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International Symposium on
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March 18-20, 2010



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4th International Symposium on "UNDERWATER RESEARCH"

March 18-20, 2010

Eastern Mediterranean University

Famagusta / Turkish Republic of Northern Cyprus

The Symposium was at March 18-20, 2010 at Eastern Mediterranean University, Famagusta - Turkish Republic of Northern Cyprus. It aims to foster interaction among all concerned academicians, practitioners, and researchers from different disciplines working on underwater science and research. Furthermore, it is anticipated to provide a platform for exchange of scientific and technical information and experiences among participants. The main thematic areas and major topics of the symposium are as follows (but not limited to):

- Archeology and history
- Medicine and first aid (Diving safety, first aid, diving physiology, etc.)
- Living resources (Underwater visual census, behavior of organisms, etc.)
- Ecology and environment (Coral reefs, artificial reefs, marine pollution, etc.)
- Technology (Developments in diving technology, equipments, undersea vehicles, etc.)
- Engineering (Platform & marine systems design, construction, installation, etc.)
- Communication and media studies (Education and careers in underwater technology, underwater documentaries, etc.)
- Photography (Photography and visualization at underwater research, image interpreting, etc.)
- Tourism (Commercial diving, underwater games, recreation, ecotourism, tourist submersibles, marine aquariums, museums, etc.)
- Geology and earth sciences (Coastal zone management, underwater marine mapping, navigation, etc.)

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A GROUP STONE TOOL OF THE KÜÇÜKÇEKMECE LAKE

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Istanbul is by far the largest city in Europe and is still expanding dramatically. Proper heritage management under such circumstances of urban explosion is nearly an impossible task. However, the current city and its predecessors built next to the Bosphorus have always occupied *the* key strategic position at the crossroad of ideas, innovations, and achievements, as the bridging point between West Asia and Southeast Europe, as well as the Black Sea and the Mediterranean. Although neglected for a long time due to this urban environment, the recent large-scale rescue excavations of the Yenikapı-Marmaray projects ("Marmaray" 2007; Kocabaş 2008) have demonstrated that there is fine prehistory still un-destroyed besides and under old and modern construction (see also Dönmez 2006).

A new research initiative on prehistoric settlement of the European part of the Istanbul province (ITA-project) was founded in 2007 by the author (Ş. Aydıngün 2007; 2008), and has now expanded also to include specialists from Istanbul University, Eastern Mediterranean University (Northern Cyprus) and Bristol University in the UK. Besides many other sites along the rapidly urbanizing shores of the Black and Marmara Seas, and also in the still often wooded hinterland of Istanbul, a cluster of promising new sites have been discovered during the survey around the Küçükçekmece Gölü (fig. 1), located 20 km west of the Bosphorus entry (H. Aydıngün 2008).

The Küçükçekmece Gölü (Lake) is called a lake but is rather a shallow lagoon at the Marmara Sea with depths ranging between 4 and 18 metres. It is encircled from both southern sides by the modern Greater Istanbul suburbs of Küçükçekmece, now with 800,000, and Avcılar, with 350,000 inhabitants. Also from the north, modern settlement is approaching the lagoon. This makes pollution a big problem for the now brackish waters, and there is the imminent danger of a complete ecological overturn. At the end of last ice age, however, with the Marmara Sea land-locked and having a water level perhaps 90 to 120 metres lower than today, the lagoon as well as its more western counterpart, Büyükçekmece Gölü, now a freshwater reservoir, were deeply cut river valleys. Since then, the interplay between (1) eustatic sea level changes, (2) the particular Dardanelles-Marmara-Bosphorus-Black Sea events (e.g. Özdoğan 2007; Yanko-Hombach et al. 2007), and (3) sedimentation by rivers from the north, of which Sazlıdere and Eşkinöz are the two most important, all happening in (4) one of the most active tectonic zones in Europe and the Near East, have converted the valleys: firstly into rias or drowned estuaries; then sea bays; and finally into the current lagoons (Meriç & Algan 2007). Despite these transformations, its shores offered the perfect condition for human prehistoric settlement over millennia, with the banks of the lower reaches and mouths of the rivers to be the most favourable areas. The famous Yarımburgaz cave, with its many layers of Palaeolithic, Neolithic and Chalcolithic occupation, 6 km north of the lagoon, also testifies to this (e.g. Özdoğan et al. 1991; Arsebük 1996), and there is clearly a link between the cave occupation and the river/bay/lagoon resources.

