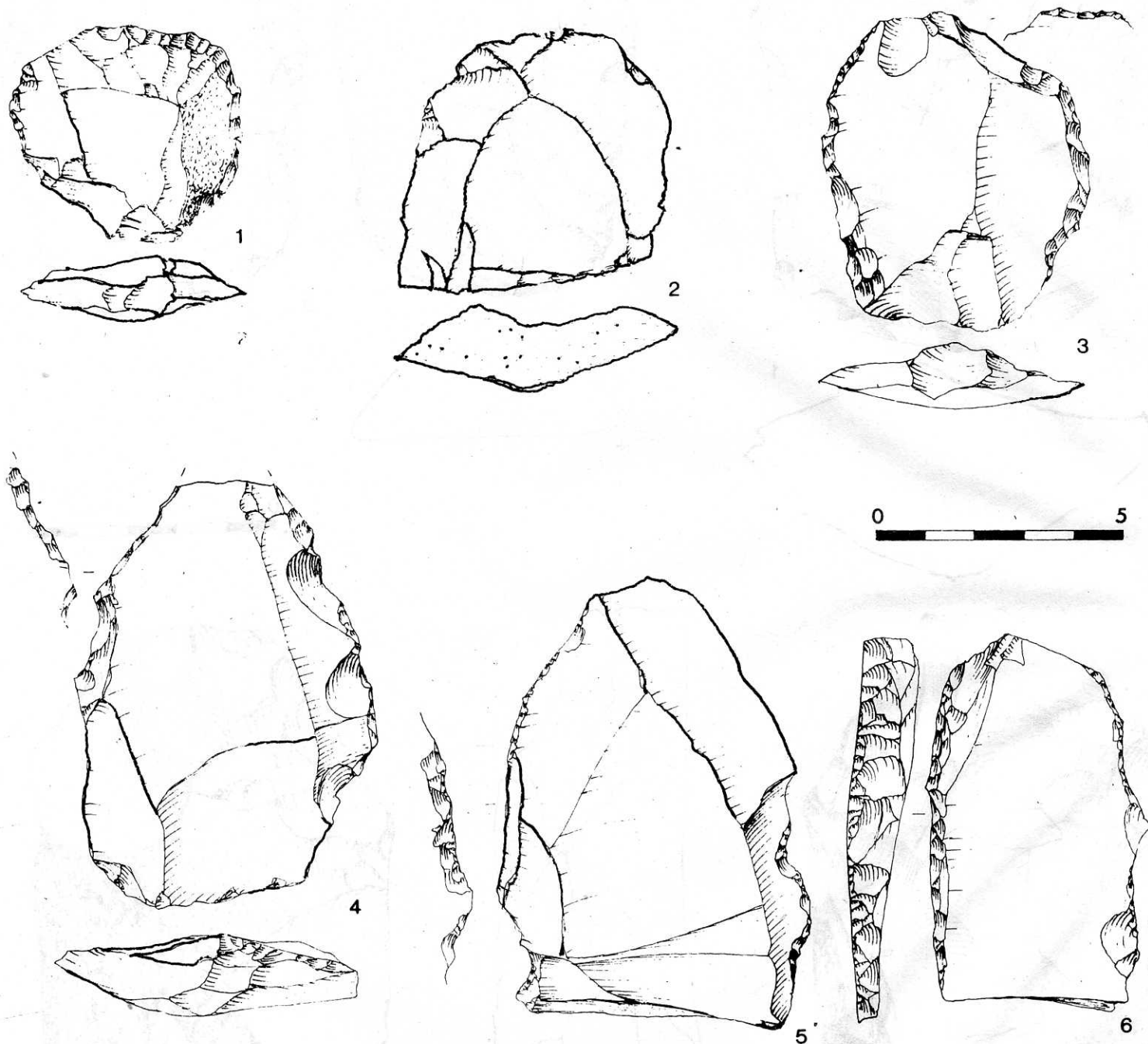


Fig.4. Early-Middle Palaeolithic tools from the hills 300 metres East of Unar (1-6) (scale in centimeters) drawn by G.Almerigogna.



Fig.5. Harappan quarry surrounded by a "C" shaped canal at site 788 at Shadee Shaheed (a) and surface of bladelet working floor at site 480 at Shadee Shaheed (b) (photo P.Biagi).



Fig.6. Shadee Shaheed site 59 before excavation (photo P.Biagi).