ERITREA

New perspectives on the Agordat material, Eritrea: A re-examination of the archaeological material in the National Museum, Khartoum

Alemseged Beldados
c/o Dr. Andrea Manzo
Piazza S. Domenico Maggiore
12-80134 Napoli (Palazzo Coriglali), Italy
E-mail: alemseged-beldados@yahoo.com

Randi Haaland
Unifob Global
Nygaardsgt 5
University of Bergen
5007 Bergen, Norway
E-mail: randi.haland@global.uib.no

Anwar Magid
Centre for Africa Studies
University of the Free State
P. O. Box 339
Bloemfontein, 9300, South Africa.
E-mail: OsmanEA.HUM@ufs.ac.za

Introduction

Agordat in Eritrea has provided one of the most extensive pre-historic materials in the Horn of Africa. The materials were collected and presented to the Sudan National Museum by A. J. Arkell and Major J. S. Last, the political governor of Eritrea in 1942. Most of the materials recovered from the site are surface finds from four different localities within Agordat: Kokan, Ntanei, Shabeit, and Dandaneit (Arkell 1954:33). Kokan has offered much more artifacts than the other three. A. J. Arkell, who managed to recover potsherds, lithic artifacts, fragments of a human skeleton and teeth, also excavated the same area. Later, however, he found that the spot chosen for the trench excavation had been disturbed by later burials. Arkell (1954) saw the finds as quite uniform and regarded them as belonging to one culture. The new analysis of the material shows that the material is very varied however, the main connection appears, as Arkell suggested, to be related to the cultures of the Nile valley dated to around the 4th millennium bp (Beldados 2006).

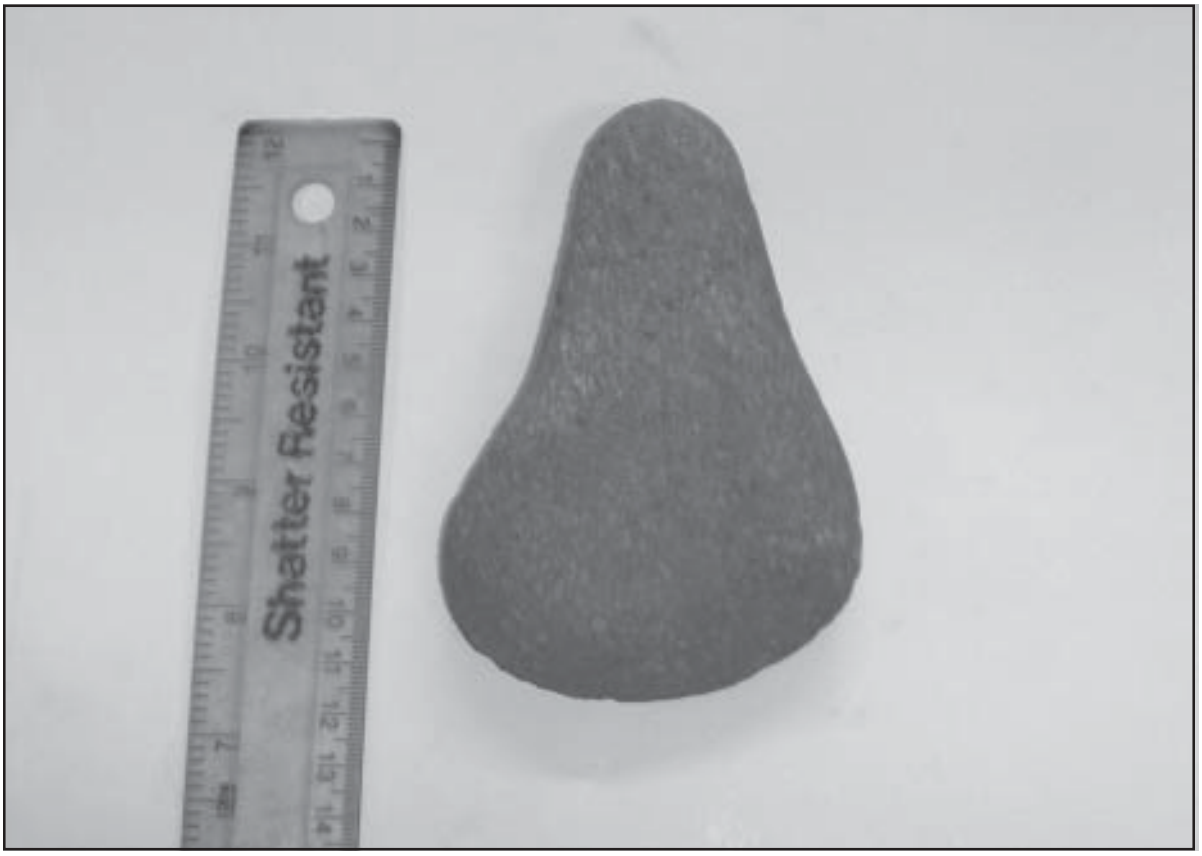
In general, the site has rendered 1469 sherds and 3958 lithic artefacts, flaked and polished tools such as mace heads, stone palettes, grinders, stone bracelets, stone bowls, net sinkers (?), as well as pendants and polished axes with metal prototypes[1]. An animal figurine (made of petrified wood), beads made of faience, and bronze objects were also found. Among the flaked stone aritfacts, obsidian debitage constitutes the largest proportion. Obsidian does not seem to appear locally and must have been brought to the site (Beldados 2006). In the inventory work of the Agordat material, it was possible to study almost all of the artifacts except those under inventory number; 4737, 4550, and 4508, which are missing (Beldados 2006).

