

SUDAN & NUBIA

The Sudan Archaeological Research Society



Volume 25

2021

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Front cover. Cattle and two goats\gazelle from Site GRD-14 in the Wadi Gorgod (photo Hamad Mohamed Hamdeen).

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Jebel Hawrā, a new archaeological site in Eastern Sudan

Enrico Giancristofaro

Introduction

Systematic archaeological investigations in Eastern Sudan began rather late, when two missions investigated the region in the 1980s and 1990s – one conducted by the Istituto Universitario Orientale (IUO), directed by Rodolfo Fattovich; and the other by the American-Sudanese team of the Southern Methodist University of Dallas and the University of Khartoum, directed by Anthony Marks and A. Mohammed-Ali (Marks and Fattovich 1989, 451-458). In particular, the two teams focused their research on the steppe between the Gash and Atbara rivers, with the aim of investigating the possible relationships that existed between the cultures of the Nile Valley, the Eastern Desert and the Ethiopian-Eritrean plateau (Fattovich *et al.* 1984, 173; Fattovich *et al.* 1988-1989, 348-354). The results of these investigations were particularly interesting, not only because they permitted archaeologists to define the manner in which these cross-cultural contacts took place, but also as they allowed the two teams to establish, on the basis of ceramics, a long cultural sequence (Atbai Ceramic Tradition), starting in the 6th millennium BC to the 2nd millennium AD, in a region that had hitherto been unexplored (Fattovich *et al.* 1988-1989, 394-396) (Figure 1). Furthermore, the investigations showed how the area was affected by a progressive drying-up in the second half of the Holocene period and, starting in the second half of the 3rd millennium BC, a hierarchical society had developed as a result of several combined factors; particularly, long-distance commercial contacts that took place throughout the 3rd and 2nd millennia BC. These commercial exchanges are widely attested by the discovery of exotic ceramic materials from Upper and Lower Nubia, the Eastern Desert, Egypt and Southern Arabia within the Gash Group and Jebel Mokram Group assemblages (Manzo 1997; 2018a; 2020a). In fact, it is likely that raw materials such as aromatic resins, ivory or ebony, came from here. This led to the hypothesis that this region was part of the famous land of Punt mentioned in Egyptian texts. After a gap of fifteen years, the investigations by the Italian archaeological mission resumed under the direction of Andrea Manzo, with the aim of acquiring further data regarding the less well-known phases of the aforementioned cultural sequence, as well as furthering our understanding of

SOUTHERN ATBAI			NORTHEAST AFRICA		
yrs	Phase	Group	Middle Nile	Egypt	N. Ethiopia
1000 AD	TAKA	Gergaf	CHRISTIAN	ROMAN	AXUMITE
			POST-MEROITIC		
1000 BC	LATE	Hagiz	MEROITIC	PTOLEMAIC	PRE-AXUMITE
		Late Mokram	NAPATAN	LATE DYNASTIC	
2000	MIDDLE	Mokram	LATE NEOLITHIC	NEW KINGDOM	
					MIDDLE KINGDOM
3000	EARLY	Gash	LATE NEOLITHIC	OLD KINGDOM	
					EARLY DYNASTIC
4000	TRANSITIONAL	Butana	KHARTOUM NEOL.	PRE-DYNASTIC	
	SAROBA	Site KG 28			
5000	PRE-SAROBA	Malawiya	KHARTOUM MESOL.		
		Amm Adam Site KG 14			

Figure 1. Cultural sequence in the Southern Atbai (Manzo 2017a: 6, fig. 3).

the relationships that existed both within the region and with Upper and Lower Nubia, the Eastern Desert and the Red Sea coasts. The investigations continued to focus on Mahal Teglinos (K1) – a site characterised by a considerable expanse and a long chronological sequence – and the steppe between the Gash and Atbara rivers. The choice of the latter area is linked to a salvage and rescue archaeology plan for the archaeological heritage of the region, seriously threatened by the Upper Atbara Irrigation Scheme (Manzo 2011, 1-3; Manzo 2012, 1-3; Manzo 2017a, 7).

During the excavation campaign

conducted by the Italian Archaeological Expedition to the Eastern Sudan,¹ in November–December 2019, a one-day survey was carried out with the aim of evaluating the area around Jebel Hawra, a majestic granite inselberg located c. 20km north-east of the city of Kassala, close to the Eritrean-Sudanese border (Manzo 2019, 269-270, 272) (Figure 2). Two sites of particular interest were identified to aid understanding of the settlement dynamics that have characterised the southern Atbai region during all its phases of occupation. Both sites are located on the western side of the jebel. The first site (JH1, N15°30.30; E36°34.58), very close to the jebel, is naturally cut by a wādī, allowing for the observation of its section. The second site (JH2, N15°30.15; E36°34.22) is considerably distant from the first one and is located on the steppe in front of the jebel where dirt roads are still in use today, causing significant damage to the surface material – this consists of several ceramic fragments and millstones, which allowed a preliminary dating of the site to the 1st millennium AD (Figure 3) (Manzo 2019, 269).

