# ARCHAEOLOGICAL EXPEDITION AT AKSUM (ETHIOPIA) OF THE UNIVERSITÀ DEGLI STUDI DI NAPOLI "L'ORIENTALE" AND ISMEO. 2017 FIELD SEASON: SEGLAMEN AND AKSUM

Luisa Sernicola, Diego Capra, Eleonora Minucci, Università degli Studi di Napoli "L'Orientale"

Introduction (*L. Sernicola*)

In November/December 2017 the Italian Archaeological Expedition of the Università degli Studi di Napoli "L'Orientale" (UNO) and the Associazione Internazionale di Studi sul Mediterraneo e l'Oriente (ISMEO), co-directed by the late Rodolfo Fattovich, Andrea Manzo and Luisa Sernicola, conducted the twenty-third field season of investigations in the region of Aksum (Tigray, northern Ethiopia), the eighth at the site of Seglamen<sup>1</sup>.

The site, located about 15 km to the southwest of Aksum along the Aksum-Adet road (Fig.1), was first recorded and partially excavated in the early 1970s (Bernand *et alii* 1991-2000; Ricci, Fattovich 1987; Schneider 1976), and repeatedly

<sup>1</sup> Members of the 2017 expedition were Dr. Luisa Sernicola, archaeologist and principal investigator, Diego Capra, archaeologist and lithic analyst, Gabriella Giovannone, archaeologist and ceramic analyst, Eleonora Minucci, physical anthropologist, Mattia Morselli, MA student in Archaeology (Università degli Studi di Napoli "L'Orientale", Department of Asian, African and Mediterranean Studies); Friat Angesom, archaeologist, ceramic analyst and junior lecturer at Aksum University (Department of Archaeology and Heritage Management). Five MA students in archaeology and heritage management from Addis Ababa University and 18 BA students in archaeology and heritage management from Aksum University joined us for two weeks in the field in the framework of the "Italian contribution to the education sector development program (ESPD) - Post Graduate Program (PGP)", and of the affiliation program between University of Naples "L'Orientale" and Aksum University respectively. The Ethiopian Authority for Research and Conservation of the Cultural Heritage (ARCCH) was represented by Salomon Kebede, the Bureau of Culture and Tourism, Central Zone, Aksum, by Ato Aley Woldeselasie. The members of the expedition are very grateful to: Ato Yonas Desta, Head, Authority for the Research and Conservation of Cultural Heritage (ARCCH), Addis Ababa, Ato Demerw Dagne, Director, Cultural Heritage Directorate, ARCCH, Addis Ababa, Ato Gebremedhin Fitsumbrhan, Head, Bureau of Culture and Tourism, Central Zone, Aksum, the President, the Vice President, and all the Professors of the Department of Archaeology and Heritage Management of Addis Ababa University and Aksum University, Dr. Francesca Amendola, Director, Italian Cultural Institute, Addis Ababa for their kind support to the expedition. The investigation could not have been conducted without the contribution of all students, employed assistants, laborers, and helpful landowners. The expedition has been funded by the Italian Ministry of Foreign Affairs, Rome, the Università degli Studi di Napoli "L'Orientale", Naples, and the Associazione Internazionale di Studi sul Mediterraneo e

l'Oriente (ISMEO).

surveyed by members of the UNO expedition and local archaeologists within the framework of the World Bank Ethiopian Cultural Heritage Project (Fattovich, Hagos 2006). Since 2010, UNO conducts systematic research in the area and its neighboring regions, in collaboration with the Aksum University (AU). The project is aimed at investigating a 100 sq km transect along the Mai Negus/Haselo river valley, from Addi Hankara to the North of Adet with the territories around the modern villages of Medogwe, Seglamen, Merina and Adet as major areas of investigation.

Main goals of the project are to provide: 1) a reconstruction of the cultural and environmental history of the region to the South-West of Aksum, and 2) a detailed archaeological map of this region for the cultural heritage management of Central Tigray (Fattovich *et alii*. 2011, 1; 2012, 112). This transect has been selected as the Negus/Haselo river valley represented an important traditional exchange route linking Aksum and the Tigrean highlands to the Tekeze river in the South-West and, through this, to the southern regions of the Ethiopian plateau (Fattovich *et alii* 2011, 1; 2012, 112; Sernicola, Phillipson 2011, 201).

#### DESCRIPTION OF THE 2017 FIELDS ACTIVITIES

Field activities carried out in 2017 consisted of archaeological excavations<sup>2</sup> at site SG1. The site, a large pre-Aksumite centre intensively investigated since 2010 (Fattovich *et alii* 2011; 2012; Sernicola 2014; 2015; 2019; Sernicola *et alii* 2013; 2016; 2017) is located in the eastern margin of the modern village of Seglamen, at the edge of a cultivated terrace overlooking the river valley (Fig. 1). The site, extending over an area of about 7 hectares, includes the settlement, in the area of Amda Tsion, and the cemetery, in the area of Mogareb.