Our survey of 2007 was arguably the most extensive ever carried out in this area, and we were also lucky due to the extreme drought of that summer. This led, for example, local farmers in Avcılar's Firuzkoy district to use bulldozers for digging out two irrigation wells some 100 metres up from where the Eşkinöz River meets the western lagoon. The removed soil contained lots of pottery fragments unseen yet anywhere near Küçükçekmece. They were hand-made, poorly fired and black and greyish-black, tempered with different minerals. A few had been decorated with incised lines. This seems to favour a Neolithic date of some while the majority of the sherds represent a middle Iron Age (fig. 2). Further investigation into the irregular profiles

of the walls showed that they were coming from a cultural level at a depth of 4 metres. The uppermost layer of 1.5 metres is rather mixed and might originate from landslides. From here, Hellenistic, Roman and Byzantine amphora, marble column parts and glass fragments were found. The second irrigation well is approximately 80 metres to the north. It is a much larger one than the first, and the lower layers were much more clearly visible. The lowest part is formed by 2 to 2.5 metres of rough sand. In some places there are small pebbles and marine fossils. The next layer is represented by a 50-60 cm wide, grey coloured, sandy clay material. Its bottom reveals a 20 cm wide zone of compact ostrea pointing to the effects of the sea, and above it more dispersed smaller seashells in a muddier context. Further sherds of the described kind are just coming from this level. It follows another layer with pebbles from river sediments, showing that phases of incoming seawater have filled the river valley alternating with meandering changes of ancient riverbeds of the Eşkinöz.

Without doubt the most important finds among the 2007 survey season were flint tools that had been recovered from the west side of the lagoon, as well as a limited area east of the current mouth of the Eşkinöz river. Here at the foot of a little peninsular protruding into the lagoon, a small tributary stream spills also into the bay. The collection consists of a uniform assemblage of yellowish flints (fig. 3), which originates, according to geologists, from the local Eocene formation. The flints are mostly finished tools, of those long-narrow blades and knives are in the majority. But there are also large pressure flakes with cortex remains (fig. 4), demonstrating that pressure technology, and tool working should have been taking place here as well. Exceptional for this part of Turkey are, however, three characteristic naviform cores (fig. 5) as well as some other pointed tools (fig. 6) diagnostic for a later Pre-Pottery Neolithic B (PPN B), in Central and Western Anatolia (Conolly 1999; Özdoğan & Başgelen [eds.] 1999; 2007). For the Istanbul province, and for the Southeast of Europe, these are the first ever findings of this kind. Sites yielding a conceivably comparable flint tool collection are Keçiçayırı and perhaps Kalkanlı in the Eskişehir province (Efe 2005; 2007; see also <http://www.kulluoba.org>), as well as from çalca, çanakkale province (Özdoğan & Gatsov 1998; Özdoğan 2005). These are from the Asiatic side of the Marmara Sea, and each some hundred kilometres away. They are conventionally dated to the beginnings or first half of the 7th millennium BC.

An envisaged excavation in this part of the lagoon shores will prove if these diagnostic PPN B flint tools come from one or several settlement sites already having changed parts of their subsistence towards farming and animal husbandry; or, if this society remains dependent on hunter-gatherer strategies while only adopting a flint manufacturing technology from their neighbours in western Asia Minor. But also hunting and gathering camps of early farmers might be imaginable when taking into consideration the special sea- and freshwater environment with its abundance of molluscs. If the first assumption can be demonstrated in the next years, this can become one of the earliest examples of a Neolithic site ever recorded in Europe, pushing the date of the arrival of the Neolithic economy, lifestyle and culture in Europe further back in time.

