



What was the South Arabian Impact on the Development of Ethiopian Margins in Antiquity? Evolution of Settlement Patterns in the Wakarida Region from pre-Aksumite to Late Aksumite Periods

Anne Benoist, Iwona Gajda, Jérémie Schiettecatte, Ninon Blond, Sabina Antonini

► To cite this version:

Anne Benoist, Iwona Gajda, Jérémie Schiettecatte, Ninon Blond, Sabina Antonini. What was the South Arabian Impact on the Development of Ethiopian Margins in Antiquity? Evolution of Settlement Patterns in the Wakarida Region from pre-Aksumite to Late Aksumite Periods. George Hatke; Ronald Ruzicka. South Arabian Long-Distance Trade in Antiquity: "Out of Arabia", Cambridge Scholars Publishing, pp.111-153, 2021, 978-1-5275-6456-5. halshs-03134032

HAL Id: halshs-03134032

<https://shs.hal.science/halshs-03134032>

Submitted on 9 Feb 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

CHAPTER FOUR — WHAT WAS THE SOUTH ARABIAN IMPACT ON THE DEVELOPMENT OF ETHIOPIAN MARGINS IN ANTIQUITY? EVOLUTION OF SETTLEMENT PATTERNS IN THE WAKARIDA REGION FROM PRE-AKSUMITE TO LATE AKSUMITE PERIODS

Anne BENOIST
Iwona GAJDA
Jérémie SCHIETTECATTE
Ninon BLOND
Sabina ANTONINI

Introduction

The role of Sabaeen influence is often stressed in discussions of the development of ancient Ethiopian kingdoms. During the first millennium BCE, several sites of the kingdom of “Da‘mat” or “Da‘mat and Saba’” were characterized by monumental architecture, inscriptions, iconography and religious practices inspired by South Arabians (Robin and de Maigret 1998; Nebes 2010; Gerlach 2013, 2014). As a consequence, the period between the 8th and the 5th centuries BCE has been labelled the Ethio-Sabaeen Period (Anfray 1968).

In the meantime, excavations at D Site at Kidane Mehret showed the limitations of this model, since no inscriptions, no monumental architecture and no iconography were found that derive from the Sabaeen tradition, despite the fact that it is contemporary with “Ethio-Sabaeen” sites (Phillipson 2000). The site is an example of a non-Ethio-Sabaeen pre-Aksumite settlement which has prompted new discussions concerning the terminology to adopt for the 8th-5th centuries BCE: “Ethio-Sabaeen” versus “pre-Aksumite”. This issue is still pending.

Recent research has revealed a similar duality in the eastern highlands, on the eastern Tigray plateau and in Eritrea. At the sites of Matara (Anfray 1963a, 1966, 1967) or Meqaber Ga‘ewa and Ziban Adi in the region of Wukro (Wolf and Nowotnick 2010; Wolf *et al.* 2015), urban development is associated with the appearance of South Arabian cultural traits, whereas other contemporary urban settlements show no trace of South Arabian influence, for instance at several sites in the Gulo-Makeda area (Andrea *et al.* 2008) and in the region of Asmara in Eritrea (Curtis 2009).

In the following centuries, the end of the kingdom of Da‘mat and the rise of the kingdom of Aksum remain poorly known. After the 5th century BCE, inscriptions and monumental architecture are scarce. For those defending the Ethio-Sabaeen terminology, the period from the 4th century BCE to the 1st century CE was labelled the “Intermediate Period”.

Others proposed the “Proto-Aksumite Period” (Fattovitch 2000; Bard *et al.* 2014), based on the excavation of Bieta Giyorgis, near Aksum, where there is evidence for the founding of the kingdom of Aksum. However, this terminology does not encompass all the regional variations. In northeastern Tigray and Eritrea, the label “Late Pre-Aksumite Period” has been preferred because the limits of the kingdom of Aksum at its beginning are not clearly known and the kingdom might not have reached its maximal extent so early. For clarity, we propose to name the period between the 8th and the 5th centuries BCE the “Early Pre-Aksumite Period” in order to distinguish it from the Late Pre-Aksumite Period (4th century BCE-1st century BCE).