Dating the archaeological material

The material is very rich and varied, but is difficult to date it since it is only based on surface finds. However there are some artifacts and features which can give us an indication of the age. There are several finds of polished axes of the lugged type and so-called Darfur axes (Figure 1). Arkell (1954) suggested these to have had metal prototypes. The axes could have been used as a symbol of power modelled on symbols used in Egypt. It has also been suggested that they were used for wood working (Kedding 1997), which we find more unlikely especially since they do not show much wear. Other stone axes (Figure 2) are similar to copper axes found in Egypt which can be dated between the Twelfth (1985-1773 BC) to the eighteenth dynasty (1550-1295 BC). The BC dates used in this article consists of calendar years. A similar copper axe is also reported by Søderberg (1991 volume 4:2, plate 42).

Pottery is quite varied, both in terms of shape and decoration. There are however certain features, which shows similarity with pottery from other sites in the region. A diagnostic feature is the use of clay ball appliqué on pots (Figure 3). A similar technique was used in the production of pottery recovered from sites of the Jebel Mokram group in the Butana, which are dated between 3500/3550-3700/3820 bp (Sadr 1991:269). Other features that are seen as diagnostic are decorative patterns organized in zones, made by impressed or incised techniques (Figure 4). The zonal pattern is quite common on ceramics found on sites from the Early Kerma period. This is dated to 2500-2050 BC (Sadr 1991; Edwards 2004:94). There are also parallels with pottery from partially contempo-

Figure 1. Stone axe similar to the so-called Darfur axes.