A test excavation was also conducted in the southern sector of the study-area, to the North of the city of Adet, where some lithic sites were recorded in 2015 (Sernicola *et alii* 2017).

<sup>&</sup>lt;sup>2</sup> As in the previous seasons, stratigraphic excavations have been conducted according to the procedures established by Harris (Harris 1979).

Finally, an excavation unit was set in the Northern Stelae Field at Aksum, nearby Enda Yasus church. The results of the excavation activities are presented in the following sections.

Excavations at Mogareb (D. Capra, E. Minucci, L. Sernicola)

In 2017, archaeological excavations at site SG1 concentrated exclusively in the area of Mogareb where the remains of the cemetery associated to the pre-Aksumite settlement had been identified and excavated since 2010 (Fattovich *et alii* 2011; 2012; Sernicola 2015; 2019; Sernicola *et alii* 2013; 2016; 2017). Eight votive deposits and 30 tombs had been identified in the previous seasons including tombs associated to stela, tombs without stela, and a cenotaph.

In 2017, a new excavation unit, SegXVII (10x10m) plus an additional strip of 2x10m (SegXVIII) were established to the North/West of the area investigated in 2016 in order to acquire additional information on the funerary practices performed at the site.

Archaeological excavations carried out at these trenches brought to the light the remains of 8 features including: 3 tombs (Tomb 31, Tomb 32, and Tomb 33), 3 undefined features (possibly disturbed ancient tombs or later pits made by looters), 1 votive deposit (n. 9), and the remains of a stone-made platform (SU 3). The latter has been only preserved in the northern sector of the excavation unit which coincides with the northernmost part of the terrace. It was made of medium and small sized basalt stones and was originally covering part, if not all the cemetery.

Tombs types include sub-circular (Tombs 31 and Tomb 32) and sub-rectangular (Tombs 33) shafts with stelae. All are single burials except of Tomb 31.

Tomb 31 consisted of a roughly circular pit 2.98m deep with a burial chamber at the bottom of the pit and an additional chamber on its western side closed by a sandstone slab. The central chamber was sealed with a stone slab on top of which a complete Black Topped Red Ware bowl was found. A sandstone stela was erected directly into the pit to mark the tomb. Both burial chambers were used for the internment of multiple individuals. When the latest deceased had to be buried, the remains of the earlier ones were accumulated along the sides of the chambers and/or put randomly in the pots of the previous funerary sets. Due to the constant reuse of

the chambers, most of the individuals were heavily disturbed, mixed-up, disarticulated and only partly preserved. Only one rather complete skeleton (SU 55) has been identified (Fig. 2). It belongs to a female adult individual (45-50 years) and it is located in the uppermost stratigraphic level of the side chamber. This is the last deceased that was buried here. Attested paleopathologies include osteoarthrosis at cervical vertebrae, left acetabulum, hands proximal and intermediate phalanges<sup>3</sup>.

Oral diseases: tartar (stages 1 - 2); caries (C - stage 2 in maxillar premolars and molars; stage 5 in  $RP_4$ ); occlusal alveolar abscess ( $RM_1$ -  $RM_2$ ); extramasticatory wear; *intra vitam* loss of  $RM_1$ -  $RM_2$ -  $LM_1$ -  $LM_2$ <sup>4</sup>.

For the remaining osteological mounds from both the central and the side chambers, establishing

<sup>3</sup> For all recorded human remains, paleopathological data were collected following the criteria of Ortner and Putschar (1981). Degenerative joint disease (DJD) and osteoarthritis (OA) are diagnosed according with Waldron (2009); classification stages of osteophyte development in the vertebral column are documented according with Snodgrass (2004) and Van De Merwe, Işcan, and L'Abbè (2006). Muscoloskeletal stress markers (MSM) or lesions are identified and scored according with Hawkey and Merbs (1995). Enthesopathy changes were recorded with the scoring method of Mariotti, Facchini and Belcastro (2004; 2007). Injuries were identified according to general categories summarized by Lovell (1997).

