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Italian Archaeological Expedition to the Sudan of the University of Naples "L'Orientale"

2010 Field Season

Introduction

The outline of a cultural sequence for the Kassala region and Gash delta, an area which, before the fieldwork conducted from 1980 to 1995, was virtually unknown from the archaeological point of view, is an outstanding result of the fieldwork conducted by the IAMSK (Italian Archaeological Expedition to the Sudan, Kassala) directed by Rodolfo Fattovich. Of course, several of the cultures which were at that time identified remain to be better investigated and this may also result in minor changes of their absolute chronology. Nevertheless, it is now possible to outline the following processes taking place in the region (Fattovich 1989, 1990, 1991b, 1994; Fattovich, Sadr e Vitagliano 1988-1989):

1. The peopling of the region seems to be characterized by a certain degree of continuity from the 5th millennium BC to the 1st millennium AD, as shown for example by a characteristic tradition in pottery production, the Atbai Ceramic Tradition, whose main feature is the occurrence of *scraped ware*;
2. An agro-pastoral economic strategy may have emerged in the region in the 4th millennium BC and seems to have been characterized by an increasing degree of mobility in the herding component resulting from environmental and social stresses;
3. In the 3rd and 2nd millennium BC the region seems to have been involved in a broad network of contacts, possibly related to the network of economic exchanges through which Egypt (and via Egypt the rest of the Mediterranean and Near East) were supplied with African raw materials such as ivory, ebony, spices, animal skins, gold, etc.;
4. Hierarchical societies may have arisen in the region in the 3rd millennium BC;
5. In the 1st millennium BC, although the region was still crossed by caravans and nomad groups of herders, the groups inhabiting it were marginalized, possibly because of the fledgling states of central Sudan and of Northern Ethiopia and Eritrea.

According to the application approved by the National Corporation for Antiquities and Museums and to the research project funded by the Italian Ministry of Foreign Affairs and by the University of Naples "L'Orientale" as well as by private institutions and donors[1], the goals of the 2010 field season of the Italian Archaeological Expedition to Sudan of the University of Naples "L'Orientale"[2], resuming the work of IAMSK after fifteen years, were as follows:

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[1] Fieldwork was supported by Poliass Marine&General, Broker Assicurativo (Naples), Centro Ricerche sul Deserto Orientale (Varese, Italy), Michela Schiff Giorgini Foundation (Genève, Switzerland).

[2] The field work took place from November 2nd to November 22nd. The team in the field consisted of Andrea Manzo, archaeologist, director of the project and ceramic analyst (University of Naples "L'Orientale"), Alemseged Beldados Aleho, palaeobothanist (University of Naples "L'Orientale" and Addis Ababa University), Alfredo Coppa, physical anthropologist (University of Rome "La Sapienza"), Vincenzo Zoppi, archeologist and GIS analyst (University of Naples "L'Orientale"). The colleague representing NCAM was Habab Idriss Ahmed.

1. to resume the study of the materials kept in the storeroom of the expedition in Kassala in the perspective of the publication of the final report of the first stage of the project (1980-1995);
2. to get a better knowledge of the relationships between Eastern Sudan and Upper Nubia as well as to investigate the possible relationships between the cultures of Eastern Sudan and the Red Sea coast *via* the Eastern Desert.

To these tasks a further and more urgent one was added because of the plans to build new dams on the Atbara and Setit rivers and introduce an agricultural scheme in the region between the Gash and the Atbara (Upper Atbara Agricultural Irrigated Scheme). NCAM launched a systematic survey in order to evaluate the archaeological richness of the affected area, identifying 135 archaelogical sites (Fig. 1). Therefore, the Expedition considered as a priority to contribute to the cultural heritage management of the Kassala region.

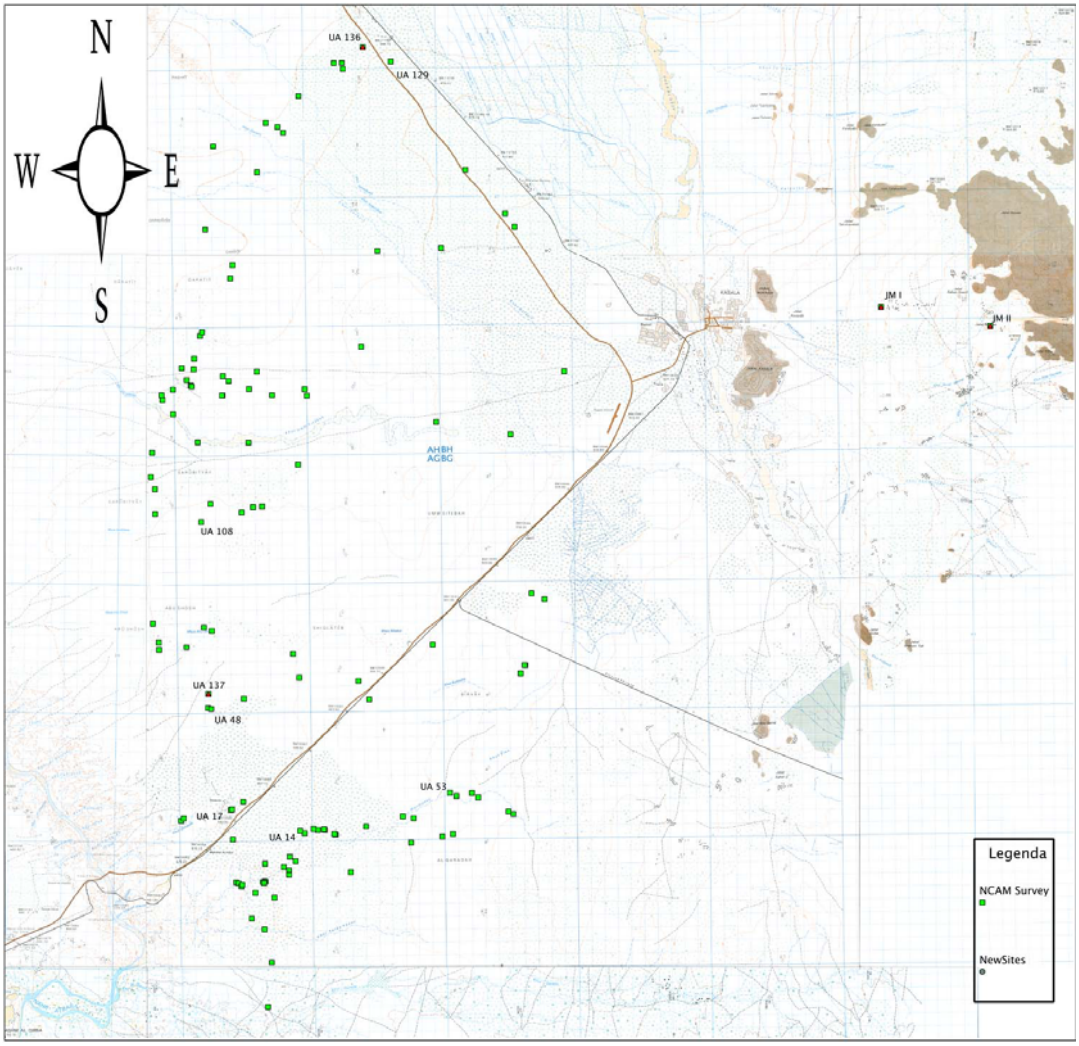

Fig. 1: the sites recorded in the NCAM survey. Alphanumerical codes mark the largest sites.

Rescue archaeology and territorial studies

The expedition is ready to support the NCAM to rescue the menaced heritage. Significantly, the southern sector of the endangered area partially overlaps with the area which was surveyed by IAMSK, Southern Methodist University (Dallas, USA) and University of Khartoum in the 80s, while the northern sector of the endangered area had not been covered by previous surveys. For this reason the access to the materials and data on the location of the sites

kindly provided by NCAM is very important also in the perspective of the research project, as it may complete the model proposed after the investigations of the 80s. The fresh data collected by NCAM may allow us to verify hypotheses on the location of the sites in the different chronological phases as well as the changes of the settlement pattern over time (see Sadr 1988, 1991, 1993).

The collaboration between NCAM and the expedition already effectively started in different ways:

1. A. Manzo examined the materials collected by the colleagues of NCAM and presently kept in the National Museum in Khartoum in order to suggest a cultural affiliation and, when possible, an absolute chronology of each site. Actually, these materials fit into the cultural sequence of the area elaborated by IAMSK in collaboration with Khartoum University and Dallas University (see Appendix 1).
2. V. Zoppi elaborated a general archaeological map of the Kassala region with all the sites recorded by NCAM in 2010 and the ones recorded by the survey conducted in the 80s (Fig. 2). All the information on the sites was systematically stored in a GIS, which will be an operative tool for the cultural heritage management of the area both for NCAM and for the Regional Government also in the perspective of the intervention of other foreign expeditions in the endangered area (see Appendix 2).

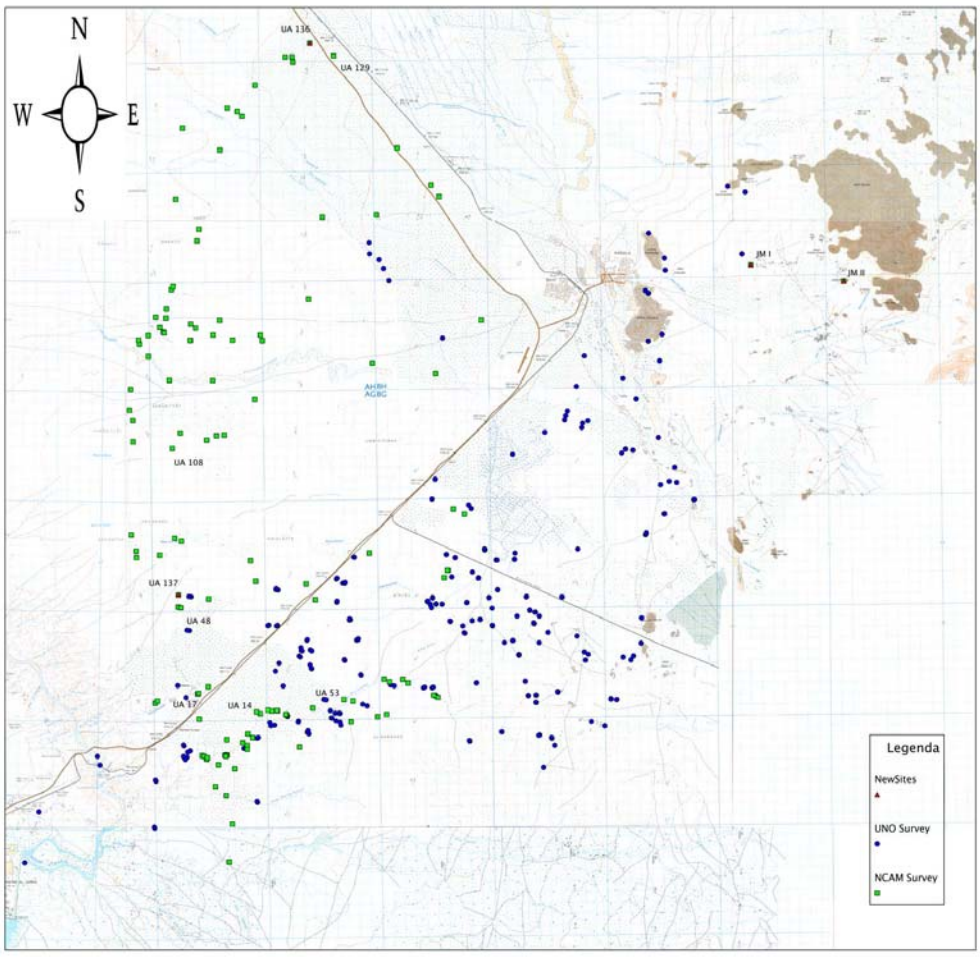

Fig. 2: general archaeological map of the Kassala area. Different symbols mark the sites recorded by the NCAM survey, the ones recorded by the Italian-American-Sudanese survey, and the ones newly recorded by the expedition in the 2010 field season.