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Captions

Figure 1: Location of Küçükçekmece Gölü (Lake) and the newly discovered sites.

Figure 2: Neolithic and Iron Age pottery sherds from the modern irrigation wells.

Figure 3: Flint assemblage from the shores of the Küçükçekmece Gölü near Istanbul.

Figure 4: Several large pressure flint flakes with cortex.

Figure 5: Characteristic PPN B – naviform flint cores.

Figure 6: Pointed tools and blades.

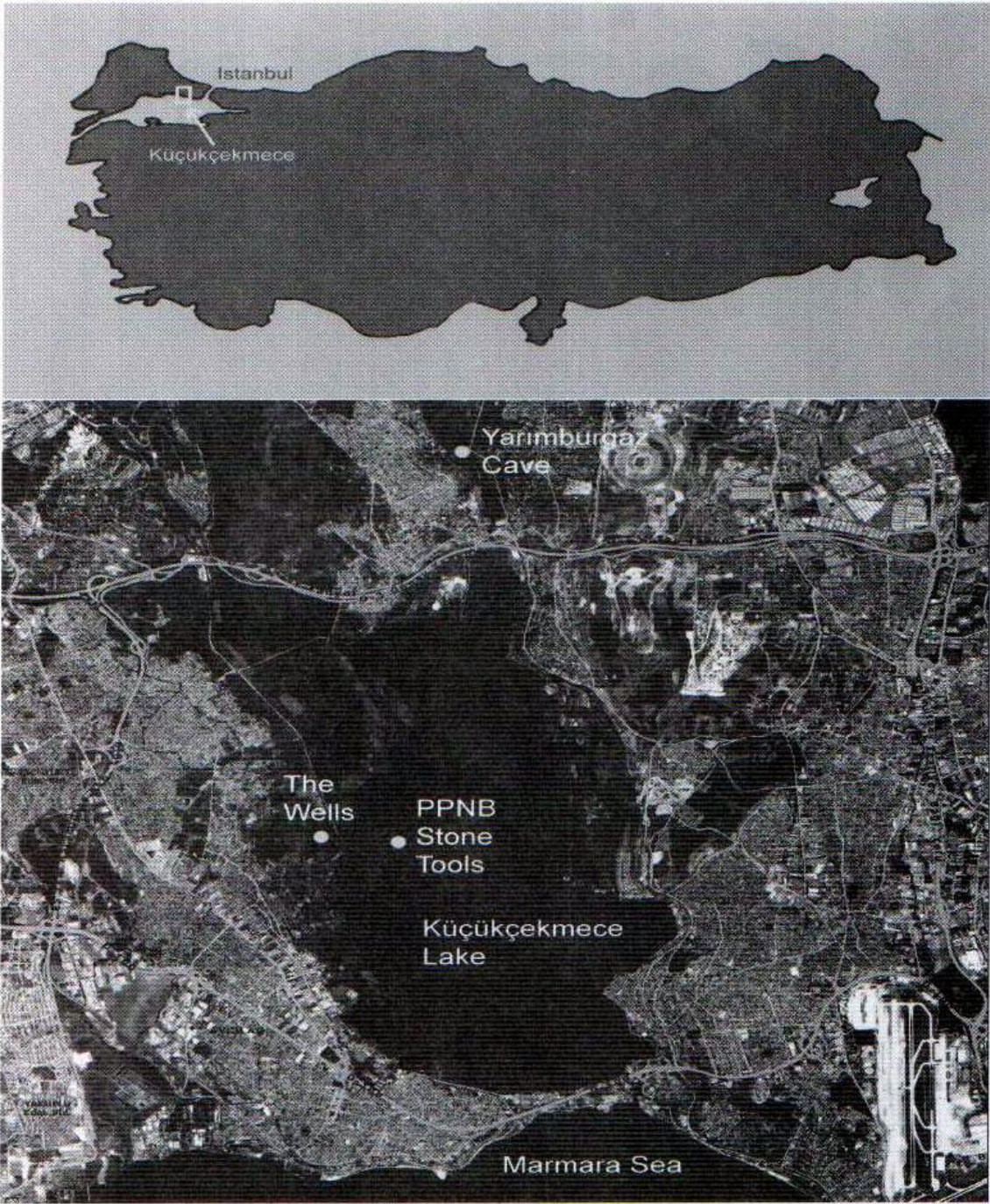


Fig. 1

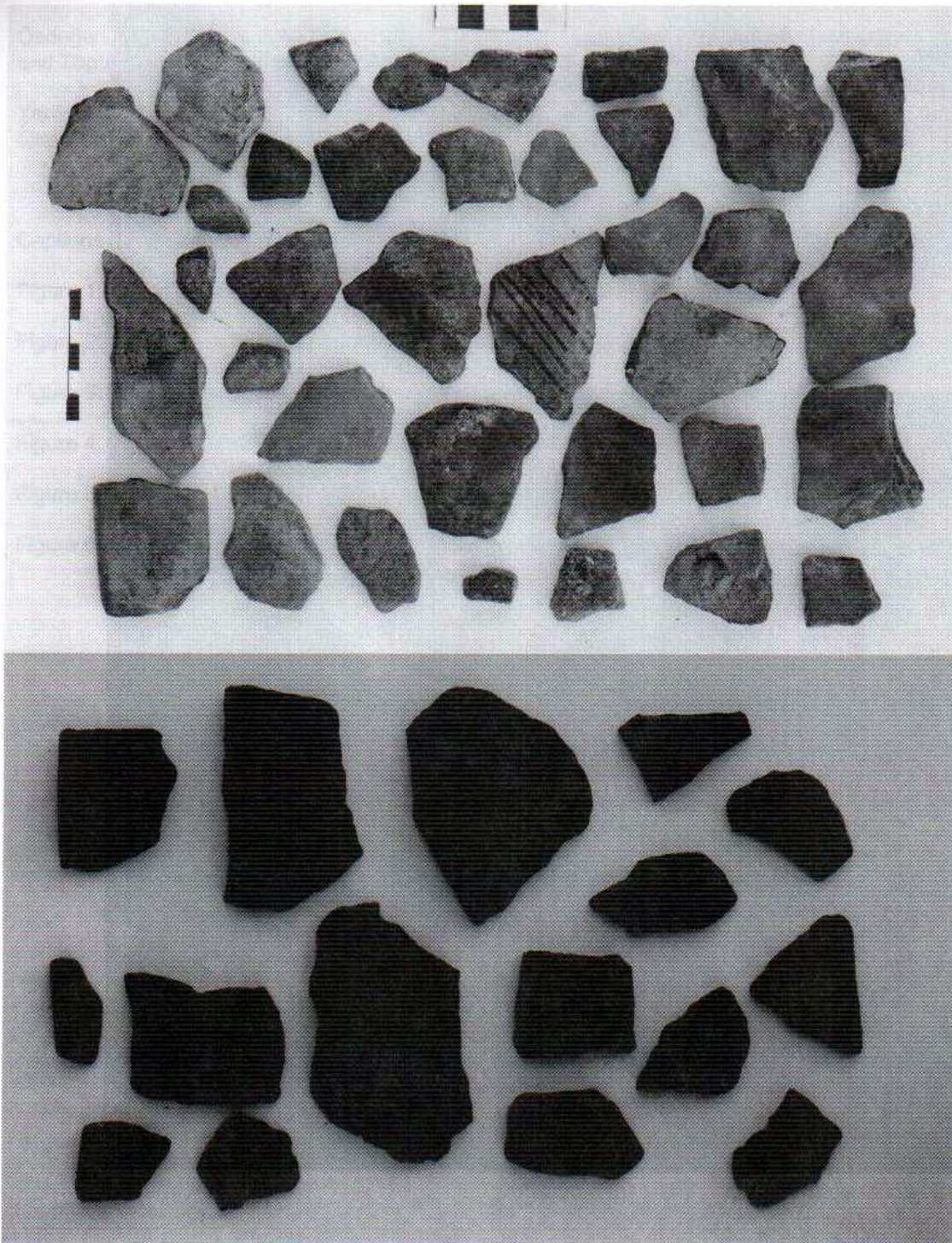


Fig. 2

