

Mauro Cremaschi, Sandro Salvatori, Donatella Usai and Andrea Zerboni

## **A further “tessera” to the huge “mosaic”: studying the ancient settlement pattern of the El Salha region (south-west of Omdurman, Central Sudan)**

---

Being well aware of its basic rescue archaeology character in an area of intensive urbanisation the Is.I.A.O. El Salha Archaeological Project started in November 2000. Three field seasons have been, so far, carried out in the region under investigation, which covers a transect of 35 by 5 km, from the river to the interior, west of the White Nile (Fig. 1).

The human and natural landscape changes a lot from the Nile bank to the western edge dominated by the elevated ridges of the Jebels. The Nile bank is densely populated and a large belt west of it, some ten kilometres in length, underwent in recent times intensive exploitation by quarrying activities and overgrazing, which resulted in severe degradation and almost complete desertification. Only the western part of the concession area, far from the Nile and close to the relief fringes, maintains its natural landscape which consists of a dry savannah, rich in acacia trees and seasonal grass cover.

Based on sampling strategies, the first survey field season was completely dedicated to cross the whole area under investigation and to figure out potentialities, problems and the overall complexity of the region. At the end of the first season of work it was possible to plan selected test excavations at different sites and more extensive operations at one of the deeply-stratified Mesolithic sites (10-X-6) located along the Nile bank. Excavation at the site 10-X-6 continued in November-December 2002 together with the test excavations at burial grounds of uncertain chronological attribution.

A small area of the concession still needs to be surveyed. It is the westernmost part of the higher terraces of the Jebels, which, according to the data at hand, seems to have been exploited until and during the Early Holocene.

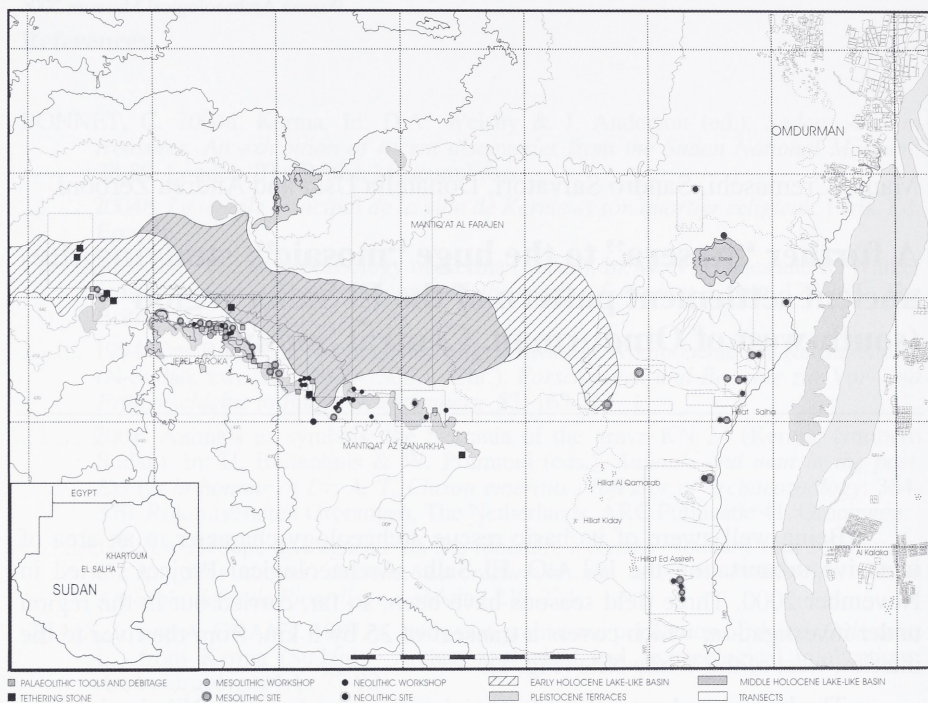


Fig. 1. Map of the area under ISIAO concession, showing surveyed areas and distribution of prehistoric sites with extent of palaeo-lacustrine formation.

One hundred and sixty sites have been located in the area under investigation and classified as follows:

1. sparse occupation scatters: one to a limited number of scattered artefacts;
2. concentrations: areas of different extent covered by densely distributed archaeological materials;
3. isolated tumulus: earthen mound covering underlying graves;
4. clustered tumuli: more than two and up to dozen earthen mounds;
5. isolated cairn: elevated stone made mound, circular or oval in shape;
6. clustered cairns: more than two and up to dozens elevated stone made mounds;
7. structural evidences: from the smallest surface stone structure to mud-brickwalls;
8. grinding stone workshops;
9. quartz workshops;
10. tethering stones.