In particular, the collection of ceramics dating to the Butana Group is characterized by the occurrence of fragments of bowls or cups with thickened rim, closed shape and decorated with herringbone patterns on the lip (Fig. 3 d, 4), bowls and cups with the body covered by *rocker* impressions made with a tool with a continuous edge (Fig. 3 a) or by herringbone patterns (Fig. 3 b), associated with sherds characterized by *scraped* surfaces, typical of the Atbai Ceramic Tradition (Fig. 3 c).

Fig. 3: Butana Group sherds from site UA 101.


Fig. 4: decorated Butana Group rim sherd from site UA 113.

These features typical of the Butana Group were already described (see e.g. Fattovich 1989, 487), but now fit into a better known macroregional framework, which may result not only in interesting chronological observations but also in considerations related to the cultural history.

The Butana Group was provisionally radiocarbon dated to early/first half of the 3rd millennium BC (Marks and Sadr 1988, 72-73, Table 5.1; Marks and Fattovich 1989, 455, Fig. 2). Also a living floor recorded under the Gash Group layers at Mahal Teglinos (K 1), and, thus, dating from before the mid-3rd millennium BC can be ascribed to this culture (Fattovich, Manzo, Usai 1994, 15). Significantly, the scanty ceramic assemblage from this layer featured *rippled ware*. This chronology for the Butana Group can now be supported by comparisons with the early 3rd millennium BC Upper Nubian Pre-Kerma pottery, characterized by shapes and decorations reminiscent of the Butana Group (Honeggher 2004 a, 85, Figg. 3-4, 2004 b, 39-40).

The comparisons between the Butana Group and the Pre-Kerma ceramics seem to be remarkable also in a cultural perspective: they anticipate the intense relationships with Upper Nubia characterizing all the phases of the Gash Group of Eastern Sudan (see below). Also the route linking the two regions is becoming clearer, as Pre-Kerma materials have been collected in the Fourth Cataract area (see e.g. Tyson-Smith and Herbst 2008, 209, Fig. 5).

Dealing with later phases of the regional cultural sequence of Eastern Sudan, some materials from sites ascribed to the Hagiz Group and perhaps to the Jebel Mokram Group, possibly going back to the mid-2nd millennium BC-early 1st millennium AD, can be also related to the Nile Valley cultures because of the occurrence of *mat impressed* pottery (Fig. 5). If the Upper Nubian classification of *mat impressed* pottery is adopted, these sherds may be compared with materials whose chronology ranges from Kerma to Meroitic times (Phillips 2010, 234, Fig. 4B, 7).

Fig. 5: UA 38, *mat impressed* ware.

The links between Eastern Sudan and late Meroitic or Post-Meroitic Butana (see Manzo 2004) are confirmed by the discovery of several fragments of shoulders of *beer-jars* with impressed geometric decorations filled with mat impressions and burnished external surfaces

(Fig. 6). These materials recall types from the area of Shendi (Mohammed Faroug Abdelrahman, Ahmed Sokary e Murtada Bushara 2009, Pl. LIII-LIV).

Fig. 6: UA 83, fragment of shoulder of *beer-jar* with geometric impressed decoration and burnished surface.

Reconnaissance of sites UA 14, 17, 48, 53, 108, and 129

During our stay in Kassala it was possible to visit some of the major sites recorded by the NCAM survey, in order to collect more dating elements as well as to evaluate the possibility of conducting test excavations on some of these sites. The sites which were visited are UA 14, UA 17, UA 48, UA 53, UA 108, and UA129 (Fig. 1).

UA 14 (Fig. 7) is a site located in a flat area and characterized by a high concentration of archaeological materials on three mounds. The site is partially disturbed by an Islamic cemetery in its northern corner.

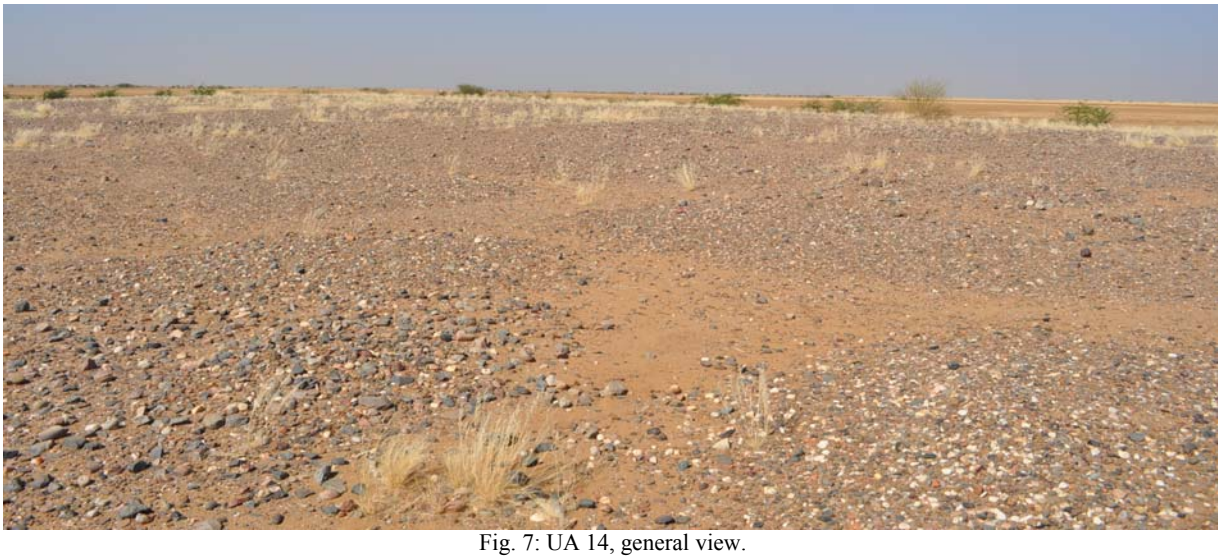

Fig. 7: UA 14, general view.

The materials which are visible on the surface can be ascribed to the Butana Group, Gash Group and (mostly) to the Jebel Mokram Group (Fig. 8). Therefore, a tentative dating ranging from the early 3rd millennium BC to the early 1st millennium BC can be proposed.

Fig. 8: UA 14, pottery; a: rim sherd with herringbone pattern on the lip (Butana Group), b: sherd with crossing incised parallel lines (Jebel Mokram Group), c: sherd with impressions on the surface (Gash Group or Jebel Mokram Group).

An outstanding find recorded on the surface of this site was a rim sherd of a closed bowl with thickened rim and decoration consisting of burnished lines (Fig. 9). This sherd is not ascribable to locally made pottery types, but is imported from the Yemeni Red Sea coast (Tiahama), where such types occur in assemblages dating to the 2nd millennium BC (Buffa 2007, 138-144, 169, Pl. 56, 57, 60, 62, 66, 76).

Fig. 9: UA 14, rim sherd of a bowl imported from Yemeni Red Sea coast.

UA 17 is a site located in a flat area, close to a village and partially covered by an Islamic cemetery (Fig. 10).

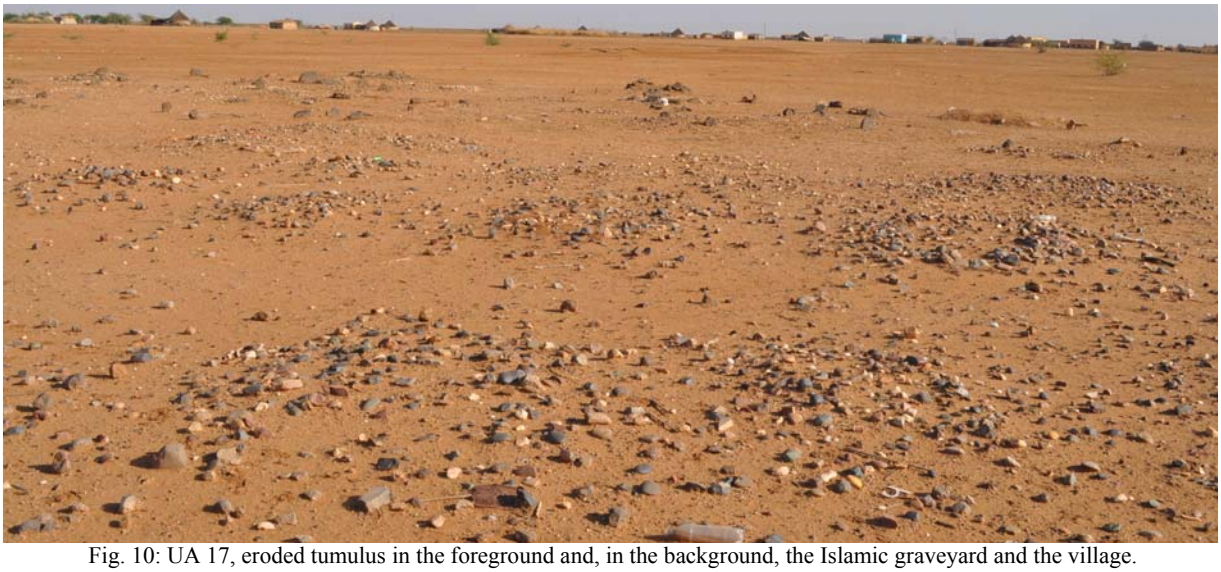

Fig. 10: UA 17, eroded tumulus in the foreground and, in the background, the Islamic graveyard and the village.

It is characterized by ceramic materials going back to the Butana Group and to the Hagiz Group (Fig. 11), and this may suggest the occurrence of two phases of occupation tentatively dated to the early 3rd millennium BC and to the end of the 1st millennium BC-early 1st millennium AD respectively. The badly eroded tumulus on the surface of the site may be ascribed to the latest phase of occupation.