The pottery of Jebel Hawrā (JH1)

The material collected on the surface of JH1 consisted of 28 fragments attributable to a Meso-Neolithic and late Neolithic assemblage, which was mostly brought to light by a stream eroding a side of the site. The main features of the ceramic assemblages are described below.

Meso-Neolithic material

1. A single wall fragment with mineral inclusions (medium-large size) in yellowish-brown or reddish paste. The surface, carefully smoothed, has external decoration common to Mesolithic ceramics of the region (Figure 4). This pattern, defined Alternately Pivoting Stamp (APS), recalls the decoration on the pottery produced by the Malawiya Group (Cesaro 2017, 97; Manzo 2017a, 20). Nevertheless, along the Nile valley, in particular at al-Khiday, the APS decoration appears to be characteristic of Neolithic pottery (Manzo 2017a, 20; Salvatori 2012, 416-417).



Figure 2. Map showing the location and the main sites of Southern Atbai (Google Earth).

¹ The Italian Archaeological Expedition to the Eastern Sudan of the University of Naples “L’Orientale” and ISMEO, Associazione Internazionale per gli Studi sul Mediterraneo e l’Oriente, is supported by the “L’Orientale”, ISMEO and the Italian Ministry of Foreign Affairs. The research project is also part of the ISMEO-IPO project ‘Studi e ricerche sulle culture dell’Asia e dell’Africa: tradizione e continuità, rivitalizzazione e divulgazione’, supported by the Italian ministry of University and Research. The expedition is taking place in the framework of an agreement with the National Corporation for Antiquities and Museums and thanks to the support of the Government of Kassala State.

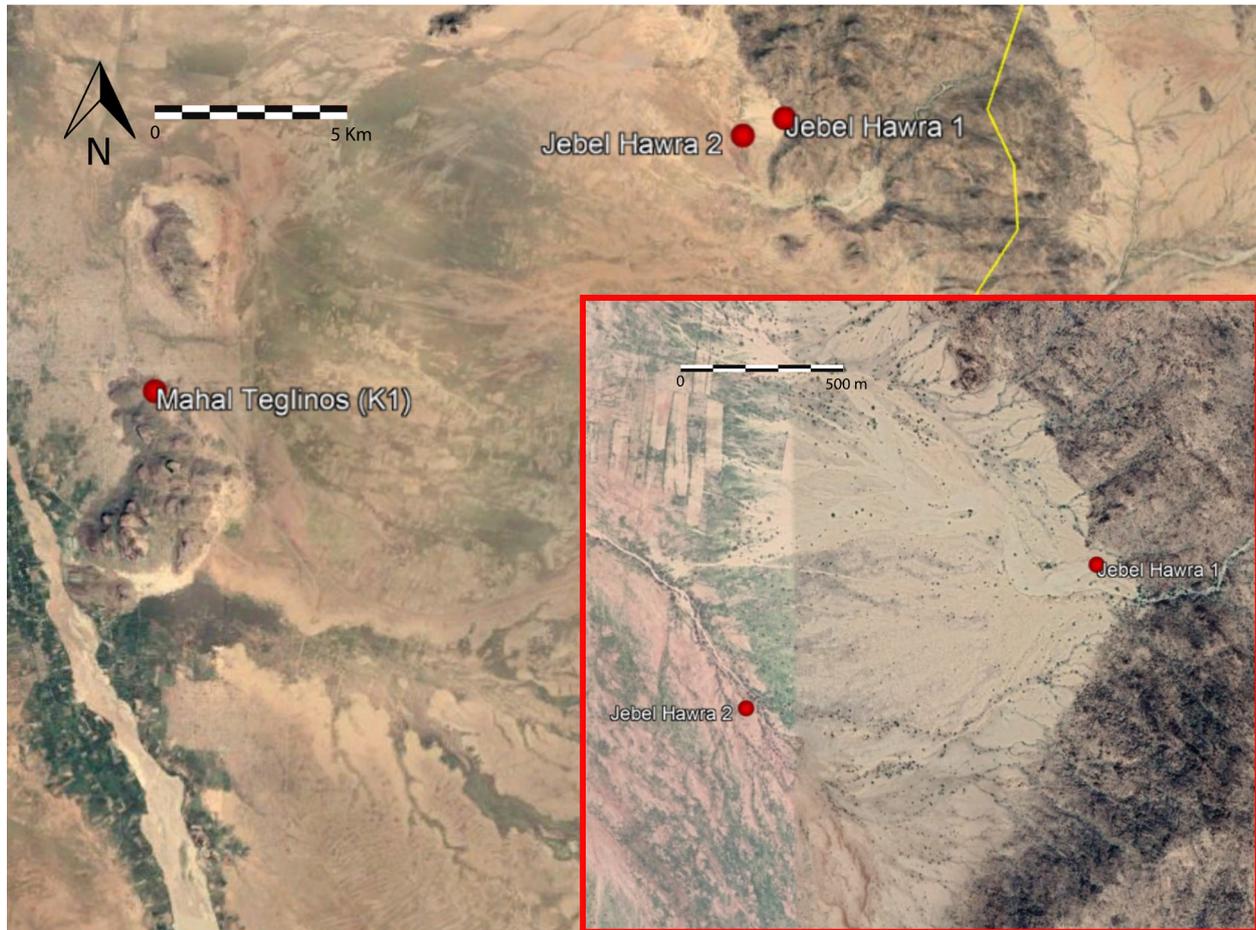


Figure 3. Map showing the site of Jebel Hawrā (Google Earth).