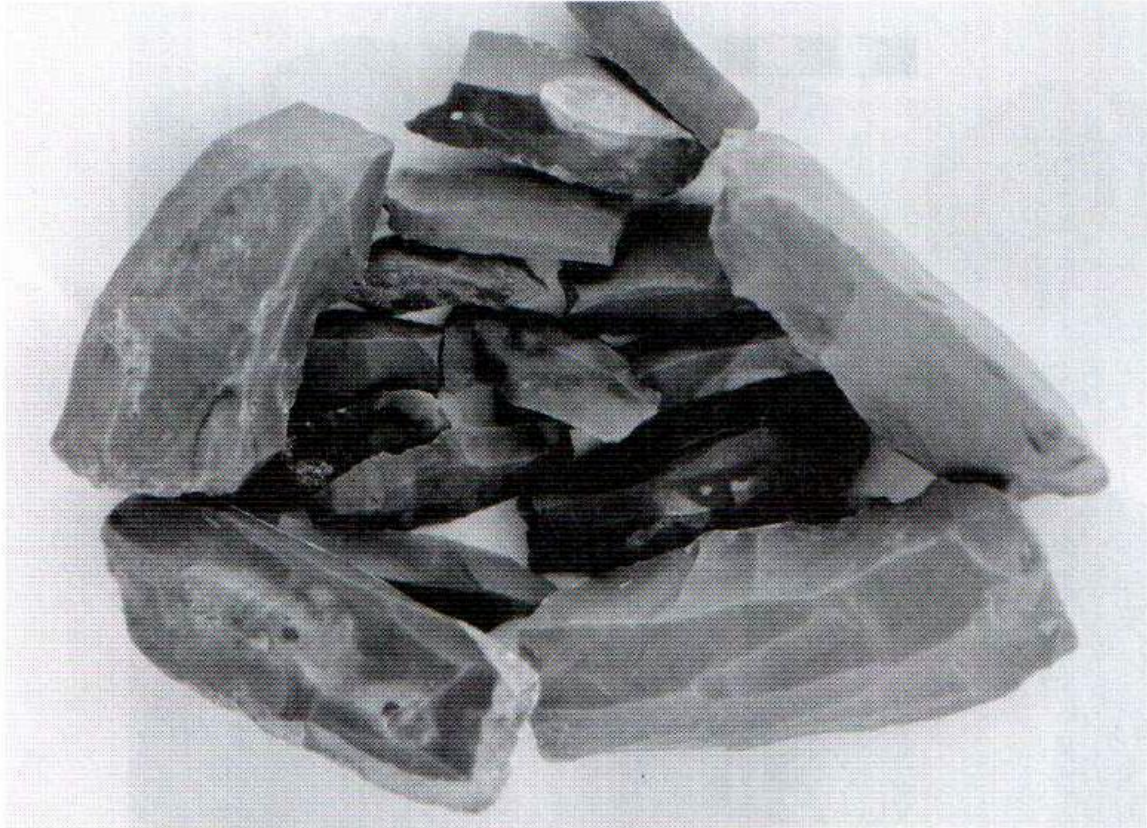


Fig. 3



Fig. 4

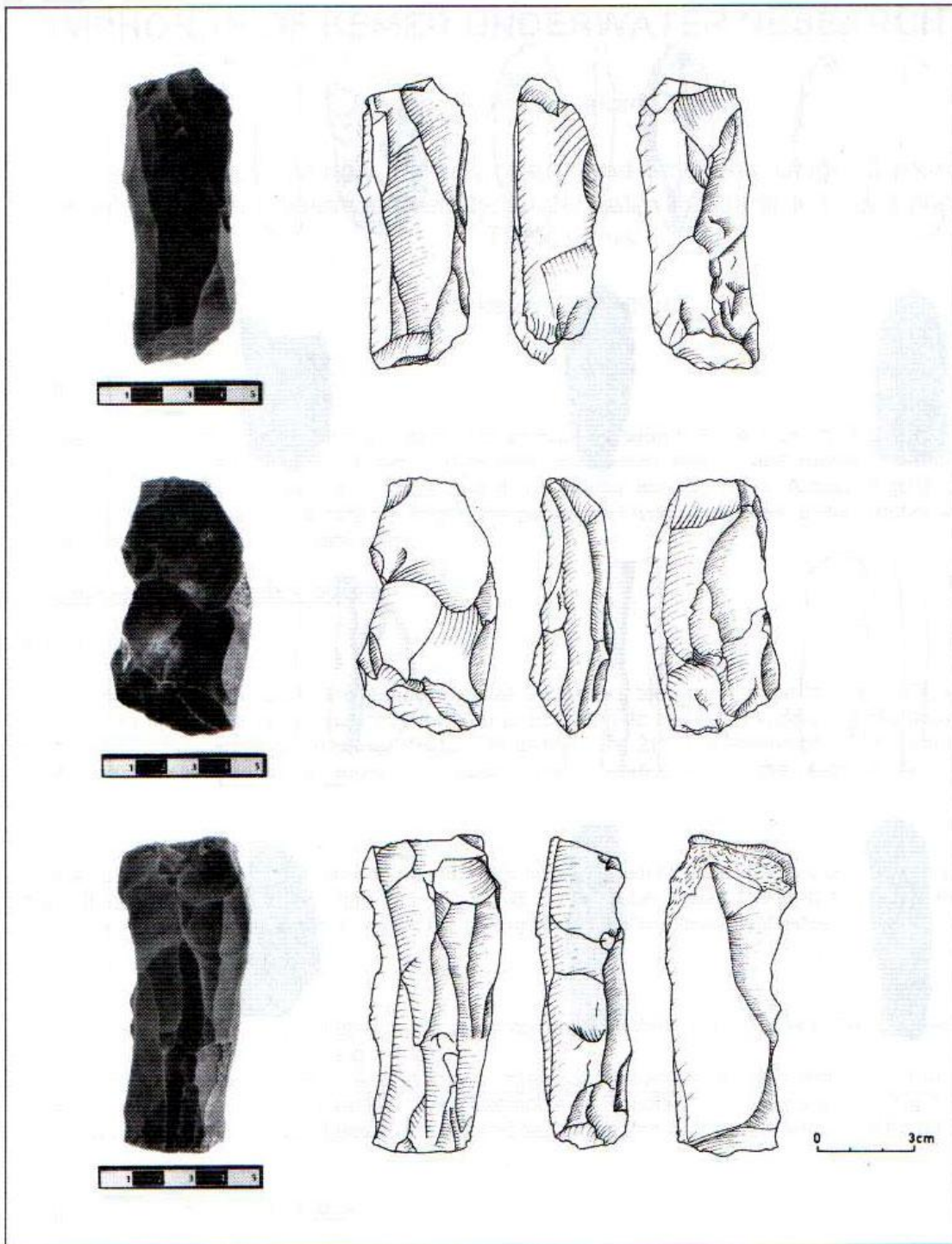


Fig. 5

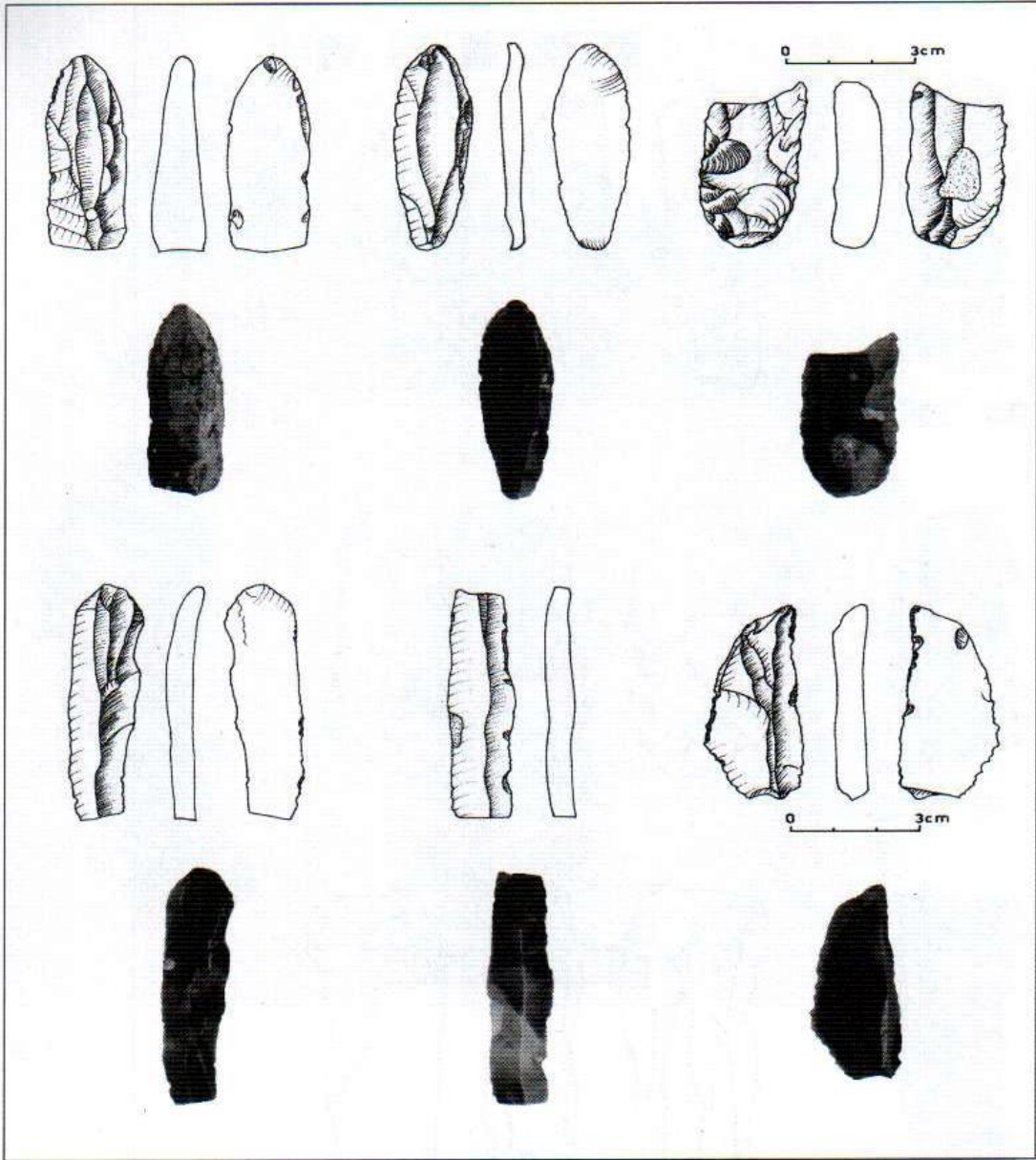


Fig. 6