Fig. 11: UA 17, sherds with geometric decorative patterns, fragments of handles and vegetal tempered ware (Hagiz Group).

UA 48 is a site located in a flat area and partially disturbed by Islamic graves (Fig. 12).

Fig. 12: UA 48, general view.

The ceramic collections from this site are characterized by comb rocker impressed ceramics possibly related to the Neolithic horizon in the Nile valley and to the Malawiya Group of Eastern Sudan (Fig. 13).

Fig. 13: UA 48, comb *rocker* impressed sherds and lithic *débitage* on the surface of the site.

Materials ascribable to the Butana Group and to the Gash Group were recorded as well. A tentative dating to the 5th millennium BC and to the 3rd-2nd millennium BC can be proposed for the occupation phases of this site. The site is characterized by possible concentrations of lithic *débitage*, grinding stones, by the occurrence of eroded tombs on the surface (Fig. 14), and by middens of fresh water shells *Pila wernei* (Fig. 15), which were largely exploited in the wet phases of the first half of the Holocene (see e.g. Fuller 1998, 55, Pl. 7).

Fig. 14: UA 48, badly eroded grave.

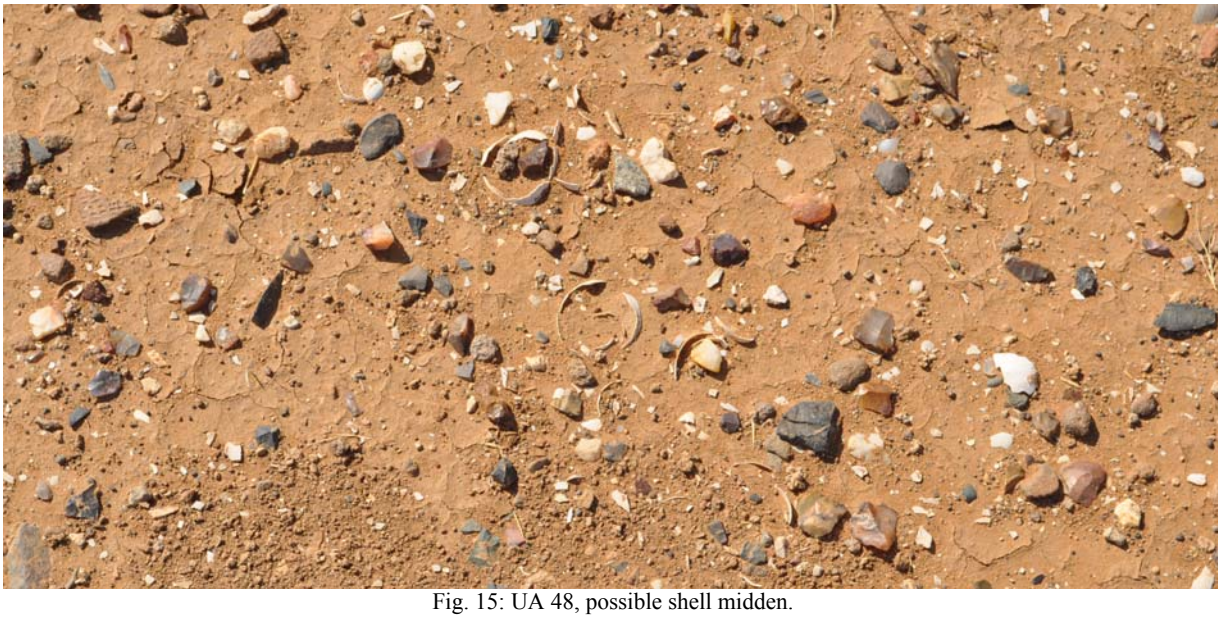

Fig. 15: UA 48, possible shell midden.

UA 53 is a site characterized by the presence of an eroded tumulus or mounds in its central and western sector (Fig. 16), by concentrations of fresh water shells *Limicolaria caillaudi*

in its south-western sector (Fig. 17) and by a possible lithic workshop characterized by concentrations of *débitage* in its southern sector.

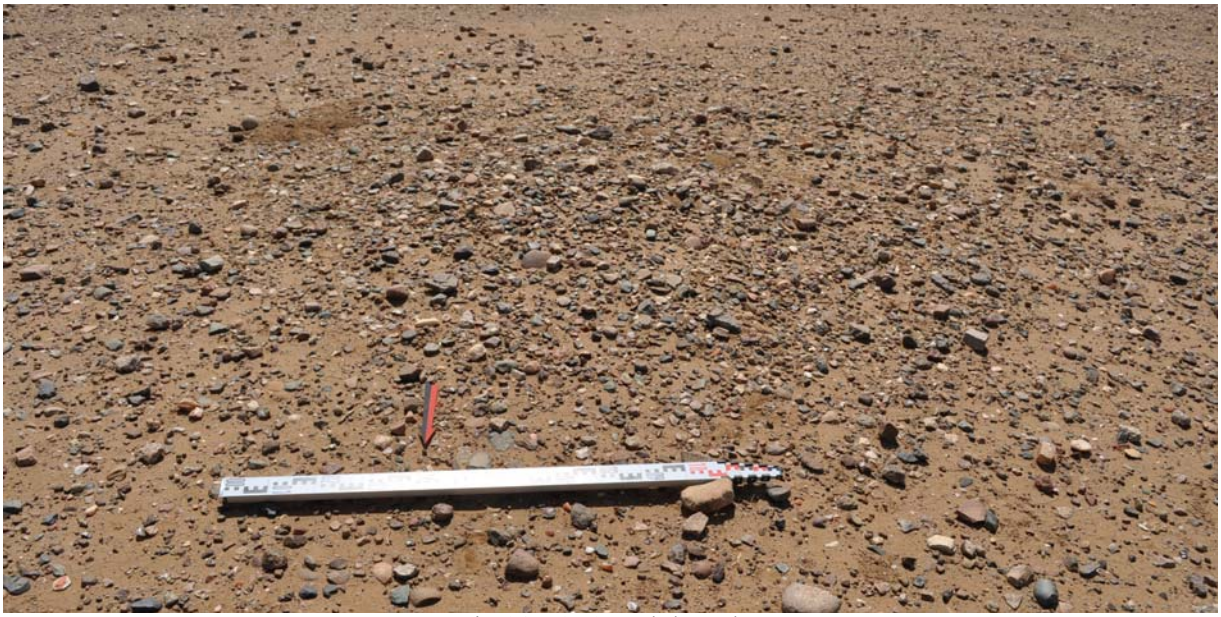

Fig. 16: UA 53, eroded tumulus.

Fig. 17: UA 53, concentration of shells.

The materials on the surface mainly consist of Gash Group and Jebel Mokram Group sherds, dating to the late 3rd-early 1st millennium BC. An earlier (early 3rd millennium) Butana Group phase may be suggested by disc shaped the stone mace heads and a cosmetic palette collected in the southern sector of the site, which may also suggest the occurrence of graves there. These graves may be related to the small tumulus occurring in that sector of the site (Fig. 18). The fresh water shells occurring along the southern edge of the site may go back to the wet

period of the Holocene, as was suggested for similar concentrations in other regions of Sudan (Fuller 1998, 54, Pl. 6). Since on the surface of the site there are no artefacts earlier than the 3rd millennium BC, it is also possible that these concentrations of shells are natural, perhaps related to an ancient bed of the Gash river.

Fig. 18: UA 53, small tumulus in the southern sector of the site.

UA 108 is a site located close to a wady which may represent an ancient bed of the Gash river (Fig. 19).

Fig. 19: UA 108, general view, the bushes in the background possibly mark an ancient bed of the Gash river.

The site is characterized by comb rocker impressed and dotted wavy line ceramics possibly related to the late Mesolithic in the valley and to the Malawiya Group of Eastern Sudan. Materials ascribable to the Gash Group occur as well. A tentative dating to the 6th-5th millennium BC can be proposed for the earlier occupation phase, while the later one may go back to the 3rd-2nd millennium BC. The site is also characterized by possible concentrations of lithic *débitage* (Fig. 20), grinding stones, and by the occurrence on the surface of remains of possible eroded

graves and shell middens. The middens mainly consist of fresh water shells *Pila wernei* (Fig. 21), which were largely exploited in Sudan in the first part of the Holocene (Fuller 1998, 55, Pl. 7).

Fig. 20: UA 108, concentration of *débitage* on the surface.

Fig. 21: UA 108, concentration of shells.

UA 129 is a site located close to an agricultural area along the Kassala-Port Sudan road and has thus been disturbed by modern human activity. The site is characterized by a

concentration of clay plaster (Fig. 22) and red bricks in the eastern sector (Fig. 23) and by a possible group of eroded tumulus and tombs in the western part (Fig. 24).

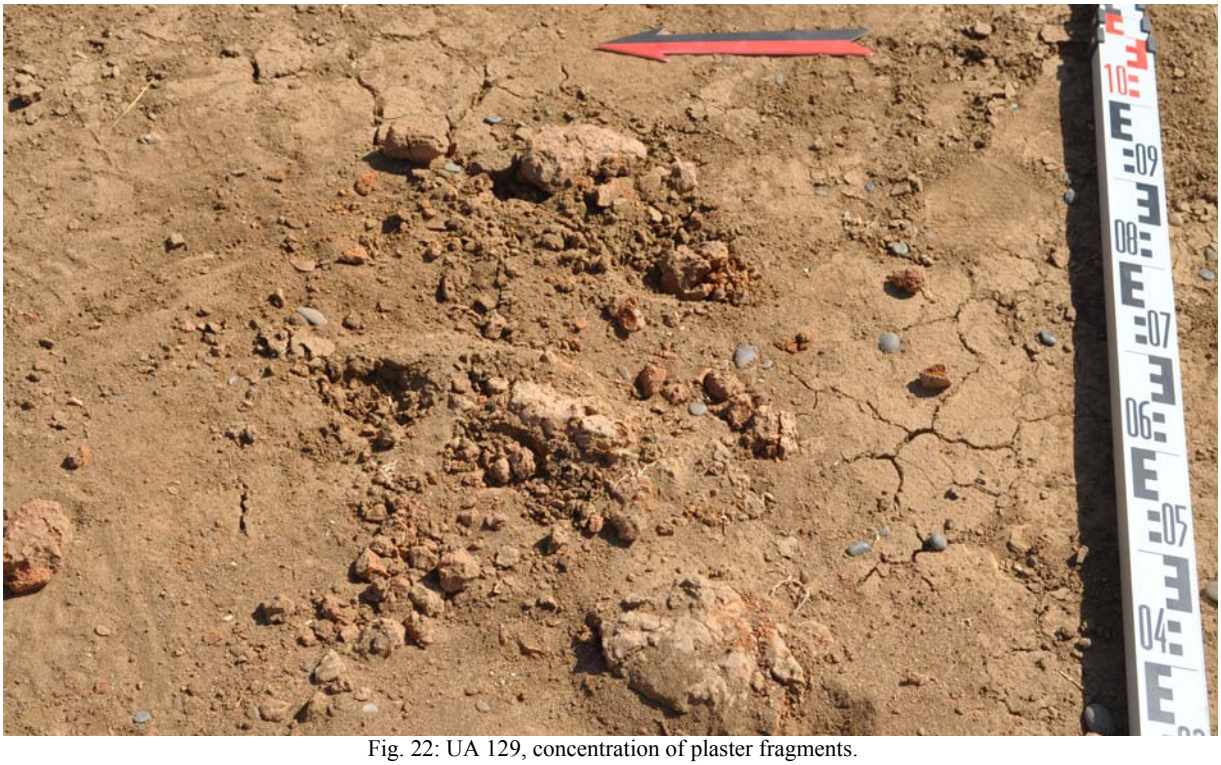

Fig. 22: UA 129, concentration of plaster fragments.