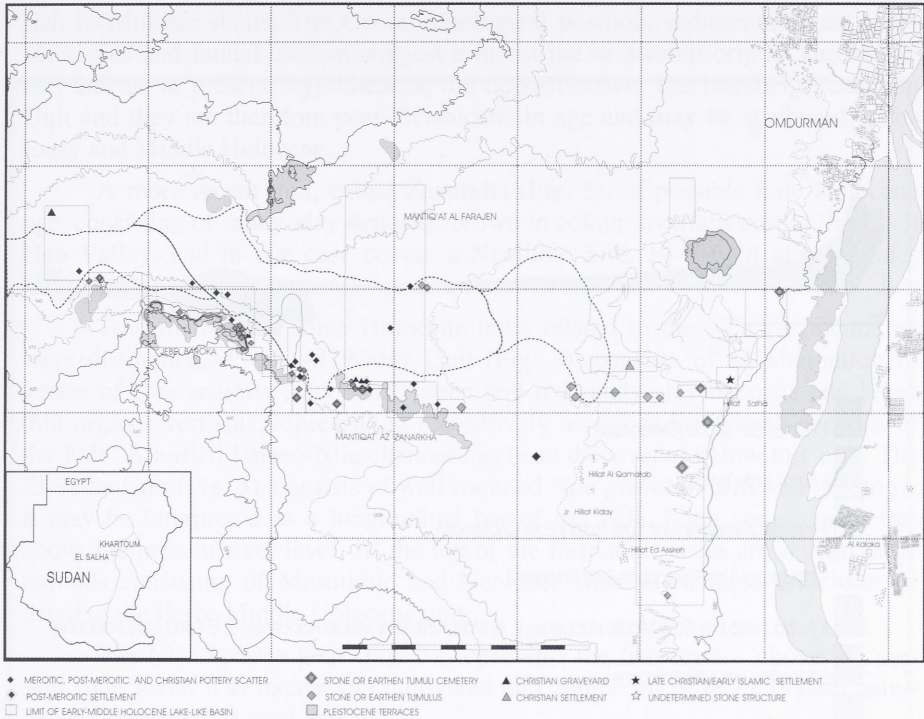


Fig. 2. Distribution of proto-historic and historic sites.

While continuing excavations at the Mesolithic – Post-Meroitic site 10-X-6 and testing Post-Meroitic graves in the cemeteries located during the first campaign next to the Jebel (10-U-21, 10-U-3), a basic program of geomorphologic investigation has been undertaken by two of the authors (Cremaschi & Zerboni). The sites' distribution clearly indicated that a large flat area between the Nile and the ridge of sandstone outcrops of the Jebel was completely devoid of prehistoric and proto-historic remains with the exception of Post-Meroitic earthen tumuli (Fig. 1, Fig. 2). Such a pattern was tentatively explained as resulting from the covering by sub-recent alluvial deposits (Usai 2003; Usai & Salvatori 2002). A silty alluvial deposit was indeed exposed along the trench dug by the Oil Company for the pipeline which links South to Central Sudan. While our hypothesis was not far from the truth, the issues of the geomorphologic survey proved to be much more complex and intriguing. A set of informal geomorphological/pedolithological units has been chosen to represent the morphogenesis of the area. Chronological attributions, while provisional, rely upon the general geological