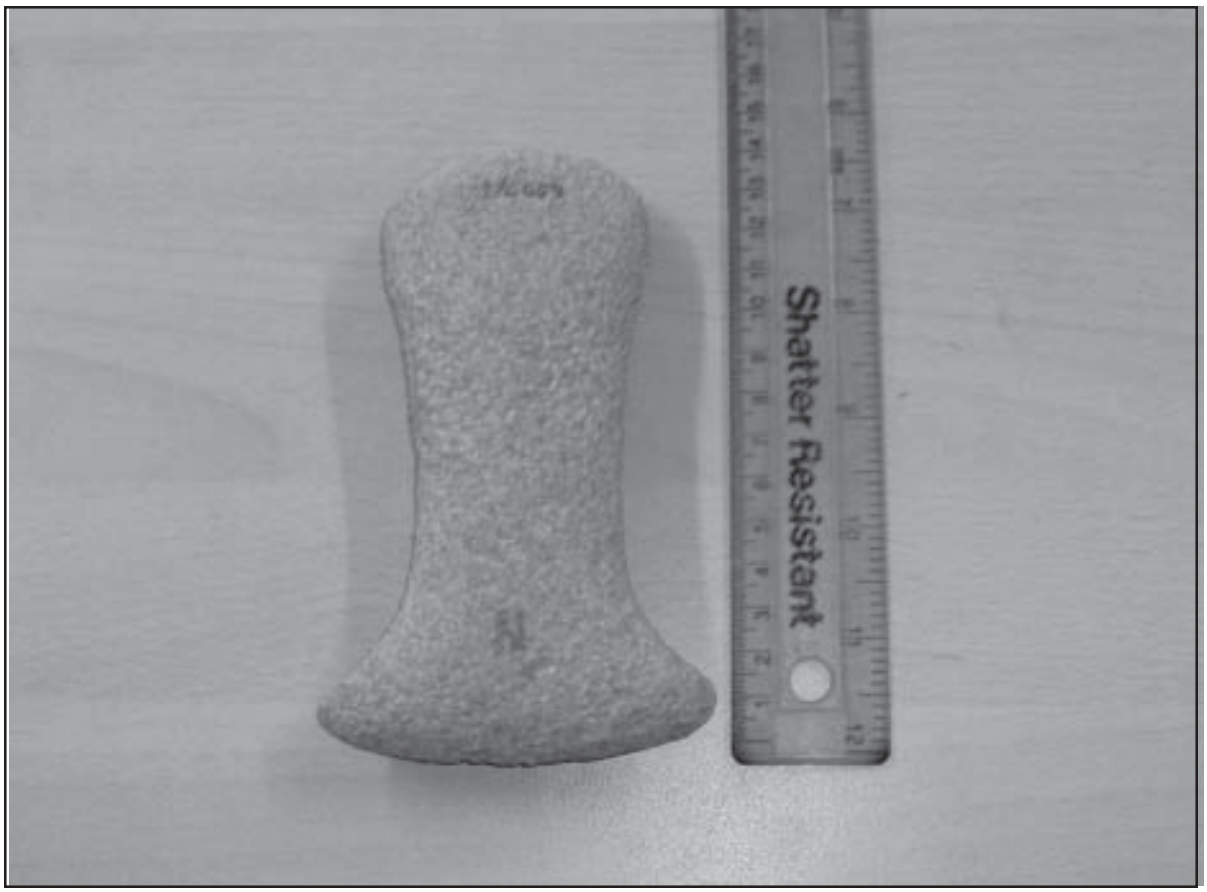
rary sites of the Pan Grave and the C-group culture. An almost identical pot has been found at a C-Group cemetery in Nubia (Friedman 2004:26). There is some similarity seen in ceramic material recovered from the Rabak site, carbon 14 dated to 4490 ± 100 bp (Haaland 1989: fig. 2, 14). The time of occupation can probably be estimated to be between 4500-3500 bp. This is a very long time period, but it is notable in that it roughly coincides with the time of intensive trade contact between Egypt and the land of Punt.

Agordat and its environment

Agordat is located in the Barka Valley some 200 km west of Asmara, along the Barka River (Figure 5)**.** Large outcrops of granite are the dominant features of the area (Arkell 1954:33). The site lies at the base of the foothills of the Eritrean plateau, at the eastern limits of the Sudan plain. The material is found scattered in four different localities amid erosion channels, probably being eroded down from higher lying areas. The localities are situated at a distance of 1-10 km from each other. The dominant type of soil at Agordat is sandy soil (http:\\www.Agordat\Agordat). The area is part of the western hot lowlands and the vegetation is of the dry savannah type. The rainy season is from December to February where temperature varies between 25 and 35°C. The hottest period of the year is between June and September with a temperature ranging between 40 and 50°C. (http\\www.Agordat\Eritrean_towns). A variety of crops, fruits and vegetables like millet, sorghum, cotton, banana, watermelons, tomato, onions, and green pepper are grown in the area today. Akat trees or Doum palms also grow adjacent to the Barka River.