Fig. 23: UA 129, fragment of red brick.

Fig. 24: UA 129, eroded tumulus in the western sector of the site.

The ceramic materials can be ascribed to the Hagiz Group, and the site can be tentatively dated to the end of the 1st millennium BC-early 1st millennium AD.

Moreover, two new sites were discovered while the team was visiting the sites of the NCAM reconnaissance and were named UA 136 and UA 137.

UA 136 (194557N 1731638E) possibly represents an extension of UA 129 west of the Kassala-Port Sudan paved road. It is located in agricultural and grazing areas and is characterized by the occurrence of at least three tumulus (Fig. 25).

Fig. 25: UA 136, a tumulus.

The ceramic materials can be ascribed to the Hagiz Group (Fig. 26) and, in some cases, to the Gergaf Group, and a tentative dating from the end of the 1st millennium BC onwards can be proposed for the site.

Fig. 26: UA 136, ceramic materials of the Hagiz Group with incised decorations and vegetal tempered fabrics.

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UA 137 (1696073N 185920E) consists of a single site with clearly distinct areas or, perhaps, of a cluster of sites located close to a wady, possibly representing an ancient bed of the Gash. On the surface, stone mace-heads, stone rings, flakes and fragmentary crescent backed bladelets of quartz and agathe, chert rounded scrapers, grinding stones, some *wiped* sherds and sherds produced by coiling technique were recorded. It may be tentatively ascribed to the Butana Group (early 3rd millennium BC).

Among the endangered sites which were visited, given their importance for knowledge of the history of the region and their suitability for the research interest of the Expedition and subject to the availability of grants, the sites which were selected for further investigations and possibly digging of test pits in the next field season are UA 14, UA 53, UA 129 and UA 136. The exploration of these sites may take place in the following two seasons 2011 (UA 14 and UA 53) and 2012 (UA 129 and UA 136), also considering their location and the fact that most likely UA 14 and UA 53 will be the first sites to be endangered by the implementation of the agricultural scheme.

Survey East of the Jebel Mokram and visit to Jebel Maman

At the request of the Regional Ministry of Culture, Media and Tourism, the expedition conducted a short survey in the Kassala region East of the Jebel Mokram and close to the Eritrean border. The two sites recorded there were provisionally named JM I and JM II.

JM I (1710955N 2333342E) is located in a flat area and crossed by the track leading to site JM II and the Eritrean border. It consists of a cluster of eroded tumuli (Fig. 27) associated with Hagiz Group pottery. It can be tentatively dated to the end of the 1st millennium BC-early 1st millennium AD.

Fig. 27: JM I, eroded tumulus, in the background, from left to right the Jebel Taka and the Jebel Mokram.

JM II (1709379N 241563E) is located close to a jebel and to the tomb of an Islamic Holy Man. The site itself is still used as an Islamic cemetery. It consists of a large concentration of tumuli delimited at the base by a ring of large stones but, for the rest, completely eroded (Fig. 28). They are associated with Hagiz Group and *mat impressed* pottery and can be tentatively dated to the end of the 1st mllennium BC-mid-1st millennium AD.

Fig. 28: JM II, ring of stones, perhaps originally related to a completely eroded tumulus.

Finally, a visit was also made to the well-known early Islamic cemetery of Jebel Maman (Fig. 29), a crucial site to understand the spread of Islam in Eastern Sudan (Fattovich 2009-2010), in order to assess the state of preservation of the site, which looks quite undisturbed.

Fig. 29: Jebel Maman, showing the occurrence of *qubba* and, in the background, close to the *jebel*, tumuli.

A more precise evaluation of the state of preservation of the site will be conducted by comparing the photos taken during our visit with the ones in the archive of the Expedition in Naples which were taken in the mid-80s. During our visit to Jebel Maman with the local commissioner it was also remarked that a general map of the site is urgently needed and may represent an important tool for its management.

Preliminary survey of the site of Jebel Qoqay/ Romeladid in Area 2

As proposed in the application approved by NCAM, a preliminary survey of the site of Jebel Qoqay/Jebel Romeladid, (1915448N 757928E) North of the Gash delta was conducted. The site was first identified on the satellite imagery, and was selected together with the surrounding region (Area 2 in the application submitted to NCAM) because of its location, which suggested that its exploration could contribute to gaining a better knowledge of the relationships between Eastern Sudan and Upper Nubia. Moreover, as Jebel Qoqay/Jebel Romeladid is also located on a system of *wadyan* draining to the Red Sea coast, it was thought that it could contribute to investigating the possible relationships between the cultures of Eastern Sudan on one side and the Red Sea coast *via* the Eastern Desert on the other.

In the satellite imagery it was already possible to recognize that the site consisted of more than 100 tumuli or mounds (Fig. 30).

Fig. 30: Jebel Qoqay/Romeladid in the satellite image. The concentration of tumuli is on the southern side of the jebel.

The preliminary survey allowed us to confirm this and to identify the following types of structures:

1. Simple tumuli made of large angular rocks of the *jebel*, 2-5 m in diameter. In few cases these tumuli are surrounded by a larger circle of rocks (Fig. 29).

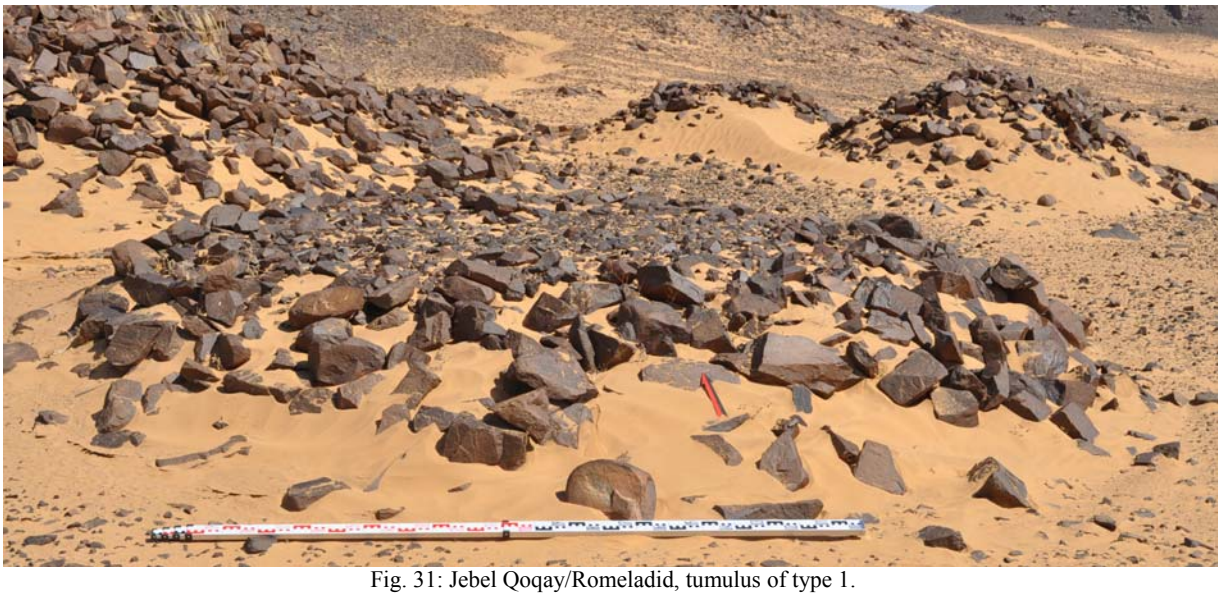

Fig. 31: Jebel Qoqay/Romeladid, tumulus of type 1.

2. Step tumulus consisting of a 5m in diameter flat top tumulus with a smaller tumulus on top, and elongated rectangular areas up to 20 m long and up to 1.5 wide at the base of the larger tumulus (Fig. 32).

Fig. 32: Jebel Qoqay/Romeladid, tumulus of type 2.

3. Tumulus 4-5 m in diameter consisting of a circle of larger rocks and smaller pebbles and stones filling it. In a few cases these tumuli were surrounded by a larger circle of stones (Fig. 33). In a single case the occurrence of a further stone circle ca. 2 m in diameter on the eastern side of the larger stone circle delimiting the tumulus was recorded as well.

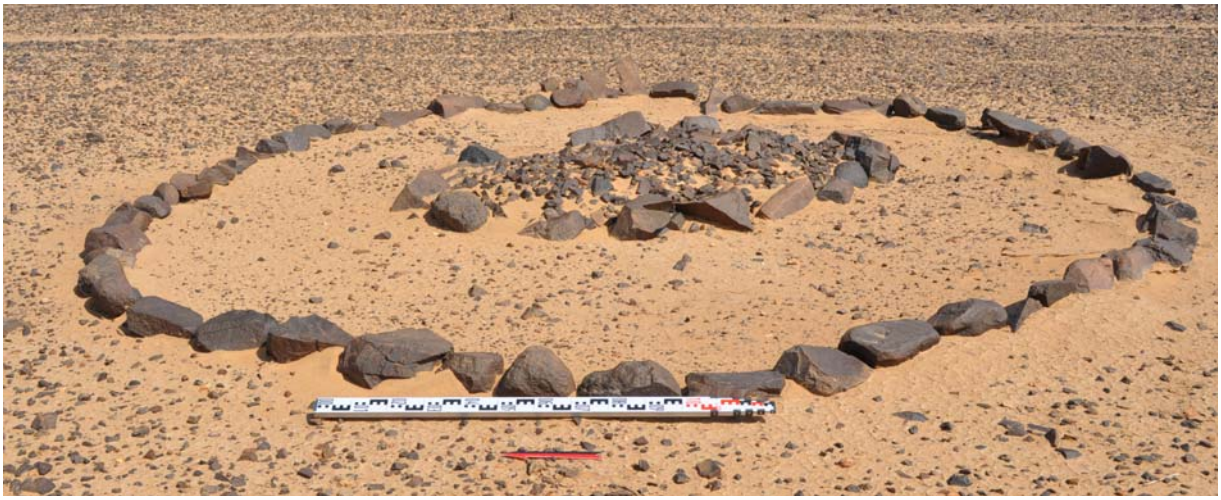

Fig. 33: Jebel Qoqay/Romeladid, tumulus of type 3 with a ring of stones around it.