Gash and Jebel Mokram Group material

The remaining fragments dated to this phase, 27 in total, are characterised by a paste rich in mica (biotite/muscovite) and by the sporadic presence of vegetal temper. The fragments are documented as follows:²

Cups

1. Fragment of a vertical rim of a cup with a rounded section and diameter of 190mm, characterised by a reddish-brown paste and mineral inclusions. No decoration is recorded, even though the surface is smoothed and shows a black mouth treatment (Figure 5a). This type is widely attested within pottery assemblages from the Early Gash Group.
2. Fragment of everted rim with a flat surface attributable to a cup 200mm in diameter. The surface is carefully smoothed and also has thin cracks on the outside, probably due to too rapid a drying process before firing. The paste, observed in section, is reddish with a grayish core. The rim is decorated with an impressed rim band, executed in order to create a roulette effect (Figure 5b). The decoration, together with the shape of the rim, allows the fragment to be dated to the Classic Gash Group (Capuano *et al.* 1994, 114).

² The sherds were grouped according to the shape of the vessel. The distinction made between cups and bowls is based on the diameter of the rim. Vessels with an open shape and direct rim with a diameter up to 230mm were labelled as cups. Vessels with similar shape but with a larger diameter were conventionally labelled as bowls. The distinction between bottles and jars is based on the thickness of the walls and the rim. Nevertheless, the distinction between the two can be complex and there can be a certain degree of overlapping, as numerous varieties of jars have been identified, some of them with features similar to those of a large bottle (for example short-necked jars).

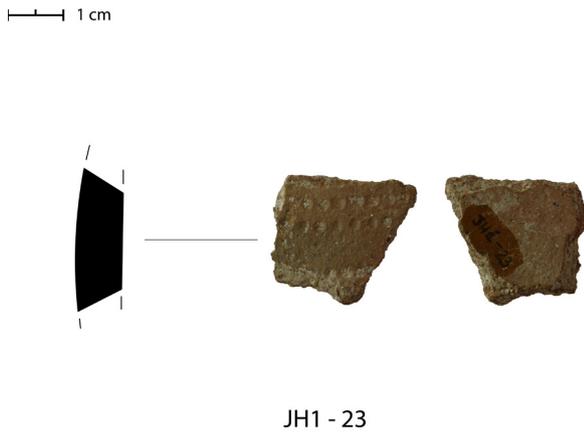


Figure 4. Meso-Neolithic fragment from Jebel Hawrā.

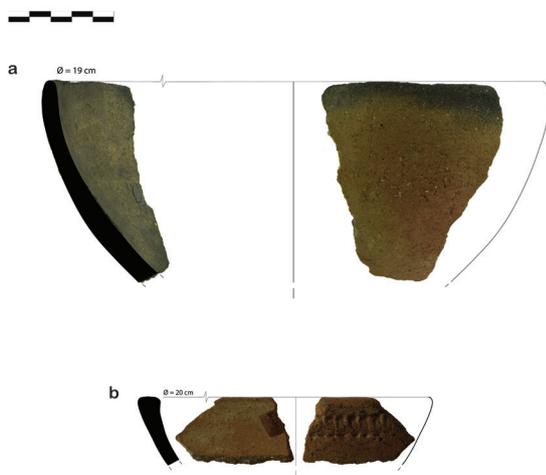


Figure 5. Cups from Jebel Hawrā.

Bowls

3. Fragment of a vertical rim with a flat surface belonging to a bowl with a diameter of 300mm and mineral tempered yellowish-brown paste. The surface, carefully smoothed, shows a reddish colour due to the application of a slip. A decoration consisting of fine wedge impressions is placed in such a way as to create a rim band, which forms the interim of two parallel incised lines under the rim (Figure 6a). The profile of the rim and the decorative motif, together with the presence of a reddish slip, allow us to date the fragment to the Classic Gash Group (Capuano *et al.* 1994, 114).

4. Fragment of an everted rim of a bowl with a diameter of 300mm. It is characterised by a reddish-brown paste with a black heart and mineral temper; the external surface, slightly smoothed, shows the outcrop of inclusions, probably quartz or lithoid fragments, while the internal surface is carefully smoothed. Externally, near the rim, an impressed rim band crowns the mouth of the vase: it is composed of single impressions made transversely to the surface with a square-section tool (Figure 6b). All these features allow us to ascribe this fragment to the typical ceramic production of the Classic Gash Group (Capuano *et al.* 1994, 114).

5. Fragment of everted rim with a flat surface belonging to a bowl 320mm in diameter. The paste

is characterised by a dark brown-yellowish colour and a mineral temper, while the surface is reddish and carefully smoothed, both internally and externally. The rim is decorated with a typical rim band consisting of two rows of wedge impressions (Figure 6c). Again, the features of the fragment allow us to date it to the Classic Gash Group (Capuano *et al.* 1994, 114).