The site is named after the nearby old town, Agordat, formerly the capital of the Barka zone. Since 1996, Agordat has become the regional capital of the Gash-Barka province. The Gash-Barka province covers an area of 37,000 km^2 and is inhabited by 567,000 people, roughly one-fourth of the total population size of Eritrea (http\\www.Eritrean towns). Agordat

Figure 2. Stone axe similar to copper axes found in Egypt.



can be seen as the eastern extension of the Sudan plain stretching from the Nile eastwards to the Eritrean Highlands. The present day hot lowland territory between the Ethiopian highlands and the Atbara River receives an annual rain fall of between 200-400 mm; adequate for the growth of acacia and scrub vegetations. Broad-leafed plants grow only along the Gash River (Sadr 1991). At present, different Cushitic speaking pastoral groups populates this area.

During the early Holocene (Ca. 10.000-5000 bp), North Africa had experienced a pluvial climate. This period is often described as the "African Humid Period" (AHP), which is characterized, by the "wetting and greening of the Sahara" (Gasse and Roberts 2005:317; Hoelzmann et al. 2004: 228). This wet phase had allowed lakes to develop in many parts of the present day Sahara Desert (Sadr 1991). Around the 5th millennium bp, the area experienced a period of climatic drying (Fattovich et al. 1984), and after the middle of the 3rd millennium bp, dry climatic condition prevailed and continued to be, more or less, the same until the present day. What was unique during this period was the numerical increase of these settlements and that larger ones being established such as Mahal Teglinos (Fattovitch 1993).

Plant impression in potsherds from Agordat and their wider implications

A surface collection of potsherds was examined in the Sudan National Museum for plant impressions. Eleven of these seemed to have plant impressions, and were subjected to further examination using a 10x magnifying glass. Although the results obtained are far from complete, eight potsherds are found to have cavities similar to those of plant impressions (mainly seeds), the majority of these probably belong to seeds of different genus of Gramineae. There is a possibility that one of those seeds impres-

sions belong to wild forms of *Sorghum*. Advanced laboratory examination is yet to be made in order to confirm the preliminary results obtained so far (Anwar A-Magid, preliminary report). One of the eight potsherds selected for plant impression examination is burned on its interior surface. The burning of the sherd is due to the inclusion of some plant materials as temper. Besides, the smoothening/burnishing of some of the sherds is done also using plant materials as can be seen on the surface of the ceramics.

However, evidence of material culture remains associated with utilization (e.g. harvesting, and processing) of plant food at Agordat is very rare. Only one lower grinding stone and five upper grinding stones were recovered from this site (all of them are surface collection). [Indeed, the number of grinding stones is minimal when compared with the number of potsherds and the stone tools from the same site.

The Barka Valley where Agordat is located is within the habitat of naturally (wild) growing sorghum. Plant species of the Gramineae (grass) family like *Sorghum* sp. Moench, *Setaria* sp. Beauv, *Echinochloa* sp. Beauv (abundant plant type at Nabta Playa) were also recovered in forms of seed impressions in pottery recovered from Early and Middle Holocene sites in the Blue Nile, area, Sudan (Magid 2003). *Setaria* sp. Beauv is still utilized by desert inhabitants in Egypt and the Sahara. All three species were collected wild for human consumption. Some require wetter conditions than prevailing dry conditions at most of the sites. This indicates that the climate was more humid than present (ibid). *Sorghum verticilliflorum* (Desv.) Stapff, for instance, needs a minimum of 500 millimetres of annual rain. The clayey alluvial is the best type of soil for sorghum (Haaland 1987).

Based on the available evidence and dates, it seems most likely that the form of seed-impression of sorghum from Agordat is morphologically similar to naturally (wild) growing species. The earliest evidence for utilization of wild sorghum in Sudan comes from Early Holocene (Early Khartoum type of) site of Abu Darbein in the Middle Nile region (Magid 1995). The oldest date from the site is 8600 bp (Haaland and Magid 1995, 2003).