4. Tumulus ca. 5-6 m in diameter delimited by a rounded cylindrical stone wall which was filled with smaller pebbles (Fig. 34).

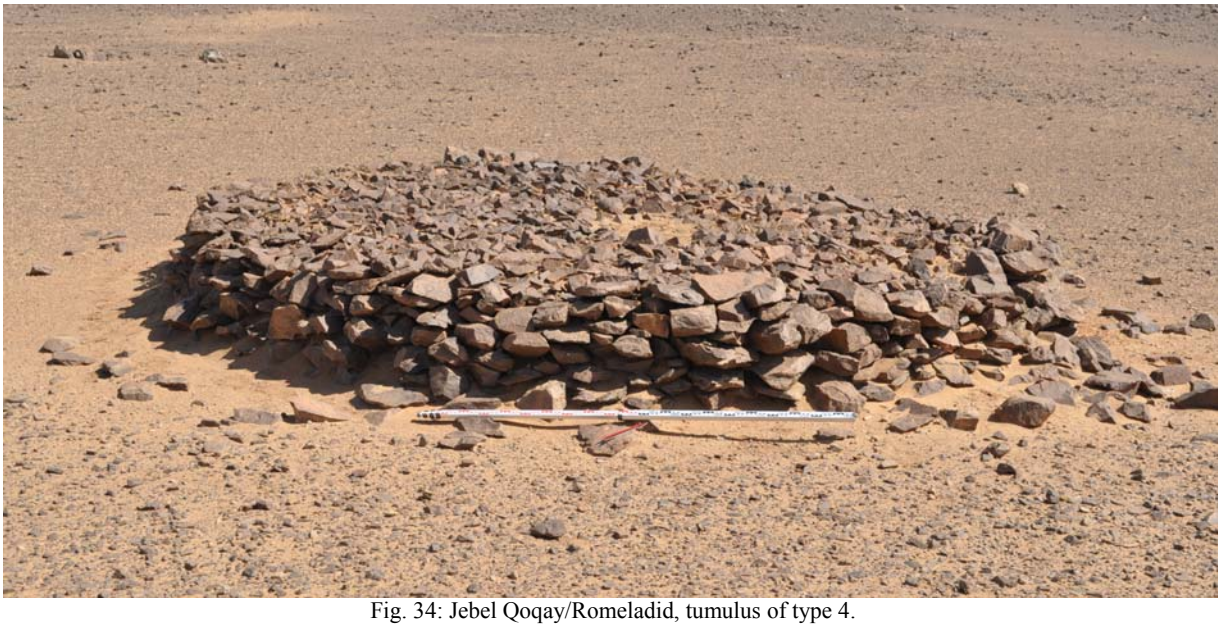

Fig. 34: Jebel Qoqay/Romeladid, tumulus of type 4.

5. Rounded or oval stone structures made of big rocks with main axis of ca. 6-8 m and containing other smaller rounded features delimited by rocks (Fig. 35).

Fig. 35: Jebel Qoqay/Romeladid, structure of type 5.

6. Elongated tumulus ca. 4 m in length with East-West main axis and stelae erected at the eastern and western sides (Fig. 36).

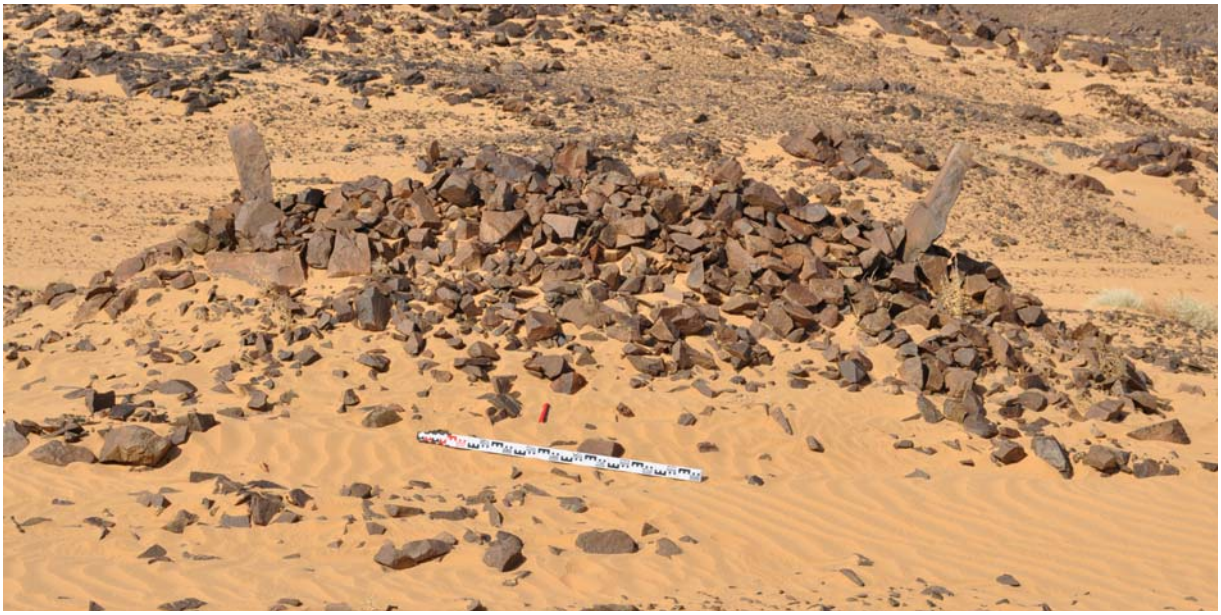

Fig. 36: Jebel Qoqay/Romeladid, structure of type 6.

7. Elongated tumulus on top of two boulders divided by a crack, ca. 3-4 m on the major axis (Fig. 37).

Fig. 37: Jebel Qoqay/Romeladid, tumulus of type 7.

8. Square structure built with flat tabular stones, ca 2x2 m (Fig. 38).

Fig. 38: Jebel Qoqay/Romeladid, structure of type 8.

Some of these structures, like the elongated tumulus with East-West axis and stelae on the eastern and western side (type 6) are likely to date to Islamic times; the square structure (type 8) may also well be an Islamic grave, perhaps related to the archaic *qubbas* of Jebel Maman. Nevertheless, the other structures are likely to be earlier and their variety may suggest a long use of the site and/or its frequentation by groups with distinctive funerary habits. The comparison with structures recorded in nearby sectors of the Eastern Desert as well as in the Nile valley is in progress and may contribute to clarify the chronology of the site.

In particular, in the Wadi Allaqi region, the conical structures (type 1) were associated with graves containing disarticulated bodies and were tentatively dated to Neolithic times (Sadr, Castiglioni and Castiglioni 1995, 206-207, Pl. I, a). Nevertheless, these structures are very simple, therefore it is possible that this type was used for a long period (see e.g. Lassányi 2010 a, 264-265, Fig. 13).

The cylindrical structures (type 4) can be compared with the ones recorded at Samadi and Mendilo, in the region of the Wadi Allaqi and all over the Eastern Desert and dating from the 3rd to the 7th-8th cent. AD (Anwar A. Magid, Pierce and Krzywinski 1995, 171-172, 176, Fig. 3, 8, Pl. VII-VIII, X, Lassányi 2010 a, 265-267, Fig. 15-18, Sadr, Castiglioni and Castiglioni 1995, 212-221, Fig. 13, 17-18, 21, Pl. II a).

The mounds built on natural cracks (type 7) recall the *Crevice burials* recorded in the Eastern Desert of Egypt, where they are associated with materials dating to the 4th-6th cent. AD (Lassányi 2010 a, 264, Fig. 11), and in the Fourth Cataract region, where they are dated from the mid-2nd millennium to the end of the 1st millennium BC (Budka 2007, Paner and Borcowski 2005, 96-98 Fig. 11-14, 2007, 6-7, Pl. 2 c-d, Welsby 2005, 5-6, Pl. 5). Nevertheless, in this case too the type is very simple and opportunistic, taking advantage of the natural features of the terrain, so it is likely that it was used over a long period.

The pottery on the surface of the site is scarce and its classification is still in progress. Nevertheless, at this preliminary stage it may be suggested that it confirms the different dates of the structures and that the site may have been used as a cemetery for a long period. Among the diagnostic sherds, the occurrence of a fragment of *scraped ware* should be remarked as the scraping on the external surface of the vessels is a marker of the ceramic traditions of Eastern Sudan and specifically of the Kassala region and it is widespread mainly in the 3rd-1st millennia BC. Two sherds are characterized by red external slip and impressed and incised decorations on the external surface (Fig. 39) and may fit into the horizon of the *Eastern Desert Ware*, widely recorded in sites dating to the 3rd-5th centuries AD of the Egyptian and Sudanese Eastern Desert and also in the Kassala area, where it represents an important component of the pottery of the Khatmiya Group (Manzo 2004, 77-80). In particular, the rim sherd with a grip on the lip (Fig. 39, b) may be ascribed to a well-known type recorded in the Lower Nubian sites of Wadi Qitna and Kalabsha South (Strouhal 1982, Fig. 18), while the sherd with comb impressed decoration and incised lines (Fig. 39, c) is similar to *Eastern Desert Ware* sherds from Bir Minayh, in the Egyptian Eastern Desert (Lassányi 2010 b, 285-286, n. 80, 88).

Fig. 39: Jebel Qoqay/Romeladid, sherds of *Eastern Desert Ware*.

Finally, the angular shoulder of a wheel made jar with comb horizontal incised decoration and cord impressions on the external surface may be an Aswan production of early Islamic times. Nevertheless, its possible use here as a grave good may suggest that the associated tomb was built when the Islamization of the people living in the Eastern Desert was not yet fully accomplished.

As the southern side of the Jebel Qoqay/Jebel Romeladid is completely surrounded by sand dunes, we were compelled to reach the site from the eastern side, *via* the paved road Kassala-Port Sudan. On our way to the site, other sites characterized by concentrations of tumuli were identified and recorded for the archives of NCAM. The sites were named after the closest jebel or the closest town or village. They are:

Jebel Temeyaham 1 (1929981N 777426E), cluster of more than 10 pebble tumuli, one surrounded by nine smaller tumuli (Fig. 40).