<sup>4</sup> Concerning dental analysis, two letters and a number classify every tooth. Right and left teeth are designated by the letters R or L, respectively. The capital letters I, C, P and M identify the permanent incisors, canines, premolars and molars. If these are shown in lowercase, the same letters denote deciduous teeth. Numbers (1 or 2 for the incisors, 1 for the canine, 3 or 4 for the premolars and the molars can be 1, 2 or 3), indicate the position that the tooth holds in the tooth row. Mandibular and maxillary teeth are indicated by subscripting or superscripting their position number. Teeth unearthed in situ are highlighted in bold. When is present just the tooth's root, its identification sequence is preceded by the letter r, in italic font. If the tooth has not yet come out from alveolar bone and it is included, "in" precede the first capital letter; whereas, in case it is in eruption, it is indicated with "er". For dental calculus (tartar) three stages of quantityhave been established, according to Brothwell (1981): 1 - 2 - 3, for a lower quantity, a medium or a copious amount of plaque on teeth surface. Carious lesions are documented with a letter referring their position (C for crown caries, R for caries at the teeth's roots and an N if they are present in the neck of the tooth) and they are scored in accordance with Hillson (1979). Dental enamel Hypoplasia (DEH) was observed as linear furrows or horizontal lines on the enamel crown (LEH). The distance of the hypoplastic defects from the cemento-enamel junction was recorded in order to determine the age of individuals at the time of hypoplasias development and it has been measured and analyzed with Goodman and Rose's methods and equations (1990). Hypoplasias were assigned to 14 half-year intervals from birth-0.5 years to 6.5-7.0 years.

a preliminary minimum number of individuals (MNI)<sup>5</sup> quite difficult but was necessary. Considering that commingled collections, in our case, result from several individuals being interred in a shared funerary structure, the identification of the MNI was calculated for the first and the second chamber, independently for adults and for juvenile subjects<sup>6</sup>. In the calculation of the MNI from the side chamber, the osteological remains found in the pots have not been taken into consideration as they were not intentionally buried there and may belong to the same individuals whose skeletal remains are attested in the chamber. Given this premise, the MNI attested in the central chamber is of one child (8.5 - 9.5 years) and 5 adults (>20 years). The MNI in the side chamber is of 1 child and 7 adults including the almost complete skeleton previously described.

Grave goods from the central chamber include: 6 complete or almost complete open bowls, 1 complete closed bowl, 4 cups, 2 bottles, 1 almost complete incense burner, and the remains of a large vase, possibly a jar, with a pointed base, large spout and filter. Bowls are Black Topped Red Ware with a red slip on the external surface. Other wares are Black Ware, Gray/Brown Ware and Red Ware. The incense burner is Red Ware with incised decoration forming a geometric pattern of bands and triangles. The bands are alternately black painted while the incisions are filled with a white paste. Stone object from this chamber consist of a vascular basalt lower grindstone (24x16.7x6.3mm) sub-ovate in plan with bi-plano profile and plano-convex cross-section (Fig. 3). The used upper surface (23x16.7mm) exhibits residues of a red pigment. The two discrete patches of staining are in areas of heavy, mostly circular, abrasion that overlies older parallel lines of abrasion. The grinding of what was probably a mineral pigment was a secondary use of the stone.

The bodies were adorned with bronze rings, ear-rings, bracelets and anklets; hundreds of beads made out of different materials were also recorded.

Grave goods from the side chamber include: 11 complete open bowls, 2 almost complete open bowls, 3 complete cups, 1 almost complete cup, 8 bottles with globular body and long cylindrical neck, 1 incense burner with vertical incisions filled with white paste and black and red painting. Bowls are Black Topped Red Ware with a red slip on the outer surface. Other wares are Gray Ware, Brown Ware and Red Ware. Also in this case a great quantity of bronze ornaments and beads has been collected.

Tomb 32 is a sub-circular shaft about 1.25m deep. The lower part of a broken sandstone stela originally marking the tomb has been found in the upper filling of the shaft. Very badly preserved human remains were recorded in the southern part of the shaft; the body was buried in contracted position; probably West-East oriented. Three Brown Ware incense burners with incised geometrical decorations filled with white paste, 3 Black Topped Red Ware open bowls, 1 Brown Ware open bowl and 5 Orange Ware cups formed the grave good of this tomb.