6. Vertical rim fragment belonging to a bowl 260mm in diameter. The paste has a homogeneous dark brown colour with slight reddish-brown shades on the surface, which appears to be carefully smoothed. The decoration, which is made up of very close incisions, consists of a rim band (Figure 6d). The type of decoration, as well as its position and the type of rim, are characteristics common to the first phase of the Classic Gash Group (Capuano *et al.* 1994, 114).

7. Fragment of a recessed rim with a rounded profile of a black-topped bowl, with a diameter of 340mm (Figure 6e). The paste, observed in section, has a black colour, while the external surface is of a reddish-brown tone. The surface treatments consist of burnishing (external and internal) and a micaceous slip applied internally. The latter is well documented in the ceramics of the Middle Gash Group (Capuano *et al.* 1994, 114).

8. Fragment of a rounded rim of a bowl with a diameter of 240/260mm. The paste has a homogeneous dark brown colour while the surface, carefully smoothed internally and externally, has a reddish colour due to the application of a slip. The incised decoration consists of two motifs: the first, consisting of two parallel

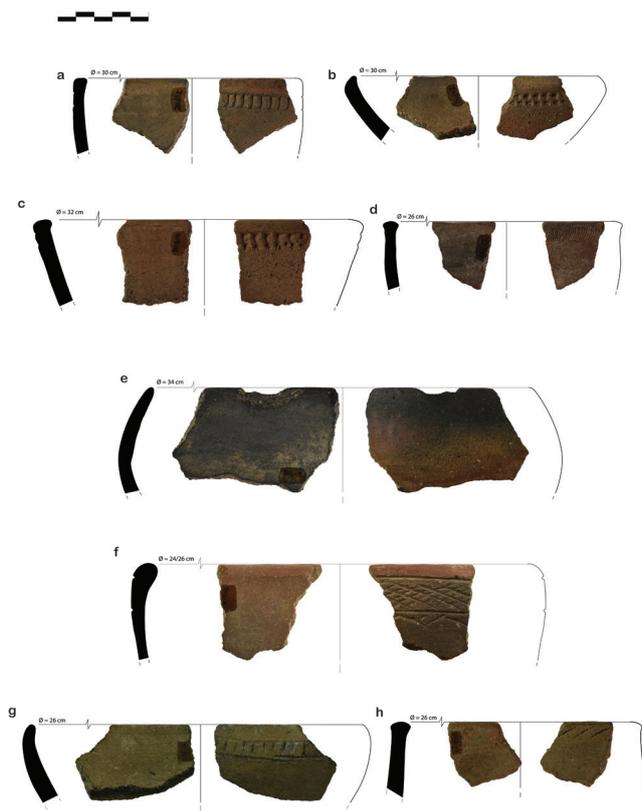


Figure 6. Bowls from Jebel Hawrā.

lines interspersed with crossed incisions; the second, placed below the previous one, with a zig-zag motif (Figure 6f). Although the decoration is attested within the Middle and Classic phases of the Gash Group, the occurrence of the red slip shifts the date of the fragment to the latter period, despite the uncommon rounded rim (Capuano *et al.* 1994, 114).

9. Rim fragment with a rounded profile of a bowl, having a diameter of 260mm, in a brown-greyish paste with mineral temper and yellowish hues on the surface. The surface is well smoothed and has a rim band decoration on the outside, which is badly executed near the edge and consists of two incised lines interspersed with vertical incisions. Internally, a single incised line runs along the entire edge (Figure 6g). These characteristics leave no doubt about the dating of the fragment, and it should be placed within the Middle Gash Group (Capuano *et al.* 1994, 114).

10. Rim fragment of a bowl with a diameter of 260mm. The paste is characterised by a mineral temper and a reddish-brown colour with a black core. The surface, carefully smoothed, has an impressed decoration made with a comb-like tool with teeth very close together (Figure 6h). The type of rim, as well as the decoration and its position are reminiscent of features of Early Gash Group assemblages (Capuano *et al.* 1994, 114).

Large Bowls

11. Vertical rim fragment with a flat surface, which belonged to a large bowl 500mm in diameter. The paste, with mineral temper, has a blackish-brown colour that also characterises the external surface; the internal surface has lighter reddish shades. An impressed rim band decoration was made, consisting of vertical wedge impressions placed parallel to each other; above, there are impressions placed diagonally and probably made with a shell (Figure 7a). The flat surface edge and the type of decoration are attributable to the ceramic production of the Classic Gash Group (Capuano *et al.* 1994, 114).

12. Fragment of an everted rim belonging to a large bowl with a diameter of 400mm. The paste is characterised by a mineral temper and a greyish colour; the surface, well smoothed, has a straw yellow colour and a decoration near the edge composed of two parallel incised lines placed horizontally, above which is an impressed decoration consisting of notches, perhaps finger impressions (Figure 7b). Although in this case the decoration is rather atypical, the shape of the rim would allow the fragment to be dated to the Classic-Late Gash Group (Capuano *et al.* 1994, 114).