The archaeo-botanical evidence available suggests that evolution from cultivated to domesticated sorghum took several millennia and did not occur before the end of the 3rd millennium bp (for further discussion, see Haaland 1987, 1995; Magid 1989,

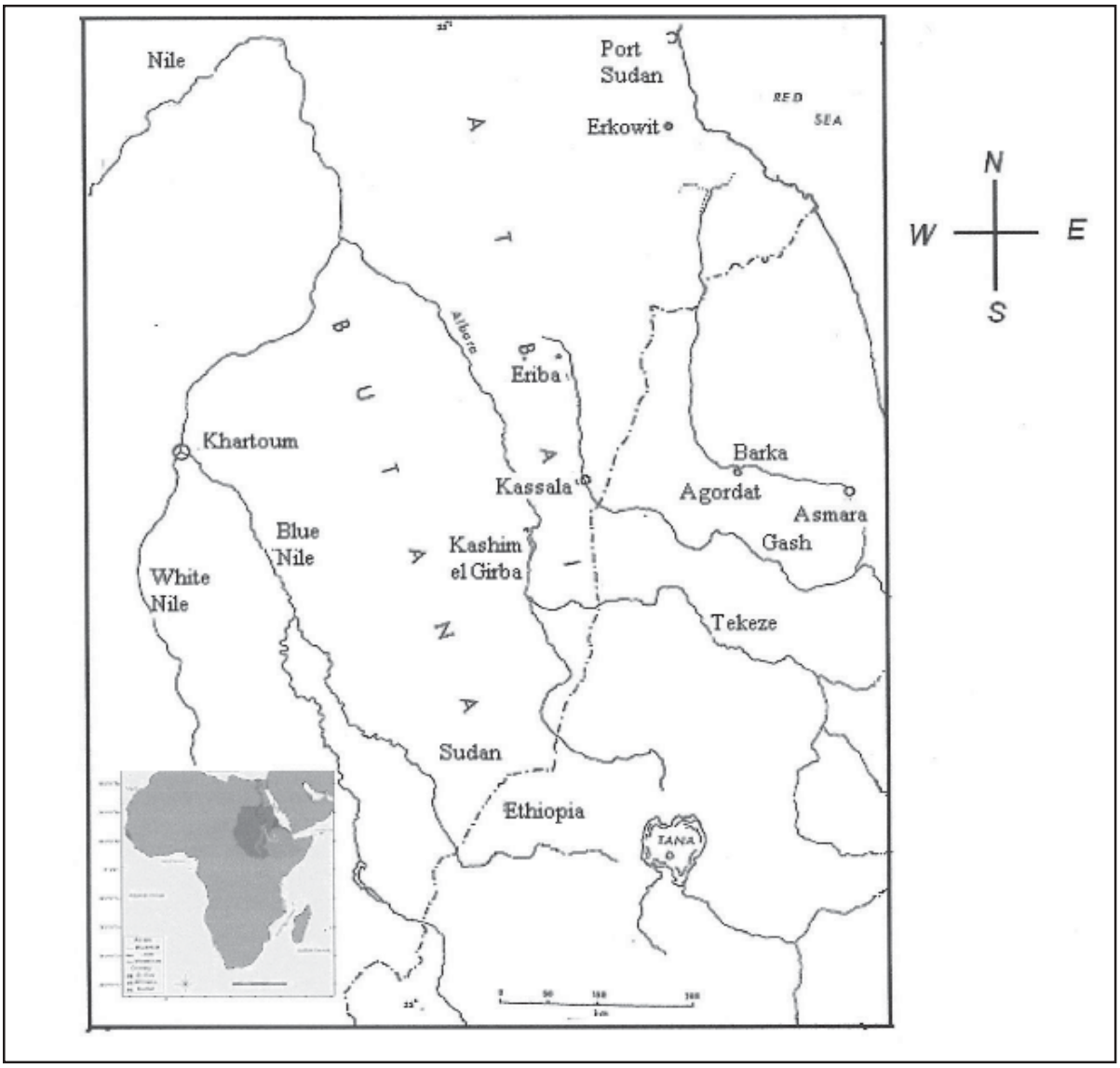
Figure 3. Pottery with a pattern made by clay ball appliqué.