Tomb 33 is a roughly rectangular shaft about 1.50m deep. Part of a fallen sandstone stela has been recorded on the top of the pit. The skeleton (SU47), fairly preserved, belongs to a male adult >40 years old<sup>8</sup>. The body was intriguingly buried in extended position, West-East oriented, facing South (Fig. 4). It showed traces of enthesopathy at right clavicle, right and left humeri, left radius, ulna, tibia and femur; osteoarthrosis at distal epiphysis of left femur and marginal lipping at hands proximal phalanges, periostitis at right and left tibial and fibular diaphysis; and osteomyelitis at right fibula, in correspondence of a fracture. Evidence of trauma include misaligned healed fracture at right fibular post healed micro-fracture formation at metacarpal diaphysis, and pre-mortem fracture of labial part of RM<sup>1</sup> and RM<sub>1</sub> crowns. Definitive teeth: RM<sup>2</sup>- RM<sup>1</sup>- RP<sup>4</sup>- RP<sup>3</sup>- RC<sup>1</sup>- RI<sup>2</sup>- $RI^{1}$ -  $LI^{1}$ -  $LI^{2}$ -  $LC^{1}$ -  $LP^{3}$ -  $LP^{4}$ -  $LM^{1}$ -  $LM^{2}$ -  $LM^{3}$ - $RM_{3}$ -RM<sub>2</sub>- RM<sub>1</sub>- RP<sub>4</sub>- RP<sub>3</sub>- RC<sub>1</sub>- RI<sub>2</sub>- RI<sub>1</sub>- rLI<sub>1</sub>- rLI<sub>2</sub>-LC<sub>1</sub>- LP<sub>3</sub>- LP<sub>4</sub>- LM<sub>1</sub>- LM<sub>2</sub>- LM<sub>3</sub>

Oral diseases: tartar (1 - 2); DEH: LM<sub>3</sub> (1.43); RC<sub>1</sub> (2.88) - 1 stressing event at 6,5 years.

Almost no grave good was found associated to the deceased with the exception of few ceramics and 1 obsidian unidirectional backed crescent (14.6x5.2x2.1mm) with slight traces of use at one

<sup>&</sup>lt;sup>5</sup> It refers to the fewest possible number of people in the osteological assemblage. For these individuals, when possible, sex diagnosis (Acsádi, Nemeskéri 1970; Krogman, Iscan 1986; Buikstra, Ubelaker 1994; White, Folkens 2005), evaluation of the age of death (Brothwell 1981; Lovejoy 1985; Meindl, Lovejoy 1985) and significant morphological alterations were estimated.

<sup>&</sup>lt;sup>6</sup> With the exception of the skeleton SU 55.

<sup>&</sup>lt;sup>7</sup> Sex-determination criteria: observation of the dimorphic features of skull (eversion of the gonion region, shape of the mandibula, supraorbital margin, glabella, mastoid process, nuchal crest) and ilium (angle and depth of the greater sciatic notch).

<sup>&</sup>lt;sup>8</sup> Age estimation methods: observation of dental wear pattern and of cranial suture closure.

end. The ceramics included: 1 almost complete Gray Ware jar with incised wavy lines on the external shoulder, 2 closed cups of which 1 is Black Topped Red Ware and S-shaped profile, fragments of 8 open cups and of 4 open bowls; 2 sherds decorated with incised wavy lines. Interestingly, the fabrics and decorations of most of the ceramics from this tomb, including the almost complete jar, can be compared with the Gray Ware recorded in 2014 at Seg XV (Fig. 5) (Sernicola 2019; Sernicola, Phillipson, Fattovich 2014).

# Test excavations to the North of Adet (D. Capra)

A test excavation trench (1.5x1.5m) has been opened to the North of Adet, at 1542979 (Y), 461545 (X), on the western slope of a small terraced hill nearby the sites AD10, AD11, AD12 and AD13 recorded in 2015 (Sernicola, Phillipson, Fattovich 2017). It was aimed to find possible remains of organic materials associated to the stone tools, in order to provide absolute dating of both the sites and the lithic materials. Unfortunately, no remains of charcoal or any other dateable items have been found. This area, at present, is used as farmlands and the lithic materials spread on its surface may have been modified by animal and human trampling, ploughing and soil erosion (Tringham *et alii* 1974).

The stratigraphy includes the following SU: SU1 topsoil (*bahel*) mixed with lithics and SU2 yellow bedrock. The maximal deep of the trench is 0.30m towards the eastern side.

Flakes from surface collection and excavation are end-struck (56), have feathered termination and are slightly patinated. Eight are side-struck and moderately-heavily patinated. Differences artefacts patination may suggest differences in age, but they are not a definite indicator as patination can be affected by whether a piece was always exposed on the ground surface and by several other factors. The flakes exhibit field damages on their sides. Most of them are without cortex, except one with 100% and few examples showing cortex > 50% and < 50%. The classification of the percentage of cortex on the dorsal side of the flakes follows that proposed by Andrefsky (2005). The collected examples indicate that the earlier knapping phase was carried out elsewhere. The flakes are mostly irregular (25) and with parallel or sub-parallel sides (21). Few examples are sub-triangular (5), D- or U-shaped (4) and sub-ovate (1). A core rejuvenation flake was also found. Their length ranges between 8.0 and 59.8mm, their width between 6.2 and 69.4mm, and the thickness between 3.0 and 19.8mm. Just two flakes are thicker than 20mm. No retouched pieces were found.