13. Fragment of an everted rim attributable to a large bowl with a diameter of 400mm. The paste, composed of mineral and vegetable temper, is characterised by a reddish colour with a grayish core. The surface was scraped, probably with the back of a bivalve shell. In addition to this, the inner and outer edges, as well as the lip, are decorated with motifs typical of the earliest phase of the Gash Group (Capuano *et al.* 1994,

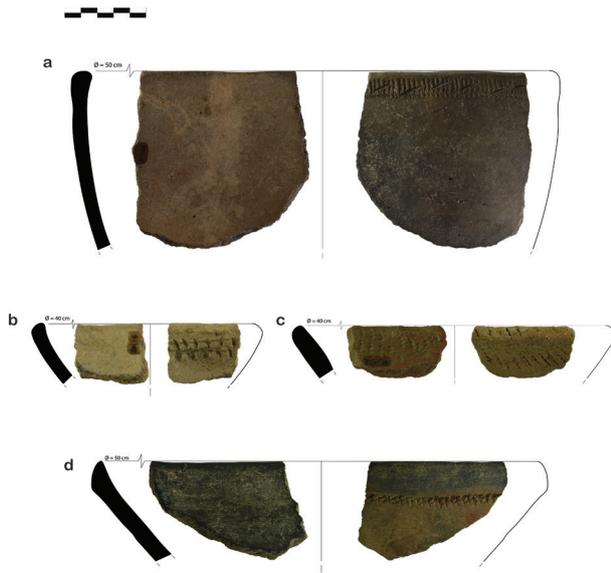


Figure 7. Large bowls from Jebel Hawrā.

surface has no decoration. Nevertheless, a probable black slip is visible on the rim, which was probably intended to reproduce the black-mouth treatment (Figure 8a). The dating of this fragment is based on the type of rim, which was very common in the Classic and Late phases of the Gash Group (Capuano *et al.* 1994, 114).

16. Sherd of an everted bottle rim with a diameter of 120mm. The mixture, reddish in colour and with a straw yellow core, has a rather fine mineral temper. The surface is very eroded but was probably well smoothed originally. Below the rim there is part of an unclear impressed decorative motif (Figure 8b). Nevertheless, both the typology of the impression and the rim profile suggest an approximate date to the Classic Gash Group.

17. Fragment of an everted bottle rim with a diameter of 140mm. The paste is characterised by a reddish-brown colour with small and medium mineral inclusions. The surface, dark brown in colour with reddish shades, is smooth and has no decoration (Figure 8c). Based on a comparison with a site west of the Gash River (SEG 7), where ceramic samples show a very similar surface, the proposed dating would place this fragment within the Middle Gash Group.

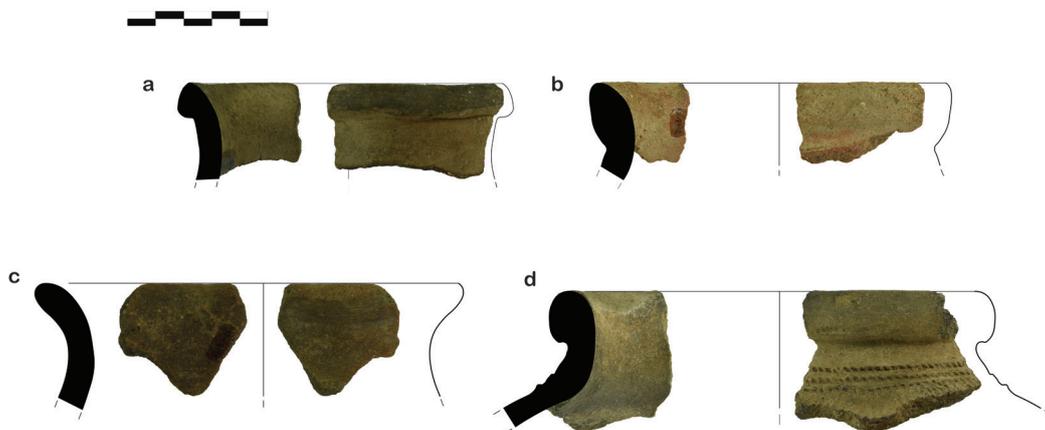


Figure 8. Bottles from Jebel Hawrā.

114) (Figure 7c).

14. Rim fragment of a large black-topped bowl with a diameter of 500mm. The paste is characterised by mineral temper and by a dark brown colour. The inner surface as well as the rim was burnished; the remaining surface has been carefully smoothed. Below the rim is a decoration consisting of small wedges arranged in a crisscross manner (Figure 7d). Although the decorative typology is common to the Classic phase, the profile of the rim as well as the colour of the paste suggests a dating to the Middle Gash Group (Capuano *et al.* 1994, 114).