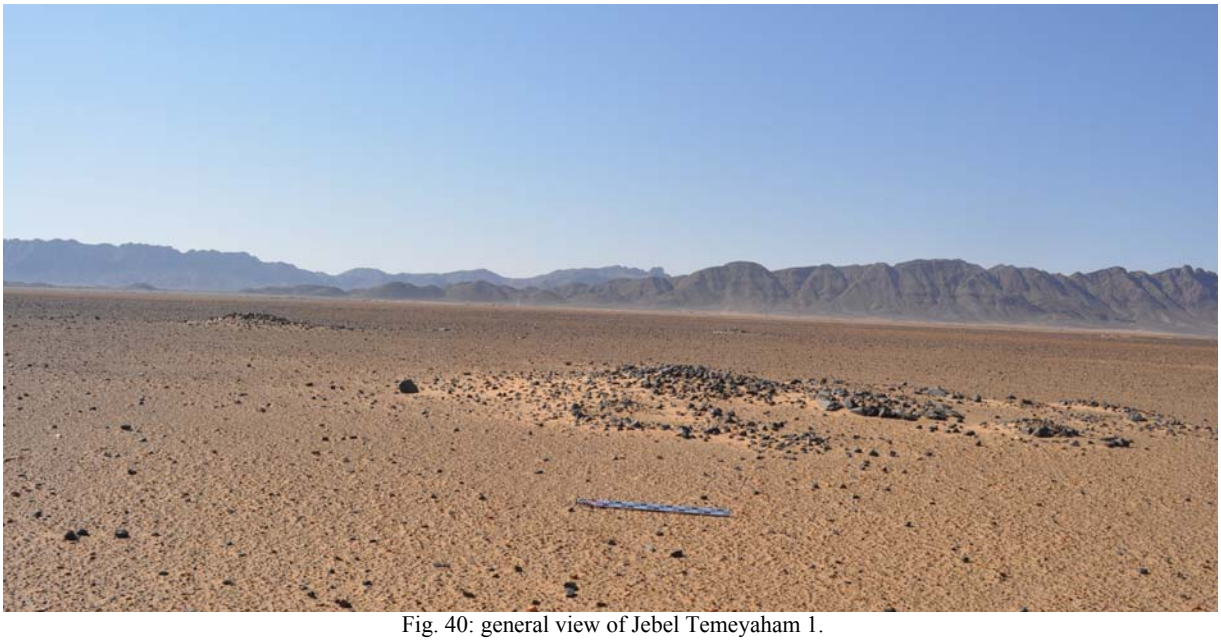

Fig. 40: general view of Jebel Temeyaham 1.

Jebel Mesham 1 (1923291N 772673E), eight tumuli made of rocks and pebbles on the top and at the foot of a small hill (Fig. 41).

Fig. 41: Jebel Mesham 1, tumulus on top of a hill.

Derudeb 1 (1938373N 818339E), a ring of stones with a smaller stone circle and erected stelae on its eastern side (Fig. 42).

Fig. 42: Derudeb 1, ring of stones with a smaller stone circle and a stelae on the eastern side.

Derudeb 2 (1695210N 818938E), cluster of at least fifteen tumuli of pebbles (Fig. 43).

Fig. 43: Derudeb 2, general view.

Derudeb 3 (1937030N 814497E), several clusters of tumuli made of pebbles West of the Kassala-Port Sudan paved road (Fig. 44).

Fig. 44: Derudeb 3, general view

Derudeb 4 (1938640N 816527E), several clusters of tumuli made of pebbles few kms West of the Kassala-Port Sudan paved road (Fig. 45).

Fig. 45: Derudeb 4, general view.

Test pit K1 VI 2010 at Mahal Teglinos (K 1)

An assessment on the state of preservation was also made for Mahal Teglinos (K1), the main site of the region, where extensive excavations were conducted from 1980 to 1995 under the direction of Rodolfo Fattovich (Fig. 46).

Fig. 46: Mahal Teglinos (K 1), view from western sector of the site.

Mahal Teglinos does not seem to have been affected by heavy disturbances since 1995. Only the ongoing quarry activities close to the site may seriously endanger it. Therefore, the Expedition decided to contribute to the conservation of the site with a fence which will delimit the site and prevent unauthorized access. Moreovoer, as erosion starts to bring to light previously hidden structures all over the surface of the site, some rescue excavations may become necessary in the future. A small test trench was excavated in the western sector of the site to avoid the complete destruction of a plastered storage pit by erosion.

In the western sector a storage pit plastered with clay was almost completely exposed, and it was decided to conduct a surface stripping and a limited 2x2 m test pit around it in order to record the structure as well as to collect the associated materials which may enable it to be dated. The test pit was named K 1 VI 2010 (Fig. 47).

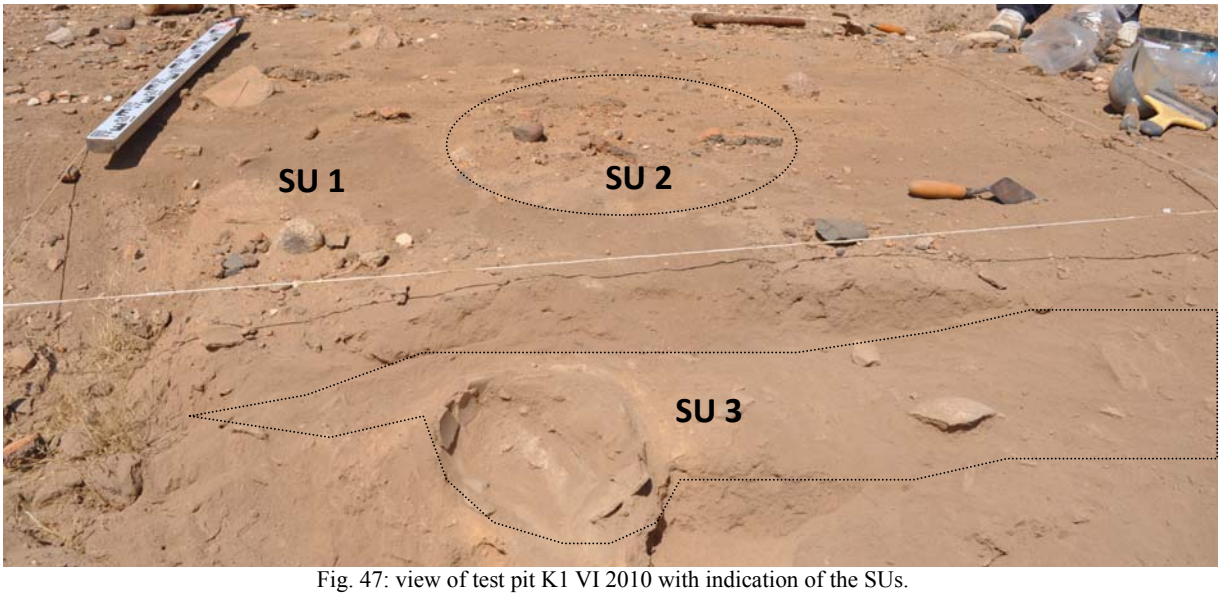

Fig. 47: view of test pit K1 VI 2010 with indication of the SUs.

The topsoil was named Stratigraphic Unit (SU) 1, and consisted of soft dusty gray soil ca. 15-20 cm thick containing artifacs and ecofacts. The exposed storage pit was named SU 2, and proved to have been cut inside SU 1 from the original upper interface of SU 1, which is now completely eroded. This may also explain the high concentration of materials which were collected on the surface of K 1 VI, possibly representing the materials originally on the upper interface of SU 1 and embedded in its upper eroded part. An earlier and better preserved living floor was discovered under SU 1 and was labeled SU 3. It had been unaffected by the cutting of pit SU 2. On top of the living floor SU 3 large sherds and an almost complete broken vessel were discovered. Given the good preservation of living floor SU 3, it may deserve further and more extensive investigations.

The archaeological materials collected in these SUs are all ascribed to the Jebel Mokram Group, and are mainly representative of the Nubian component of this culture, characterized by vessels with the upper part of the body covered by crossing oblique incised lines (Fig. 48 a), vertical or oblique incised lines (Fig. 48 b) or with the body completely covered by horizontal grooves (Fig. 49).

Fig. 48: K1 VI 2010, pottery.

Fig. 49: K1 VI 2010, pottery.

Comparatively few *scraped* sherds which can be ascribed to the local traditions were recorded in these assemblages. Based on the comparisons with Nubian materials and on the radiocarbon dates available for the Jebel Mokram Group (Marks and Sadr 1988, Table 5.1; Fattovich 1989, 496; Marks and Fattovich 1989, 454-455, Fig. 2), an absolute dating around the mid 2nd millennium BC can be suggested for these assemblages.

The materials collected on the surface of the sites ascribable to the different phases of the Gash Group and of the Jebel Mokram Group as well as the ones from the assemblages investigated in the test pit K1 VI 2010 seem to confirm that, as already suggested in the previous phases of the archaeological exploration of the region (Fattovich 1991a; Manzo 1997; Sadr 1987), there were intense and durable relationships with Nubia. Significantly, the reconstruction of these relationships has greatly benefited from recent researches in the Fourth Cataract area, where the assemblages dating to the 3rd and 2nd millennium BC are characterized by the occurrence of the same Nubian elements which are very common in the Eastern Sudan, such as the cups and bowls with the body completely covered by horizontal parallel grooves (Emberling

and Williams 2010, 29-31, Fig. 26, d; Kołosowska, Mahmoud el-Tayeb e Paner 2003, Pl. 7), the bands of impressed triangular notches (Kołosowska, Mahmoud el-Tayeb e Paner 2003, Pl. 6), the bands of oblique or crossing parallel incisions (Emberling and Williams 2010, 29-31, Fig. 25, a-f, h-i, 26, a-b, f-j), the geometric sectors filled by incised parallel lines covering the whole surface of the vessel, (Emberling and Williams 2010, 31, Fig. 26, c, e), black mouthed vessels or vessels with incised oblique decorations with thickened rims separated from the body by an horizontal deep groove parallel to the rim (Emberling and Williams 2010, 33-34, Fig. 31-32).

Laboratory Analysis (*A. Coppa and Alemseged Beldados Aleho*)

Despite the fact that the materials kept in the storeroom of the IAMSK in the Regional Ministry of Culture, Media and Tourism were partially damaged and dispersed by the 2003 flood of the Gash river, a program of analysis of the surviving materials was conducted in the perspective of the publication of the final report of the investigations conducted by the Expedition from 1980 to 1995.

Analysis was performed by Alfredo Coppa on some ostheological remains kept in the storeroom of the Expedition in Kassala. Three fragmentary Gash Group human skeletons brought to light in the main stelae field in the central part of the site in 1994 were examined. These skeletons represent the first phases of use of the cemetery in Middle Gash Group times. Therefore, they can be tentatively dated to ca. 2000 BC (Fattovich, Manzo, and Usai 1994). According to stratigraphic evidence, these three tombs were discovered one on top of the other and represent three different phases of use of the same spot. According to the analysis conducted by the physical anthropologist, the three skeletons resulted to be two males and a female. Some remains of a further juvenile individual were also found in the collection, and they are probably due to the cutting of an earlier grave when the pits for these burials were excavated. Some samples suitable to be exported and submitted for isotopic analysis were selected and they may give important information on the diet of the Gash Group people.