Cores include 14 casual, 1 irregular and 1 blade examples. The majority of them shows two flakes removed, while few examples have one or three flake scars. The removed irregular (17) and parallel or sub-parallel sides (18) flakes are small, even if few medium and rare big examples are represented. There are also 11 core fragments or casual cores with just one flake scar. The picture given by the cores would suggest that the wanted products were of several sizes but mainly small flakes. One broken chalcedony piece showing smoothed quartz crystals seems to be similar to those coming from the settlement of Seglamen and used in hide processing (Phillipson 2013; Sernicola 2014; 2015; Sernicola et alii 2013; 2016; 2017). These materials match with those studied by Laurel Phillipson from surface collection at sites AD10, AD11, AD12 and AD13 (Sernicola et alii 2017). The only difference is that retouched flakes were not found. Unfortunately, no dating material was found. It is very relevant to date these lithic industries in order to understand the age of these southern sites. It would be appropriate to continue the investigation in this area by opening a larger trench and doing both a total collection of the artefacts and soil flotation.

## Excavations at Aksum (L. Sernicola, D. Capra)

During this season, thanks to the cooperation and support of the ARCCH and of the Bureau of Culture and Tourism, Central Zone, Aksum, a 10x10m excavation unit (MHGI) was established in the Northern Stelae Field at Aksum, in the vicinity of the church dedicated to Enda Yesus. The trench has been positioned around stela n. 34 according to the DAE inventory (Littman et alii1913; Phillipson 1997) with the purpose of collecting undisturbed dateable materials providing for chronological/cultural attribution of the burial(s) associated to this stela, which represents an attempt reproduce Aksumite palaces on funerary monoliths (Fig. 6).

Excavation did not reach the bed rock due to the paucity of time at our disposal. A series of ancient funerary features, including a possible stone platform, were partially exposed. These were clearly disturbed by a later use of the area part as a settlement and part as a modern cemetery associated to the church. Charcoal and fragments of bones from an apparently undisturbed burial placed on top of the platform have been collected for radiocarbon dating. No lithic artefacts have been recorded. The ceramics so far suggest an occupation of the area starting at least from the Early Aksumite period (50 BC - AD 150). Further investigations will be conducted during the next field seasons in order to complete the reconstruction of the occupation history of this spot and to provide a reliable dating for this funerary complex.

### CONCLUSIONS (L. Sernicola, D. Capra, E. Minucci)

Archaeological investigations conducted in 2017 at site SG1, Seglamen, added new evidence for the reconstruction of the population history of this region and opened up intriguing questions about the economy, social organization and cultural identity of the people that settled in this area during the 1<sup>st</sup> half of the 1<sup>st</sup> millennium BC.

Excavations carried out at the cemetery provided additional evidence of the funerary practices adopted at this site, bringing to the light the remains of a multiple burial (Tomb 31) with at least 14 individuals, including male and female adults, children, and juveniles, attested in the central and the side burial chambers. This is certainly the best preserved and richest among the tombs so far excavated, as suggested by the quantity of items forming the funerary set and the personal ornaments of the deceased. The lithic materials from this and the other excavated tombs does not add information to those elaborated in the previous field seasons (Phillipson 2013; Sernicola 2014; 2015; Sernicola et alii 2013; 2016; 2017), very interesting is a lower grindstone with traces of a red pigment found in association with human remains in the central chamber. If it was intentionally buried, as it would seem, it would attest the performing in this area of a burial practice attested in other African and Middle East burial contexts (Ebeling 2002; Kankpeyeng et alii 2013; Shoemaker et alii 2017; Watts 2014). This hypothesis must be corroborated by further evidence; analysis on the pigment remains are in progress.

Some preliminary inferences can also be drawn from the analysis of the human remains preserved in this tomb. The adult female buried in the upper level of the side chamber (SU55) shows several dental caries, so much severe that, in a mandibular premolar, the coronal lesion grew into the dentine and ultimately exposed the soft tissues of the pulp. Probably, several years before the death, this stage of caries caused the loss of all firsts and

seconds mandibular molars, with alveolar resorption for left teeth. Dental caries are the progressive demineralization of the enamel, cementum and dentine of the tooth by organic acids, produced when plaque bacteria ferment dietary carbohydrates and sugars. Medium levels of tartar, severe carious lesions and extra-masticatory wear (in this case, attrition, that occurs from tooth-to-tooth contact without the presence of food), suggest, therefore, a consumption of an agriculturalist diet high in carbohydrates.