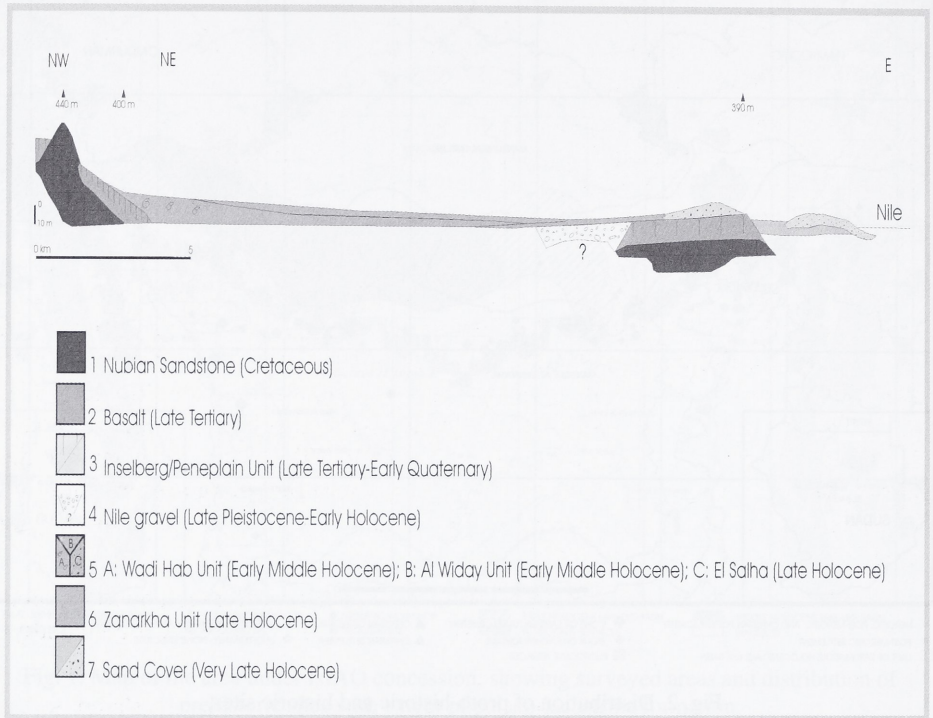


Fig. 3. Geomorphological map of the El Salha area.

characteristics of the region, and on stratigraphic relationships. The Holocene units are dated on the base of the archaeological context.

The geological bedrock of the area consists of early Tertiary sandstone (Nubian Sandstone) and of basalt. They are shaped in form of inselbergs and are surrounded by gently rolling surfaces: the peneplain, cut into deep red-coloured lateritic paleosols. This unit (Fig. 3: Inselberg/Peneplain Unit) may be related to early Pleistocene morphogenesis. As the oldest geomorphologic unit of the area, the Late Palaeolithic and Mesolithic sites, located along the northern margin of Jebel Baroka, are related to it. The Palaeolithic artefacts appear strongly abraded by wind erosion and patinated and they may have been subjected to a severe dry environment before the Holocene.

Wadi Hab is a large flat valley delimited by the Inselberg/Peneplain Unit and it is covered by of a sandy-clay deposit, about forty centimetres thick and

rich in Mollusc shells. The Geomorphological position, sedimentological characteristics and faunal content suggest a lacustrine or swamp origin. The age of this unit is, at present, hypothetical; the deposits cover the Inselberg/Peneplain Unit and they are therefore post-Pleistocene in age and may be attributed to the Early and Middle Holocene.

A more recent unit, called Zanarkha (Fig. 3), of possible Late Holocene age, consisting of sandy-clay deposits, brown in colour, overlaps part of the Wadi Hab Valley, and in one case covers a Neolithic Site, 10-V-6 (it also includes fragments of Meroitic pottery).

Toward the east some Holocene units related to the Nile sedimentation were distinguished: the Al Widay Unit (Fig. 3), consists of an alternation of lenses of grey massive silty-sand, green and red sandy-clay deposits and black thin organic vertisols, representing respectively levees and overbank deposits of the Nile. A buried Palaeo-Nile channel has been discovered below this unit. The El Salha Unit (Fig. 3), consists of well rounded Nile gravel of different lithology; it may be interpreted as a longitudinal bar of the Nile, lying some ten metres above the present river level. At the top of the formation, there are several large mounds consisting of Mesolithic and Neolithic sites. Both these units can be dated to the Early-Middle Holocene unit.

The Nile Terrace Unit (Fig. 3), represents the first terrace above the present river level; it is intensively cultivated and composed of black organic silty-clayey vertisols and sand bars.

The Holocene morphogenesis of the area appears to be related to an aggradational phase of the Nile, which led to the deposition of the gravel of the El Salha Unit and the over bank deposits of the Al Widay Unit. The Wadi Hab valley was therefore dammed up by the aggradation of the Nile and it was occupied by a lake some 30 km long with deposition from the Wadi Hab Unit. These geological events have to be localized during the early Holocene wet period because they required both an higher discharge of the Nile and at a local scale improved run off from in-land. This may explain the concentration of archaeological sites along its southern fringe; while the other relevant concentration of sites was located on the gravel bar (El Salha Unit) which separated the pond from the Nile course.