The first mention of the kingdom of Aksum, in the *Periplus Maris Erythraei*, is dated to the middle of the 1st century CE, but the history of Aksum is well known only from the beginning of the 3rd century CE until the second half of the 6th century. During this period, the kingdom of Aksum became a powerful state. The intimate relationship between the kingdom of Aksum and the South Arabian kingdoms of Saba’ and Ḥimyar, sometimes

through diplomatic exchanges but mostly by military interventions of Ethiopian armies in South Arabia, are described in South Arabian and Aksumite inscriptions. The Ethiopian and South Arabian architecture of these centuries show some common traits. However, we do not know much about the kingdom of Aksum in the 1st-2nd centuries CE, just the mention in the *Periplus* and a few archaeological finds at the site of Aksum (Phillipson 2000).

The French Archaeological mission in Eastern Tigray has been working since 2011 in the region of Wakarida, to the east of Edaga Hamus in an area of mountains sloping progressively from the Tigray plateau to the Danakil depression (Fig. 4-1). These mountains have steep slopes and deep valleys not favourable for cultivation. The region of Wakarida, with high, elevated valleys and more gentle slopes is an exception and forms a distinct topographic unit. It is a c. 8 x 6 km wide area that is nowadays cultivated. Surrounded by abrupt valleys, the Wakarida region represents a *cul de sac*, slightly apart from the main trading roads connecting the Red Sea and its hinterland.

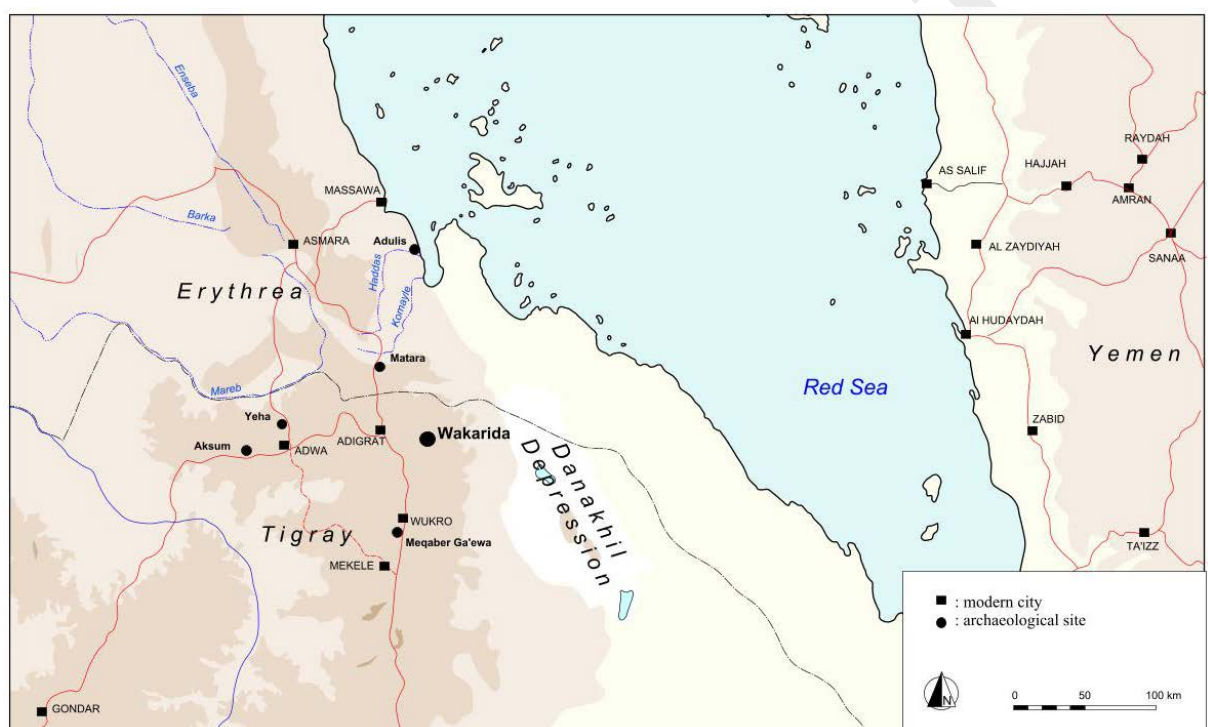


Fig. 4-1: Location of the Wakarida region (map: O. Barge).