Analysis of osteo-dental remains moved and scattered in both the chambers of Tomb 31 is still in progress. Considering the high number of children and subadults, the examination of Dental Enamel Hypoplasia (DEH), an aspecific indicator of stress, will be interesting to evaluate the health state of population in childhood.

An intriguing news is represented by Tomb 33. Here, unlike what so far attested at Seglamen but also in all the pre-Aksmuite and, in general, pre-Christian cemeteries of the Tigrean plateau, the deceased is buried in extended rather than contracted position. The skeleton (SU47) is afflicted by quite severe forms of infectious diseases as periostitis at right and left tibial and fibular diaphysis, and osteomyelitis at right fibula, in correspondence of the misaligned healed fracture at right fibular diaphysis. Indeed, osteomyelitis and periostitis are condition of inflammation and infections caused by bacteria that usually enter the bone with a wound or a trauma, revealing that the subject survived some years after the traumatic event. Moreover, the enthesopathy's levels observed on the upper limb bones may represent indicators of occupational stresses.

Grave good is almost completely absent, but the occurrence of an obsidian crescent and the presence of part of a stela which was originally marking the tomb suggest that this individual was presumably a member of the society. The reasons (ethnical, economic, social) of his diverse burial position open up an interesting line of research which will be explored through laboratory analysis and further field research. It is worthy to notice, at this preliminary stage, that a difference in the deposition postures of the dead is well attested at the 3<sup>rd</sup> millennium BC cemetery of the Gash Group at Mahal Teglinos, near Kassala, in Eastern Sudan (Fattovich 1995; Manzo 2006; 2017). There, the practice of using stelae to mark funerary areas is also recorded (Fattovich 1987; 1989; Manzo 2006; 2017).

Finally, the finding of the remains of a stone constructed platform (Fig. 7) which was originally covering the burial area, and into which the tombs were cut and the stelae were erected, is of major relevance. This, in fact, not only informs us about the use of a funerary feature that was not yet recorded at Seglamen, but also strengthen the cultural link already suggested by other indicators (Sernicola 2015; 2019; Sernicola et alii 2016; 2017) between the people living at Seglamen during the early 1st millennium BC and those who settled at Aksum since the mid-1st millennium BC as the practice of building up stone platforms in funerary areas is well attested in the Proto- and Aksumite cemetery at Bieta Giyorgis and in all Aksumite cemeteries in the area of Aksum (Fattovich et alii 2000).

The survey conducted in the previous field seasons in the southern sector of the study-area, mostly to the North of Adet, had provided evidence of a different settlement pattern from that attested at and around Seglamen and in the area of Aksum, with large lithic sites with no evidence of permanent structures and no traces of ceramics (Sernicola 2015; Sernicola *et alii* 2016). These could belong to probably transient, perhaps cattle herding

communities, moving seasonally in this area. A principle aim of their lithics activity was the production of unusually thick, large flakes obtained by the exploitation of the several chert exposures located close to Adet.

If these people were concomitant with the occupation at Seglamen and if they were of a different cultural tradition from the Pre-Asumites is yet to be established; unfortunately, the test excavation conducted at one of these sites during the 2017 field season did not provide any element for an absolute dating of the contexts.

Evidence for absolute dating were also searched in the Northern Stelae Field at Aksum, near Enda Yasus church, where a stela with traces of architectural decoration (n. 34 in the DAE inventory) is located. Excavations only allowed to remove the uppermost part of the archaeological stratigraphy, revealing Early and Classic Aksumite ceramics mixed to later specimens. Analysis for absolute dating from an apparently undisturbed burial are in progress. Also in this case, future research will probably contribute to answer this question.

#### References

Acsádi, G., Nemeskéri, J. (1970), History of Human Life, Span and Mortality, Budapest.

Bernand, É., Drewes, A.J., Schneider, R. (1991-2000), Recueil des inscriptions de l'Éthiopie des périodes pré-axoumite et axoumite. Introduction de Fr. Anfray. Tome I: Les documents. Tome II: Les Planches. Tome III: Traductions et commentaires, A: Les inscriptions greques. Paris.

Brothwell, D.R. (1981), Digging Up Bones, Oxford.

Buikstra, J., Ubelaker, D. (1994), Standards for Data Collection from Human Skeletal Remains, Arkansas Archaeological Survey Research Series No. 44, Fayetteville.

Ebeling, J.R. (2002), Why are Ground Stone Tools Found in Middle and Late Bronze Age Burials?, *Near Eastern Archaeology*, 65 (2), pp. 158-161.

Fattovich, R. (1987), Some Remarks on the Origins of Aksumite Stelae, Annales d'Éthiopie, 14, pp. 43-69.

Fattovich, R. (1989), The stelae of Kassala: a new type of funerary monuments in the Eastern Sudan, *Archéologie du Nil Moyen*, 3, pp. 55-63.