In fact, it is possible that after the onset of the Early Holocene wet period, which in other areas of the Nile Valley is recorded at the end of the tenth and the beginning of the eleventh millennium BP (Hassan 1987; Wendorf et al. 2001; Vermeersch 2002) and after the deposition of the gravel bar, which separated the Nile from the Wadi Hab, a first phase of occupation, dating to the Mesolithic period, occurred on top of the bar.

It is hoped that the excavation of Site 10-X-6, build up on this gravel, will provide further information on this specific problem. The material collected at the site seems to pertain to a more ancient phase if compared to sites found around the “reduced margins” of the swampy basin.

Whether all these sites are contemporaneous or not is not yet clear. More information and radiocarbon determinations are needed to accomplish this goal, but it is, anyway, a very unfortunate situation that most of the Mesolithic sites close to Jebels have been washed by successive flooding. One of the sites, a ca. 10 hectares scatter of Mesolithic artefacts, has been tested and trenches proved that no anthropic deposit rested on the red lateritic soil.

The Neolithic settlement pattern, apart from the sites located along the Nile, appears a little less clear as, probably, part of the evidence of this period is hidden under the Zanarkha Unit formation. Better evidence comes from an area sheltered by sandstone outcrops. Together with a few fragments of Neolithic pottery, two quartz workshops, systematically investigated, prove, typologically and technologically, that the Neolithic people settled the area around the swamp at least for selected activities.



Fig. 4. Tethering stone.

At one of these site, 10-U-19, a tethering stone was discovered (Fig. 4). While tethering stones are unusual in the region, and maybe in all Sudan, they are well known in the Saharan desert and in the Arabian peninsula and they are dated to the Neolithic (Central Sahara and Oman: Pachur 1991; Cremaschi & Negrino 2003). The tethering stones are typically positioned in locations attractive for wild animals and strategic for hunting activities as fringes of lakes

are. The fact that a tethering stone is located at the edge of the Wadi Hab Unit suggests that it was still a wet area around the VI millennium BP and it can be correlated to the wet period as recorded at the Fayum and in the Nabta region data (Wendorf et al. 2001; Vermeersch 2002). In connection with the onset of a dryer period in the Middle Holocene, VI millennium BP, is, maybe, the Late (?) Neolithic occupation of the Nile Terrace Unit silt. This site, called 10-X-3, is lying at the foot of a huge Mesolithic and Early Neolithic settlement built on the line of the Nile gravel bars.



Fig. 5. Post-Meroitic grave at cemetery 10-U-21.

While reduced in size, the lake survived until the Post-Meroitic period. Many sites of this phase, normally visible in the form of scatters of pottery, are related to the late lacustrine deposits. Also some graves, tumuli of the earthen type, are located in areas where the lake formations occur. Cairns made of Nubian sandstone are located on the outcrops of Nubian sandstone at the western margin of the Zanarkha Unit. These cairns date, as the excavation of some of them has proved, to the Post-Meroitic period (Fig. 5). The archaeological material found in these cairns is consistent with that recovered in a simple pit grave excavated at the northern periphery of site 10-X-6. The earthen tumuli are also considered to be of the Post-Meroitic period. While very few of them have

been archaeologically investigated (Marshall & Abd el Rahman Adam 1953), and their exact date is just a guess, it is interesting to note that they are located only in the area close to the Nile and, to the west, on alluvial deposits.

Two Christian sites have been found during the survey. One is a settlement with evidence of fireplaces and a widespread scatter of wheel made orange painted pottery, associated with handmade pottery types matching exactly specimens from Soba (Welsby & Daniels 1991). This site is located close to the south-western border of the swamp, not far from a Khartoum Mesolithic site. From surface observation it doesn't seem more than a temporary occupation that may have been used for agricultural purposes. Another Christian site has been located at the foot of the Jebel. It is a box grave cemetery where the graves are made with Nubian sandstone slabs. A cairn is also associated with this cemetery.

Well dated evidence of Islamic period occupation is furnished by Site 10-X-5. This site is occupying the Nile Terrace silts, at the foot of the higher Neolithic mound which should be, according to geomorphological inferences, built on, the Nile gravel bar. The site has been  $^{14}\text{C}$  dated to 1500 AD cal., on charcoal collected from a test trench during the 2001 season.