Bottles

15. Fragment of a bottle rim with a diameter of 110mm. The paste has a brown colour with a black core and mineral inclusions. The smoothed

18. A sherd of an enlarged bottle rim with a diameter of 120mm. The paste, observed in section, is characterised by a greyish colour with medium-small mineral inclusions. The well-polished surface has a pale yellow or gray colour. On the pronounced shoulder there is both impressed and incised decoration, made with a comb-like tool with which simple impressions were made crosswise to the surface, arranged on two registers. Beneath these, a further decorative motif was created using the same tool, which was used to create impressions equal to those mentioned above, created by dragging it downwards, obtaining by effect, parallel grooves that descend along the shoulder of the vase. Nevertheless, it is plausible that this final part of the surface treatment, instead of being a real decoration, is an example of so-called scraping (Figure 8d). Overall, considering the type of rim, this fragment may be dated to the Classic Gash Group.

Jars

19. Fragment of rim and shoulder of a ‘wide-mouth’ jar with a diameter of 380mm. The brown-reddish coloured paste has predominantly small inclusions that can also reach medium size. The surface, both internal and external, is scraped, with the exception of a small internal portion, near the rim, which appears burnished. The decorations cover different parts of the surface: an incised motif made of crossed lines decorates the surface of the rim and part of the lip; around the neck run two bands of impressed round notches; the third and last decoration occupies the shoulder and consists of two registers consisting of double ‘V’ incisions (Figure 9). The decoration along the rim is quite common in many phases of the Gash Group, in particular the Ancient and Classical phase, while the other two are attested in later phases, in particular the Middle and Classical phase. Furthermore, fragments with a similar rim profile have been found at site K1 and date to the Classical phase of the Gash Group (Capuano *et al.* 1994, 112, Fig. 3, no. 6).

Undefined shapes

20. Wall fragment probably belonging to a carinated shape (a cup or a bowl) with a brown paste and mineral temper consisting of medium-large inclusions. Both the inner and outer surfaces have been burnished and refined with the application of a micaceous slip that was particularly widespread in the Middle phase of the Gash Group (Capuano *et al.* 1994, 114) (Figure 10a).

21. Wall fragment of a probably closed shape, with a brick-red and black paste and mineral inclusions, generally of medium-small size but which can be up to 1mm in diameter. Externally the reddish surface appears well polished, with an impressed decoration consisting of geometric sectors, performed with a



Figure 9. Jar from Jebel Hawrā.

multi-tooth instrument, above which there is an undecorated area. Internally the reddish-brown surface appears rather eroded but with traces of burnishing still visible (Figure 10b). Very similar fragments in the Classic Gash Group ceramic assemblage were found at Mahal Teglinos (K1) (Manzo 2018c, 76, MO213, MO214) and JAG 1.

22. Wall fragment in reddish or light brown paste and with mineral inclusions varying in size. The surface appears poorly finished and very eroded, with internal scraping and simple smoothing on the exterior where, moreover, there is a decoration consisting of three parallel modeled clay lines (Figure 10c). Although the surfaces are poorly finished and the walls are thin, the decoration is reminiscent of the ceramics found at Mersa/Wadi Gawasis and Miqhala Dar al-Haytam, which is attributable to the ceramic production of the Sabir culture, at the beginning of the 2nd millennium BC (Manzo 2018b, 121, fig. 151g, 133; Vogt and Sedov 1998, 266, fig. 4). Nevertheless, the addition of applied decoration with modeled clay is also well attested within the Classic and Late Gash Group pottery assemblage at Mahal Teglinos (K1) and