Fattovich, R. (1995), The Gash Group. A complex society in the lowlands to the east of the Nile, *Cahiers de recherches de l'Institut de papyrologie et d'égyptologie de Lille (CRIPEL)*,17 (1), pp. 191-200.

Fattovich, R. et alii (2000), The Aksum Archaeological Area: A Preliminary Assessment (Working Paper 1), Napoli.

Fattovich, R. et alii (2011), with contributions by Bar Kribus, Michela Gaudiello and Marco Barbarino. Archaeological Expedition at Aksum (Ethiopia) of the University of Naples "L'Orientale" - 2010 Field Season: Seglamen, Napoli.

Fattovich, R. et alii (2012), with contributions by Bar Kribus, Michela Gaudiello and Marco Barbarino. Archaeological Expedition at Aksum (Ethiopia) of the UniversitàdegliStudi di Napoli "L'Orientale" (2010 Field Season: Seglamen), Newsletter di Archeologia CISA, 3, pp. 11-128.

Fattovich, R., Hagos, T. (2006), Archaeological Survey - Report of Activity, March-May 2006 and Aksum World Heritage Site Management Plan. Technical report of the archaeological survey conducted in the area of Aksum in the framework of the Ethiopian Cultural Heritage Project - Aksum branch - Site Inventory and Documentation Component, Firenze.

Goodman, A.H., Rose, J.C. (1990), Assessment of Systemic Physiological Perturbations from Dental Enamel Hypoplasias and Associated Histological Structure, *Yearbook of Physical Anthropology*, 33, pp. 59-110.

Harris, E.C. (1979), Principles of Archaeological Stratigraphy, London.

Hawkey, D.E., Merbs, C.F. (1995,) Activity-induced musculoskeletal stress markers (MSM) and subsistence strategy changes among ancient Hudson Bay Eskimos, *International Journal of Osteoarchaeology*, 5, pp. 324-338.

Hillson, S.W. (1979), Diet and Dental Disease, World Archaeology, 11 (2), pp. 147-162.

Kankpeyenget alii. (2013), Insights into past ritual practice at Yikpabongo, northern region, Ghana, African Archaeological Review, 30(4), pp. 475-499.

Krogman, W.M., Iscan, M.Y. (1986), The Human Skeleton in Forensic Medicine, Springfield.

Littmann, E., Krencker, S., Von Lüpke, Th. (1913), Deutsche-Aksum Expedition, I-IV, Berlin.

Lovejoy, C.O. (1985), Dental Wear in Libben Population: its Functional Pattern and Role in the Determination of Adult Skeletal Age at the Death, *American Journal of Physical Anthropology*, 68, pp. 47-56.

Lovell, N.C. (1997), Trauma analysis in paleopathology, Yearbook of Physical Anthropology, 40, pp. 139-170.

Manzo, A. (2006), Funerary Stelae of Eastern Sudan in a Nubian Perspective. A Contribution to the Study of Ancient SudaneseFunerary Customs, *Cahiers de recherches de l'Institut de papyrologie et d'égyptologie de Lille (CRIPEL)*, 26, pp. 1-11.

Manzo, A. (2017), Eastern Sudan in its Setting. The Archaeology of a Region far from the Nile Valley, Cambridge Monographs in African Archaeology (94), Oxford.

Mariotti, V., Facchini, F., Belcastro, M.G. (2004), Enthesopathies - Proposal of a Standardised Scoring Method and Applications, *Collegium Antropologicum*, 28, pp. 145-159.

Mariotti, V., Facchini, F., Belcastro, M.G. (2007), The Study of Entheses: Proposal of a Standardised Scoring Method for Twenty-Three Entheses of the Postcranial Skeleton, *Collegium Antropologicum*, 31, pp. 291-313.

Meindl, R.S., Lovejoy, O. (1985), Ectocranial Suture Closure: A Revised Method for the Determination of Skeletal Age at Death Based on the Lateral-Anterior Sutures, *American Journal of Physical Anthropology*, 68, pp. 57-66.

Ortner, D.J., Putschar, W.J.C. (1981), *Identification of pathological conditions in human skeletal remains*. Smithsonian Contributions to Anthropology, 28, Washington.

Phillipson, D.W. (1997), The Monuments of Aksum. Addis Ababa-London.

Ricci, L., Fattovich, R. (1987), Scavi archeologici nella zona di Aksum. A. Seglamien, Rassegna di Studi Etiopici, 30, pp. 117-169.

Schneider, R. (1976), Documentsépigraphiques de l'Éthiopie - V, Annales d'Éthiopie, 10, pp. 81-93.