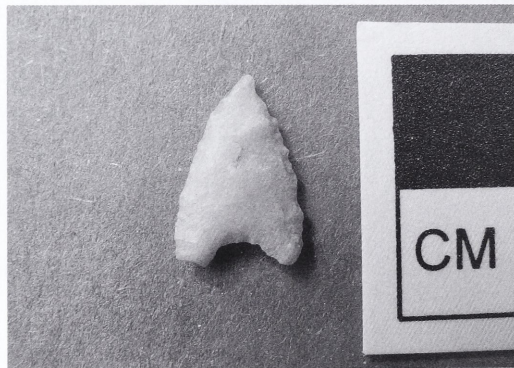


Fig. 6. Quartz arrowhead from site 10-U-44.

The most conspicuous gap in the cultural sequence concerns III to I millennium BC occupation. The few pot sherds picked up at the Mesolithic-Neolithic site 10-X-8 could not be more precisely dated or more definitely ascribed to a III or II millennium BC horizon. Likewise definite Meroitic evidence was not located in the region under investigation. Handmade, reddish-brown burnished pottery, decorated with a geometric combed pattern, does not seem to be particularly representative of this period. A nice concave base quartz



arrow-head (Fig. 6) found in a workshop site in the Jebel area may well date to the Kushite period. However, such scanty evidence does not allow any inference on the Meroitic presence in the area. It is not yet clear if the gaps are to be related to the environmental evolution of the area or if they are the result of the surveying methods employed. However, the intense nature of the survey observation makes the latter unlikely.

In the next season we will partly re-orient our surveying strategy according to the new data the geomorphologic landscape reconstruction have made available and reconsidering the effects on the local population dynamic of the historical Nile fluctuations. As is well known, a first period of drastic low discharge of the Nile is documented during the second and the beginning of the third Dynasty (Said 1993), 2900-2800 BC. From this time onward it seems that the history of the Nile has been one of alternating periods of low and high floods until the period ranging from 500 BC to AD 600 (Said 1993). If the Late Holocene Zanarkha Unit is related to this period is not clear at the moment without any radiometric determination at hand. It is possible anyway, as elsewhere stated (Caneva 2001), that in the third to first millennium BC settlement patterns are linked to environmental stress suffered by populations living along the Nile Valley.

## References

- CANEVA I. 2001. Second Millennium BC Pastoral Cultures in the Nile Valley. In: Jennerstrasse 8 (eds), *Tides of the Desert – Gezeiten der Wüste*: 231-238. Africa Praehistorica 14Köln.
- CREMASCHI M. & F. NEGRINO. 2003. The Frankincense Road of Sumhuram: paleoenvironmental and prehistorical background. In: A. Avanzini (ed.), *Khor Rori Report I*: 325-363. Edizioni Pluz-Università di Pisa.
- HASSAN F. 1987. Desert environment and origin of agriculture in Egypt. In: T. Hägg (ed.), *Nubian Culture Past and Present. Sixth International Conference for Nubian Studies in Upsala, 11-16 August, 1986*: 17-32. Uppsala.
- MARSHALL K. and ABD EL RAHMAN ADAM. 1953. Excavations of a Mound at Ushara, *Kush I*: 40-46.
- PACHUR H.J. 1991. Tethering stones as paleoenvironmental indicators. *Sahara* 4: 13-32.
- SAID R. 1993. *The River Nile. Geology Hydrology and Utilization*. Pergamon Press, Oxford.
- USAI, D., 2003. The Is.I.A.O. El Salha Project, *Kush XVIII*: 173-182.
- USAI, D. and S. SALVATORI. 2002. The IsIAO el-Salha Archaeological Project, *Sudan & Nubia* 6: 67-72.
- WELSBY D.A. & C.M. DANIELS. 1991. *Soba. Archaeological research at a medieval capital on the Blue Nile*, The British Institute in Eastern Africa, London.
- WENDORF F., R. SCHILD and Associates (eds). 2001. *Holocene Settlement of the Egyptian Sahara*, Kluwer Academic/Plenum Publishers, New York.
- VERMEERSCH P.M., 2002. The Egyptian Nile Valley during the Early Holocene. In: Jennerstrasse 8 (eds), *Tides of the Desert-Gezeiten der Wüste*: 27-40. Africa Praehistorica 14, Köln.