Palaeoethnobotanical analysis of pot sherds and fragments of plaster with plant impressions going back to Jebel Mokram Group times from the site of Mahal Teglinos (K 1), test pit K 1 VI 2010, were conducted by Alemseged Beldados Aleho. Based on a preliminary analysis of the impressions, it is possible to suggest that they belong to Sorghum sp., Barley sp., Wheat sp., small seeded millets and Lolium sp, a weed of cultivated cereal (Wheat and Barley). Therefore, these plant impressions may give important information on the diet of the Jebel Mokram Group people as well as on the environment of the Kassala region in the mid-2nd millennium-early 1st millennium BC. Moreover, some plant impressions belonging to the same species were also identified on fragments of plaster and sherds recorded on some of the sites of the NCAM survey (see above), which may be dated to Gash Group (ca. 2500-1500 BC) and to Hagiz Group (ca. mid-1st millennium BC-mid-1st millennium AD) times.

Interestingly, an ethnoarchaeological visit of pottery making groups was also conducted in the outskirt of the city of Kassala. There, it was possible to gather important information specifically on the use of animal dung and sorghum as temper in making pottery. A visit of cultivated sorghum fields was also undertaken and a reference collection of the cultivated and wild species presently occurring in the region was started. Some samples of baked clay with vegetal and seed impressions suitable for further analysis to be conducted by means of electronic microscope in the Museo d'Arte Orientale (Rome) were selected to be exported for study.

Conclusions

Although the activities of the Expedition were largely devoted to the survey, to the selection of sites suitable for further investigations in the next seasons, and to the collaboration

with NCAM for the management of the endangered cultural heritage of the region of Kassala, some preliminary remarks can nonetheless be proposed concerning the research project.

Concerning the problem of the relationship between Eastern Sudan and Upper Nubia, the study of the collections of materials made by NCAM during the survey of June 2010 was very fruitful. In particular, the comparisons between the ceramic materials of the Butana Group and the ones of the Pre-Kerma are very remarkable not only from the chronological but also from the cultural point of view. They anticipate the intense and continuing relationships with Upper Nubia of the Gash Group and provide an archaeological support for the linguistic theory suggesting that the two regions were related since very ancient times, as shown by the model of distribution of the modern and ancient languages of the East Sudanic branch of the Nilo-Saharian (Rilly 2008, 6-10).

Also the materials collected on the sites of the Gash Group and of the Jebel Mokram Group as well as the ones from the assemblages of the test pit K1 VI 2010 confirm that intense and durable relationships with Nubia continued also in the second half of the 3rd-2nd millennium BC.

The investigations planned for the next years will be aimed at understanding how these Nubian elements spread and were adopted in the ceramic tradition of Eastern Sudan. In this respect, it is remarkable that, as stressed above, recent investigations in the region of the Fourth Cataract already showed that the 3rd-2nd millennium BC assemblages in that region are characterized by the same Nubian traits which were also adopted in Eastern Sudan.

Also in terms of the study of the interregional interactions, it is worth recalling the discovery of a rim sherd of a bowl from the Yemeni Red Sea coast dating to the 2nd millennium BC in the surface assemblage of site UA 14.

The preliminary survey of Jebel Qoqay/Jebel Romeladid confirmed that the survey of the region North of the Gash delta may give an important contribution not only to the study of the interaction between Eastern Sudan and Upper Nubia but also of the contacts with the Eastern Desert. Several of the structures recorded at Jebel Qoqay/Jebel Romeladid recall structures of the region of the Fourth Cataract, while other structures as well as some ceramic materials from the same site may recall the Eastern Desert. Other sites already identified South of Jebel Qoqay/Jebel Romeladid will be surveyed in the next seasons, while the continuation of the investigation of Jebel Qoqay/Jebel Romeladid may clarify the occurrence in the Khatmiya Group of Eastern Sudan of materials reminiscent of the *Eastern Desert Ware*.

All these preliminary remarks suggest that the sites which were selected for further investigations will effectively contribute to fulfil the goals of the research program.

Moreover, the Expedition confirmed the commitment to collaborating in the management of the cultural heritage of the region not only by providing archaeological maps, by helping with the classification of the materials collected in the NCAM survey, and by planning the excavation of some endangered sites. During our stay in Kassala the Expedition expressed to the Regional Minister of Culture, Media and Tourism and to the General Director of the Department for Tourism the will to the greatest possible support to the efforts of the Regional Government devoted to the implementation of a museum in Kassala. More specifically, as soon as the building of the Museum is ready, and in agreement with NCAM, the expedition will suggest some objects discovered in the previous years deserving to be exhibited and will assist in the preparation of captions and posters for the display.

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Appendix 1

(*A. Manzo*)

Site Name	Dating	Cultural Affiliation
0183134N 1724058E	2nd -1st millennium BC	Jebel Mokram Group
0186469N 1722002E	1st millennium BC	Atypical
0189824N 1705091E		
UA 1	1st millennium BC- 1st millennium AD	Hagiz Group
UA 100	2nd-1st millennia BC	Jebel Mokram Group
UA 101	4th millennium BC	Butana Group
UA 103		
UA 104		Atbai Ceramic Tradition
UA 105		
UA 106		
UA 107		
UA 108	6th millennium BC, 3rd-2nd millennia BC	Late Mesolithic, Gash Group
UA 109	1st millennium BC-1st millennium AD	Hagiz Group
UA 11	1st millennium BC-1st millennium AD ?	Hagiz Group ?
UA 110	3rd-2nd millennia BC	Gash Group
UA 111	2nd millennia BC-1st millennium AD	Jebel MokramGroup, Hagiz Group
UA 112	4th-early 3rd millennium BC	Butana Group
UA 113	4th millennium BC-1st millennium AD	Butana Group, Gash Group, Jebel Mokram Group and Hagiz Group
UA 114		Atbai ceramic tradition
UA 115	3rd-2nd millennia BC	Gash Group
UA 116		
UA 118	500 BC-AD 500	Hagiz Group
UA 121		
UA 122	1st millennium BC-1st millennium AD	Hagiz Group
UA 123	1st millennium BC-1st millennium AD ?	Hagiz Group ?
UA 125	1st millennium BC-2nd millennium AD	Hagiz Group ?, Gergaf Group
UA 126	1st millennium BC- 1st millennium AD	Hagiz Group ?
UA 127		
UA 129	1st millennium BC-1st millennium AD	Hagiz Group
UA 13	1st millennium BC-1st millennium AD ?	Hagiz Group ?
UA 132	1st millennium BC- 1st millennium AD	Hagiz Group ?
UA 133	3rd-1st millennia BC	Gash Group, Jebel Mokram Group
UA 134	1st millennium BC ?	Atypical

UA 138	4th-2nd millennia BC	Butana Group, Gash Group
UA 14	4th-2nd millennia BC	Butana Group, Gash Group, Jebel Mokram Group
UA 16	500 BC-AD 500	Hagiz Group
UA 17	4th millennium BC, 1st millennium BC-1st millennium AD	Butana Group, Hagiz Group
UA 117	4th-2nd millennium BC	Butana Group, Gash Group
UA 18	5th millennium BC	Amm Adam Group
UA 19	1st millennium BC-2nd millennium AD	Hagiz Group, Gergaf Group
UA 2 a		
UA 2	500 BC-AD 500	Hagiz Group
UA 20	6th millennium BC	Late Mesolithic, Atbai Ceramic Tradition
UA 21	1st millennium AD	Hagiz Group
UA 22	1st millennium BC-1st millennium AD	Hagiz Group ?
UA 23	1st millennium BC- 1st millennium AD	Hagiz Group ?
UA 24	2nd-1st millennia BC	Jebel Mokram Group
UA 25	6th millennium BC, 2nd millennium BC	Late Mesolithic, Gash Group
UA 26	2nd-1st millennia BC	Jebel Mokram Group- Hagiz Group
UA 27	1st millennium BC-1st millennium AD	Hagiz Group
UA 28	6th millennium BC, 2nd-1st millennia BC	Late Mesolithic, Jebel Mokram Group
UA 29	6th millennium BC; 1st millennium BC-1st millennium AD	Late Mesolithic, Hagiz Group
UA 3		
UA 30	2nd millennium BC-1st millennium AD	Jebel Mokram Group, Hagiz Group
UA 32	2nd millenniun BC-1st millennium AD	Jebel Mokram Group, Hagiz Group
UA 33	1st millennium BC-1st millennium AD	Hagiz Group
UA 34		
UA 35	6th millennium BC; 500 BC-AD 500	Late Mesolithic; Hagiz Group
UA 36	1st millennium BC- 1st millennium AD	Hagiz Group ?
UA 37		
UA 38	2nd millennium BC-1st millennium AD	Jebel Mokram Group, Hagiz Group
UA 4	4th-2nd millennia BC	Butana Group, Gash Group
UA 41	2nd millennium BC-1st millennium AD	Jebel Mokram Group, Hagiz Group
UA 42	4th millennium BC-1st millennium AD	Butana Group, Jebel Mokram Group