Figure 4. Potsherd with zonal pattern.

2003). The evolution from naturally growing (wild) to domesticated sorghum has been much debated. The earliest clear evidence for diagnostic morphological changes which, show that sorghum was domesticated, seems to occur very late. We find this at the sites Jebel Tomat, Qasr Ibrim and Meroe, all dated to the Meroitic period around the birth of Christ (Rowley-Conwy et al. 1997; Stemler 1990). It has been brought to our attention quite recently that sorghum with features that suggests a more advanced race of cultivated (morphologically changed) sorghum (*caudatum* or possibly *durra*) has been recovered from Middle Nubia, Kawa and dated to 2450 bp (Fuller, personal communication) this lends support to the hypothesis that cultivation of sorghum goes quite far back in time. It also seems highly unlikely that people during the Meroitic time with a complex civilisation were not practising cultivation, but relied on wild plants. Furthermore, the evidence, which shows, that domesticated African *Sorghum* (*bicolor*) was present in the Indian sub-continent in the third millennium bp, (Fuller 2003), provides strong support for an earlier phase of African cultivation.

To sum up the material from the Middle Nile valley shows that sorghum has been exploited for a long time, first in a form of gathered wild cereal manifested in the site of Arbu Darbein 8600 bp then as cultivated wild sorghum at the sites of Um Direiwa, Zakiab, Kadero around 6000 bp, and finally at Meroitic

Figure 5. Map of major archaeological sites (adapted from Fattovich et al. 1984).



sites around the birth of Christ.

The Agordat area is an extension of the flat Sudan savannah plain, which was part of the natural habitat of sorghum. This area would also have been in-between-the Nile and the Red Sea, and thus crucial for the spread of sorghum across to Yemen-Oman and further east to India. It has previously been argued (Haaland 1999) that archaeological material indicates some cultural contact between the Nile and the Red Sea as far back as the Neolithic 6000 bp. The finds of marine shells from the Kadero site is an indication of early contact.

The Agordat material, such as pottery and polished stone axes show cultural affinities with sites along the Nile. Another important item is the presence a good deal of obsidian artefacts. The source of this obsidian is not known, but it can be found in the highlands of Ethiopia and Eritrea or from the Arabian Red Sea coast and Dalakh islands. It is interesting that obsidian appears to have a wide distribution in time and space and was probably part of an exchange network. It is found on localities from along the Red Sea along the Nile valley from pre-dynastic to later periods especially from the Kerma and C-group sites.

This material could have reached the Nile area through a network of gift exchange, through direct contact between people in a similar adaptation, or through pastoral people being involved in the exchange system. In this exchange network not only material items were distributed but also cultural and technological knowledge (Magid 1989). This is manifested in similarities with regards to ceramics and polished stone types.

Concluding remarks

In an attempt to get more archaeological data from Agordat, a team from the University of Florida and the National Museum of Eritrea did some excavation at Kokan in 1994 (Brandt et al. 2008). The result of the excavation is published (Brandt et al. 2008) as an article in the book entitled *The Archaeology of Ancient Eritrea*. In the same article, a further comparison is provided between the decorative techniques and patterns of the Agordat ceramics with the eastern Desert of the Sudan. However, when Beldados (2006) wrote his MA thesis, the results were not available. The deposits from the excavated levels show some disturbance. The C-14 dates obtained on charcoal from the test pit gave the following result: 2255 ± 78 bp or 301 ± 70 BC Cal, however the ceramics obtained from the same level is estimated to be from around 2300 BC to 1700 BC. The authors argue for close cultural contact with groups to the west, mainly along the Nile Valley in addition to the Gash group of the Butana. This is similar to our conclusions. There is however one major difference in the recording of the flaked lithic material, which from the 1994 excavation consisted mainly of quartz artefacts. The material in Khartoum Museum consisted almost exclusively of obsidian. This can possibly be related to either Arkell not collecting the quartz or real differences in the material.

Footnote

1. In 1942, A. J. Arkell was the commissioner for archaeology in Sudan and Eritrea.

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