Sernicola, L., Phillipson, L. (2011), Aksum's Regional Trade: new evidence from archaeological survey, Azania, 46 (2), pp. 190-204.

Sernicola, L., Makonnen, H., Phillipson, L. (2013), with contributions by Marco Barbarino, Alfredo Carannante, Michela Gaudiello and Bar Kribus. Archaeological Expedition at Aksum (Ethiopia) of the University of Naples "L'Orientale". 2011 Field Season: Seglamen, *Newsletter di Archeologia CISA*, 4, pp. 343-439.

Sernicola, L. (2014), with a contribution by Laurel Phillipson. Archaeological Expedition at Aksum (Ethiopia) of the UniversitàdegliStudi di Napoli "L'Orientale". 2012 Field Season: Seglamen, *Newsletter di Archeologia CISA*,5, pp. 479-506.

Sernicola, L. (2015), with contributions by Diego Capra, Michela Gaudiello, Bar Kribus and Laurel Phillipson. Archaeological Expedition at Aksum (Ethiopia) of the Università degli Studi di Napoli "L'Orientale". 2013 Field Season: Seglamen, *Newsletter di Archeologia CISA*, 6,pp. 267-279.

Sernicola, L., Phillipson, L. Fattovich, R. (2016), with contributions by Assefa Getaneh, Diego Capra, Gabriella Giovannone and Rachel Moy. Archaeological Expedition at Aksum (Ethiopia) of the University of Naples "L'Orientale". 2014 Field Season: Seglamen, *Newsletter di Archeologia CISA*, 7, pp. 223-241.

Sernicola, L., Phillipson, L. Fattovich, R. (2017), with contributions by Assefa Getaneh, Diego Capra, Gabriella Giovannone and Eleonora Minucci. Archaeological Expedition at Aksum (Ethiopia) of the University of Naples "L'Orientale". 2015-2016 Field Seasons: Seglamen, *Newsletter di Archeologia CISA*,8, pp. 159-171.

Sernicola, L. (2019), Archaeological Excavations in the Area of Aksum: L. Seglamen, *Rassegna di Studi Etiopici (III Serie)*, 3, pp. 183-204.

Shoemaker A.C. (2017), Back to the Grindstone? The Archaeological Potential of Grinding-Stone Studies in Africa with Reference to Contemporary Grinding Practices in Marakwet, Northwest Kenya, *African Archaeological Review*, 34, pp. 415-435.

Snodgrass, J.J. (2004), Sex Differences and Aging of the Vertebral Column, Journal of Forensic Sciences, 49 (3), pp. 458-463.

Tringham *et alii*. (1974), Experimentation in the formation of edge damage: a new approach to lithic analysis, *Journal of Field Archaeology*, 1, pp. 172-196.

Van Der Merwe, A.E., Işcan, M.Y. L'Abbè, E.N. (2006), The Pattern of Vertebral Osteophyte Development in a South African Population, *International Journal of Osteoarchaeology*, 16, pp. 459-464.

Waldron, T. (2009), Palaeopathology, Cambridge.

Watts, S. (2014), The symbolism of querns and millstones, AmS-Skrifter, 24, pp. 51-64.

White, T.D., Folkens, P.A. (2005), The Human Bone Manual, Amsterdam.

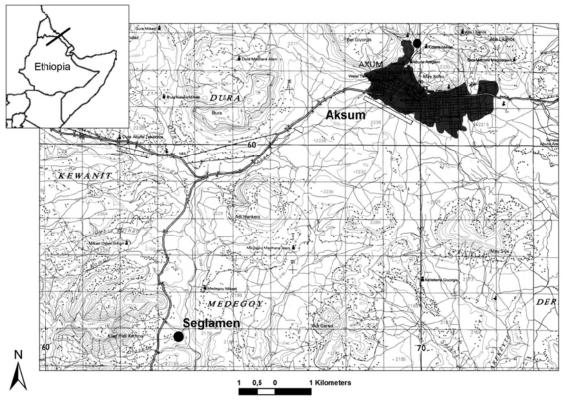


Fig. 1 - Map showing the location of Seglamen



Fig. 2 - Side chamber of Tomb 31 with the skull and the upper part of the latest burial (center left) and some of the pots with bones from the previous inumations (right)



Fig. 3 - Working surface of a lower grindstone with residues of red pigment, from Tomb 31



Fig. 4 - Skeleton in supine position at Tomb 33



Fig. 5 - Fragment of a Gray Ware pot with incised wavy decoration from Tomb 33



Fig. 6 - Excavation unit MHG I at the Northern Stelae Field, Aksum



Fig. 7 - Remains of a stone made terrace in the northern sector of trench Seg XVII