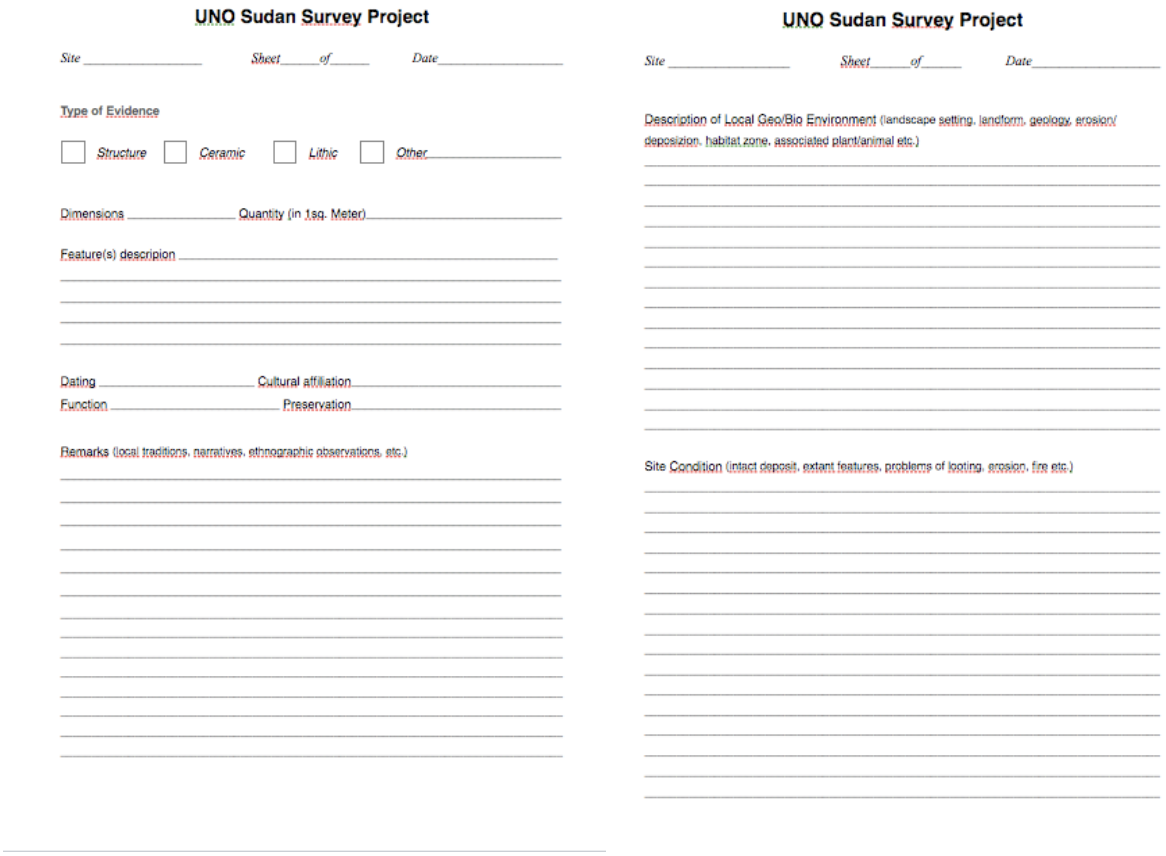
UA 43	6th millennium BC	Late Mesolithic
UA 44	1st millennium BC- 1st millennium AD	Hagiz Group ?
UA 45	1st millennium BC- 1st millennium AD	Hagiz Group ?
UA 46	1st millennium BC-1st millennium AD	Hagiz Group
UA 47	1st millennium BC-1st millennium AD	Hagiz Group
UA 48	6th-2nd millennia BC	Late Mesolithic, Neolithic, Butana Group, Gash Group
UA 49	1st millennium BC-1st millennium AD ?	Hagiz Group ?
UA 5	1st millennium BC	Late Jebel Mokram Group
UA 5 (0186428 1657129)	6th millennium BC, 1st millennium BC-1st millennium AD	Late Mesolithic, Hagiz Group ?
UA 50	6th millennium BC	Late Mesolithic
UA 51	2nd-1st millennia BC	Jebel Mokram Group
UA 53	3rd-1st millennia BC	Gash Group, Jebel Mokram Group
UA 54	1st millennium BC	Late Jebel Mokram Group
UA 55	6th-4th millennia BC	Meso/Neolithic
UA 56	1st-2nd millennia AD	Hagiz Group, Geragaf Group
UA 57	1st millennium BC-1st millennium AD ?	Hagiz Group ?
UA 58	1st millennium BC-1st millennium AD	Hagiz Group ?
UA 59	2nd-1st millennia BC	Jebel Mokram Group, Hagiz Group ?
UA 60	4th millennium BC	Butana Group ?
UA 61	1st millennium BC-1st millennium AD ?	Hagiz Group ?
UA 62	2nd-1st millennia BC	Jebel Mokram Group
UA 63	1st millennium BC- 1st millennium AD	Hagiz Group ?
UA 64		
UA 65	1st millennium AD	Post-Meroitic
UA 66	1st millennium BC-1st millennium AD ?	Hagiz Group ?
UA 67	4th millennium BC, 2nd-1st millennia BC	Butana Group, Jebel Mokram Group
UA 68	3rd-2nd millennia BC	Gash Group
UA 69	3rd-2nd millennia BC	Gash Group
UA 7	1st-2nd millennia AD	Hagiz Group-Gergaf Group
UA 70	3rd-2nd millennia BC	Gash Group
UA 71	3rd-1st millennium BC	Gash Group, Jebel Mokram Group
UA 72	5th millennium BC	Amm Adam Group
UA 73	5th-1st millennia BC ?	Neolithic, Gash Group, Jebel Mokram Group

UA 74	6th millennium BC	Late Mesolithic
UA 75	1st millennium BC-1st millennium AD	Hagiz Group
UA 76	6th millennium BC-1st millennium AD	Late Mesolithic, Butana Group, Gash Group, Jebel Mokram Grou, Hagiz Group
UA 78	3rd-2nd millennia BC	Gash Group
UA 79	1st millennium BC-1st millennium AD	Hagiz Group
UA 8	6th millennium BC	Late Mesolithic
UA 80	3rd-2nd millennium BC	Gash Group
UA 81		
UA 82	6th millennium BC, 1st millennium BC-1st millennium AD	Late Mesolithic, Hagiz Group
UA 83	3rd millennium BC-1st millennium AD	Gash Group, Jebel Mokram Group, Hagiz Group, Post-Meroitic
UA 85	6th millennium BC	Late Mesolithic
UA 86	4th-1st millennia BC	Butana Group, Gash Group, Jebel Mokram Group
UA 87		
UA 88	3rd-2nd millennia BC ?	Gash Group ?
UA 89	1st millennium BC-1st millennium AD	Hagiz Group
UA 9	4th millennium BC, 2nd-1st millennium BC	Butana Group ?, Jebel Mokram Group
UA 90	6th millennium BC, 4th-early 3rd millennium BC	Khartoum Mesolithic, Butana Group
UA 91	3rd-2nd millennia BC	Atbai Ceramic Tradition, possibly Gash Group
UA 92	4th millennium BC	Butana Group
UA 94	2nd-1st millennia BC	Jebel Mokram Group
UA 95		
UA 96	3rd-1st millennia BC	Gash Group, Jebel Mokram Group
UA 97		
UA 98	3rd-2nd millennia BC	Gash Group
UA 99	2nd-1st millennium BC	Jebel Mokram Group

Appendix 2
(*V. Zoppi*)

Site recording and GIS implementation

The activities mainly focussed on the implementation of a GIS collecting all the information of the surveys conducted in the 80s and 90s, the ones of the NCAM survey as well as the ones of the sites newly discovered by the Expedition in the 2010 field season. For the newly discovered sites and the sites visited by the Expedition a database was used, whose fields are reflected in the paper form used in the field (Fig.1).



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Site _____ *Sheet*____*of*____ *Date*_____

Type of Evidence

☐ *Structure* ☐ *Ceramic* ☐ *Lithic* ☐ *Other*_____

Dimensions _____ Quantity (in 1sq. Meter)_____

Feature(s) description _____

Dating _____ Cultural affiliation_____

Function _____ Preservation_____

Remarks (local traditions, narratives, ethnographic observations, etc.)

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Site _____ *Sheet*____*of*____ *Date*_____

Description of Local Geo/Bio Environment (landscape setting, landform, geology, erosion/ deposition, habitat zone, associated plant/animal etc.)

Site Condition (intact deposit, extant features, problems of looting, erosion, fire etc.)

Fig. 1: the form used in the field to record surveyed sites.

The collected information consisted of:

1. general information on the site such as given name and nearby villages or geographic features, geographic coordinates and dimensions of the site (calculated on the basis of the geographic coordinates of points on the perimeter), occurrence and description of materials and/or structures allowing the identification of the site and suggesting its function and/or chronology, state of preservation and disturbances affecting the site.
2. information on the general conditions of the survey such as date and crew members, weather and environmental conditions which may have affected the visibility of the site.

The data on the location of the site were recorded by means of a GPS Juno SB Trimble with software Arcpad 8.0 allowing the data entry directly in the GIS and the generation of preliminary maps already while surveying.

The data collected in the survey, the ones provided by the NCAM and the ones of the surveys conducted in 80s and 90s were recorded in a GIS project elaborated by means of the software Quantum Gis (Fig. 2), which may also provide tools for the management and the analysis of the data. In this way, thematic maps were generated according to the chronology of the sites (prehistoric with materials earlier than the 4th millennium BC; protohistoric with materials going back to the 3rd-1st millennium BC, and late with later materials). A database of the photographic records of georeferenced sites and structures is in progress and will be also related to the databases already in the GIS.

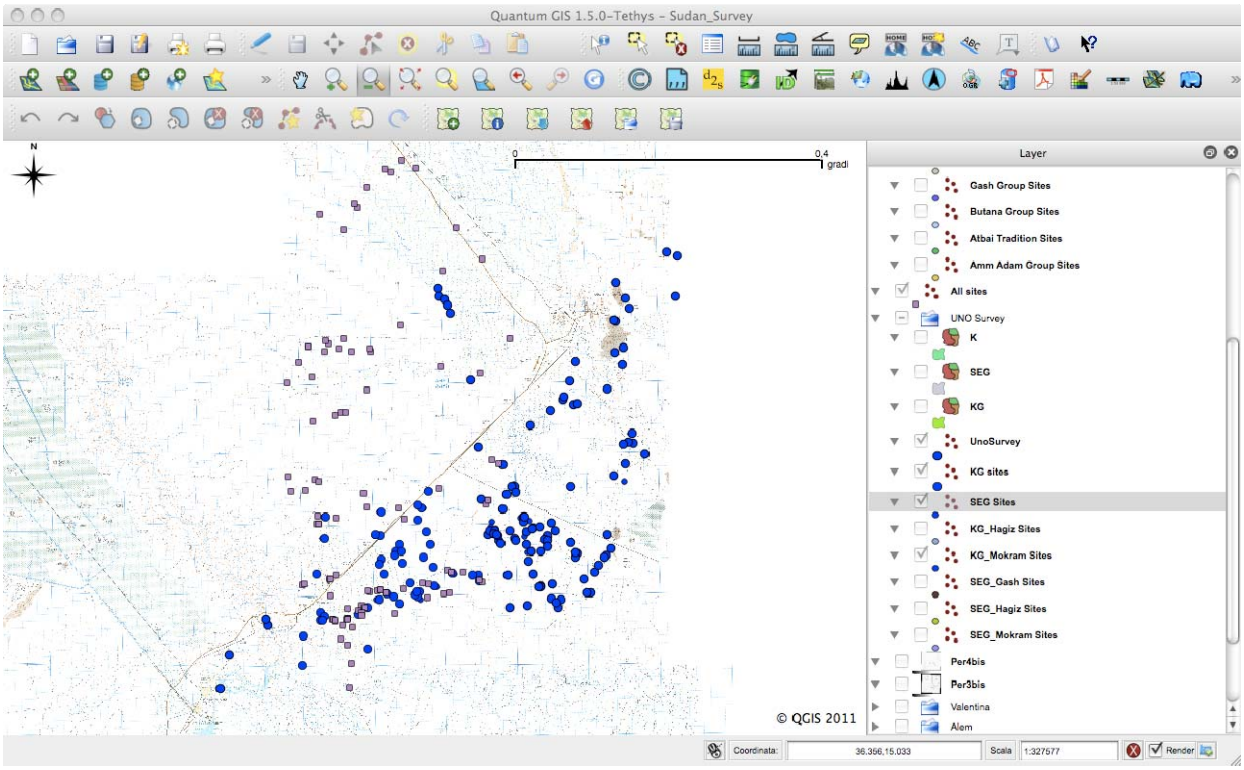

Fig. 2: shoot of Quantum Gis.