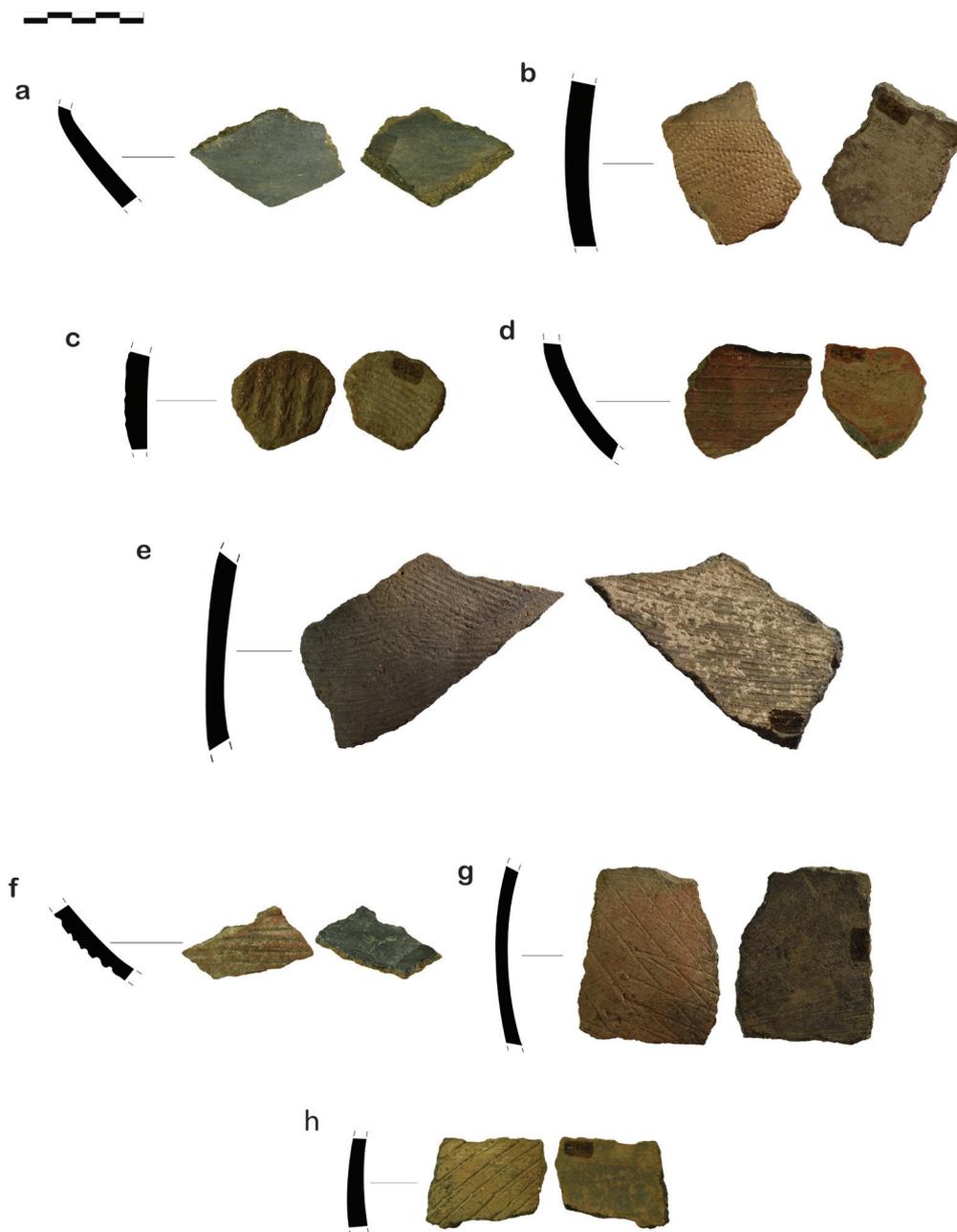


Figure 10. Wall fragments from Jebel Hawrā.

around Agordat (Arkell 1954, pl. VI, n° 5; Capuano *et al.* 1994, 114). However, some kind of relation with Yemeni pottery cannot be entirely ruled out as possible similarities with this pottery have previously been noted in Gash Group assemblages (Fattovich 1991, 45).

23. Wall fragment with a reddish paste and grayish core with rather fine mineral inclusions that sporadically reach a medium size. The outer surface is badly smoothed with decoration consisting of engraved parallel horizontal lines that may have covered the entire surface of the vase (Figure 10d). Similar fragments were widely spread from the Late Gash Group, as a result of contacts with the peoples of the Eastern Desert. Vessels with this type of treatment were found at sites in the Eastern Desert (Manzo 2020b, 71, fig. 8.7a; Sadr *et al.* 1995, 211, fig. 10) as well as at Mersa/Wadi Gawasis, Egypt (Bard and Fattovich 2007, 126-127, fig. 53a), and in Lower Nubia, e.g. at Askut on the Second Cataract (Smith 1992, 33, fig. 2c) and at Wadi es-Sebwa, where similar fragments have been recorded in a C-Group assemblage characterised by Pan-Grave elements (Gratien 1985, 52-55, fig. 12). In the Eritrean-Sudanese lowland these kinds of fragments date between the Middle and Late phases of the Gash Group and to the Jebel Mokram Group (Manzo 1997, pl. 4c; Manzo 2017b, fig. 5e).

24. Fragment of a wall in gray-yellowish or brown paste with a black core. The mineral and vegetal temper is characterised by inclusions of medium-large size. The surfaces, rather rough, have been finished by scraping only (Figure 10e). This type of surface treatment is a typical feature of Eastern Sudan pottery (Atbai Ceramic Tradition) as early as the 5th millennium BC and widely recurrent during the Gash Group (Manzo *et al.* 2012, 56; Manzo 2017a, 33) and, although to a much lesser extent, the Jebel Mokram Group (3rd -2nd millennium BC).

25. Wall fragment in brick-red paste with a straw yellow core. The inclusions, of mineral origin, are around small or medium size. The surface, carefully polished, is externally finished with parallel horizontal grooves that probably covered the entire surface of the vessel. The vessel may have been black-mouthed (Figure 10f). Very similar fragments, in the Eritrean-Sudanese lowland, are common to the ceramic production of the Classic/Late Gash Group and the Jebel Mokram Group (Arkell 1954, pl. 8, no.1; Manzo 2012, 56, 60, figs 82, 85; Manzo 2017a, 33, 43). Vessels with similar decoration occur in C-Group and Kerma assemblages (Gratien 1985, 52-55, fig. 12), but also in assemblages with Middle Nubian materials in Egypt e.g. at Mersa/Wadi Gawasis (Bard and Fattovich 2007, 126-127, fig. 53a).

26. Wall fragment of a black-topped vase characterised by a paste dark brown or black in colour with reddish hues and medium-large sized mineral inclusions. The surface, finished by clear wiping, is characterised by an external impressed 'wolf tooth' decoration associated with a parallel incision (Figure 10g). This motif is particularly typical of Butana Group pottery (Fattovich 1998-1989, 99; Winchell 2013, 164, fig. A.14, item in the bottom row on the right). In this case, the different execution technique and its association with the wiping, the black-topped treatment and the parallel incisions mean we can date the fragment to the Jebel Mokram Group (Manzo 2017b, fig. 7d).

27. Wall fragment in reddish-brown paste with a black core and mineral inclusions of medium-small size. The surface is light in colour, with reddish hues and traces of internal burnishing, probably performed as an alternative to the 'black-top' treatment (Figure 10h). Externally, the surface is decorated with rather thin oblique incisions, typical of the ceramic production of the Late Gash Group and the Jebel Mokram Group – in particular the Kubdai Incised Ware, which is in turn closely related to the Pan-Grave culture (Manzo 2012, 58, 61-62, figs. 82, 85-88; Manzo 2017a, 44, fig. 37; Manzo 2017b, fig. 6a-c; Sadr 1987, 274, fig. 5). Furthermore, similar fragments have been found in several 2nd millennium BC assemblages in Egypt, e.g. at Aswan/Syene in a settlement context from the end of the 12th-13th dynasty (Forstner-Müller 2012, 74, fig. 11, 17), and at Avaris but, in this case, in an assemblage dating to the beginning of the New Kingdom (Forstner-Müller and Rose 2012, 197, fig. 30).

Conclusions

Within the current state of knowledge of Eastern Sudan, some interesting issues are posed by the ceramic materials from JH1. In general, this surface collection may suggest a certain degree of continuity in the location of settlements from the Malawiya Group into the Gash Group and Jebel Mokram Group, or at least the reoccupation of some sites over a long period of time in the region east of the Gash river. This is well known in the area between the Gash and the Atbara (see e.g. Manzo 2012, 6-21; 2019, 269).

The ceramic material from JH1 is characterised by a typically high quality. The varied shapes from the site are mainly bowls, large bowls and bottles, but there are also cups and jars. The surface treatments are remarkable, as they are very evident in the JH1 materials, perhaps due to the fact that most of these materials were recently brought to light by erosion. Most fragments, in fact, are carefully smoothed while the polishing/bluing was very often performed only on the internal surface, sometimes in combination with the 'black-topped' treatment, most likely made during the firing process by placing the vessel upside down. In one case, a black topped effect may have been obtained by differential burnishing on the inside and the outside of the vessel, a practice perhaps related to the large size of the pot making the usual firing via an upside-down position difficult. The high quality of the fragments from JH1 is also confirmed by the presence of two different types of slip: the first, reddish in colour, is well known from the ceramic production of the Classic Gash Group (Capuano *et al.* 1994, 110); the second, of a greyish colour, would seem to have been made by adding mica (biotite/muscovite). The latter type has been found on material dated to the Middle phase of the Gash Group at Mahal Teglinos (K1) (Capuano *et al.* 1994, 110). Interestingly, the micaceous slip does not appear to be documented in ceramics from sites near Shurab el-Gash west of the Gash river. It remains to be clarified if this is due to the fact that the preservation of the ceramic surface collections from the Shurab el-Gash area is more heavily affected by erosion, as the fragments were left on the surface of the sites for a long time. Nevertheless, it should be stressed that the preliminary results of a programme of archaeometric analyses conducted on the ceramics of the Gash Group would suggest that clay was harvested near the sites where the ceramics were produced.³ In the case of the Jebel Hawrā region, it should also be noted that large deposits of mica were found near JH1,⁴ possibly resulting from erosion related to the high number of tributary *widyān* east of the Gash river (Costanzo *et al.* 2021, 6, fig. 4). Indeed, this may explain why micaceous fabrics and slip are very common in the surface collection from JH1.

In conclusion, these first limited investigations of the ceramic materials from JH1 have provided interesting and rather promising preliminary results, drawing attention to a site never previously investigated nor documented, whose location makes it the easternmost Gash Group site so far recorded in the Kassala region. It is highly desirable to have further opportunities to investigate this site and expand the archaeological exploration of the region around it in the near future, with the aim of enriching our knowledge of the settlement pattern east of the Gash river, as well as the intra-regional variability of ceramic productions in Eastern Sudan.

Acknowledgements

I would like to express my sincere gratitude to Andrea Manzo for giving me the chance to study the material from Jebel Hawrā, for his unfailing support and precious advice as well. Many thanks are also due to Stefano Costanzo for his patience and tips.

³ This programme on the materials from the Gash Group sites surveyed in the 1980s was started as part of the research activity for the preparation of my MA dissertation, in the framework of the ARCAM research programme for the archaeometric study of the pottery involving University "L'Orientale", University of Naples "Federico II", ISMEO and Catholic University of Milan.

⁴ These mica deposits were noted by Mr Stefano Costanzo, geoarchaeologist of the expedition. I thank him for this information.

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