The site of Wakarida was located in 2004 by the Tigray Culture and Tourism Bureau (TCTB) on the basis of information given by the local population, who discovered ancient remains during the preparation of terrace walls. The inhabitants found old stone walls associated with a rich material *in situ*, including pottery, anthropomorphic figurines and bones. The site was visited by the TCTB during a survey of the district by Ganta Afeshum, in the frame of a program of inventory of the archaeological heritage of the Tigray province. It was mentioned to the French Archaeological Mission as a possible place of work and visited in 2011. During that first campaign, trial trenches were opened on the site, which convinced I. Gajda and F. Dugast, directors of the mission, to initiate a research program at and around the site.

During the first years (2012-2014) research focused on the organisation and evolution of the site of Wakarida itself, where three areas of excavations were opened. At the same time, a pedestrian survey of the surrounding area was initiated by O. Barge and E. Régagnon, in order to understand the organisation and evolution of the territory associated with this small city.

248 areas with surface material were located around the site of Wakarida and were recorded in a GIS system. When visible, the surface remains (walls, buildings, possible graves and other structures) were briefly described in the geodatabase. Most of the sites, however, are only characterized by the presence of pottery sherds on surface. Many sites are hidden by vegetation, which mostly consists of acacia shrubs and cactus (*Opuntia*). Some have been partly covered by recent farm buildings. The density of pottery sherds on the surface has been estimated based on a scale of high, medium and low, and was declared indeterminate when it could not be clearly estimated. The size of the sites has been estimated according to the area of dispersion of surface pottery.

Among the sites, some showed material comparable to that of Wakarida while others differed, showing a pottery assemblage displaying *comparanda* among the regional cultures from the Early Pre-Aksumite and Late Pre-Aksumite Periods. As the results of the survey offered new perspectives on the definition of local cultures, trial trenches were opened in 2015 and 2017 at some of the pre-Aksumite sites, in order to obtain material and absolute dating from closed contexts.

In the present state of our research, three main periods of occupation have been identified in the region:

The Early Pre-Aksumite (8th-5th century BCE) and Late Pre-Aksumite (4th-1st century BCE) Periods have been identified on several sites. Both seem characterized by a local economy primarily based on agriculture.

The Middle and Late Aksumite Periods (4th-7th century CE) are characterized by the development of the city of Wakarida, with an associated rural territory including farms and hamlets.

The Post-Aksumite Period (c. 10th century CE onwards) continues down to the 12th century CE and is characterized locally by an apparent change in the way of life of local populations.

Finally, the archaeological survey was completed by an environmental study aimed at assessing the evolution of the landscape, conducted by N. Blond, N. Jacob-Rousseau and Y. Callot. It included a study of the present landscape through interviews with local families, studies of old photographs and traveller's reports, and an examination of natural sections present in the valley bottoms, during which sediments were described, sampled and sometimes dated by ¹⁴C.

I. Early pre-Aksumite and Late pre-Aksumite periods in the Wakarida region

Most of the 248 surveyed sites are of small size and many of them cannot be precisely dated either because artefacts are not diagnostic enough, or because there is, so far, no known comparison.

Twenty sites are characterised by surface material suggesting a Early Pre-Aksumite or Late Pre-Aksumite dating (Fig. 4-2: Sites n° 1, 9, 10, 32, 42, 43, 44, 76, 85, 88, 97, 98, 106, 109, 112, 118, 130, 133, 140, 190). These sites are mostly located in the southern part of the surveyed area, along the Mey Weini valley. This valley is the most easily accessible from the Tigray plateau (Fig. 4-2). The settlement pattern includes small hamlets and farms with no urban centre: 5 sites are less than 0.1 ha, 7 sites are 0.1 to 0.5 ha, 5 sites are 0.5 to 1 ha, and 2 sites exceed 1 ha, the largest being 2.4 ha (Table 4-1).

Trial trenches have been opened on three of these sites: Armengela (Site 32), Mangagebit (Site 44) and Alakile Daga (Site 42). They have provided occupation levels dated by ¹⁴C from the Pre-Aksumite and Late Pre-Aksumite Periods (Table 4-2).

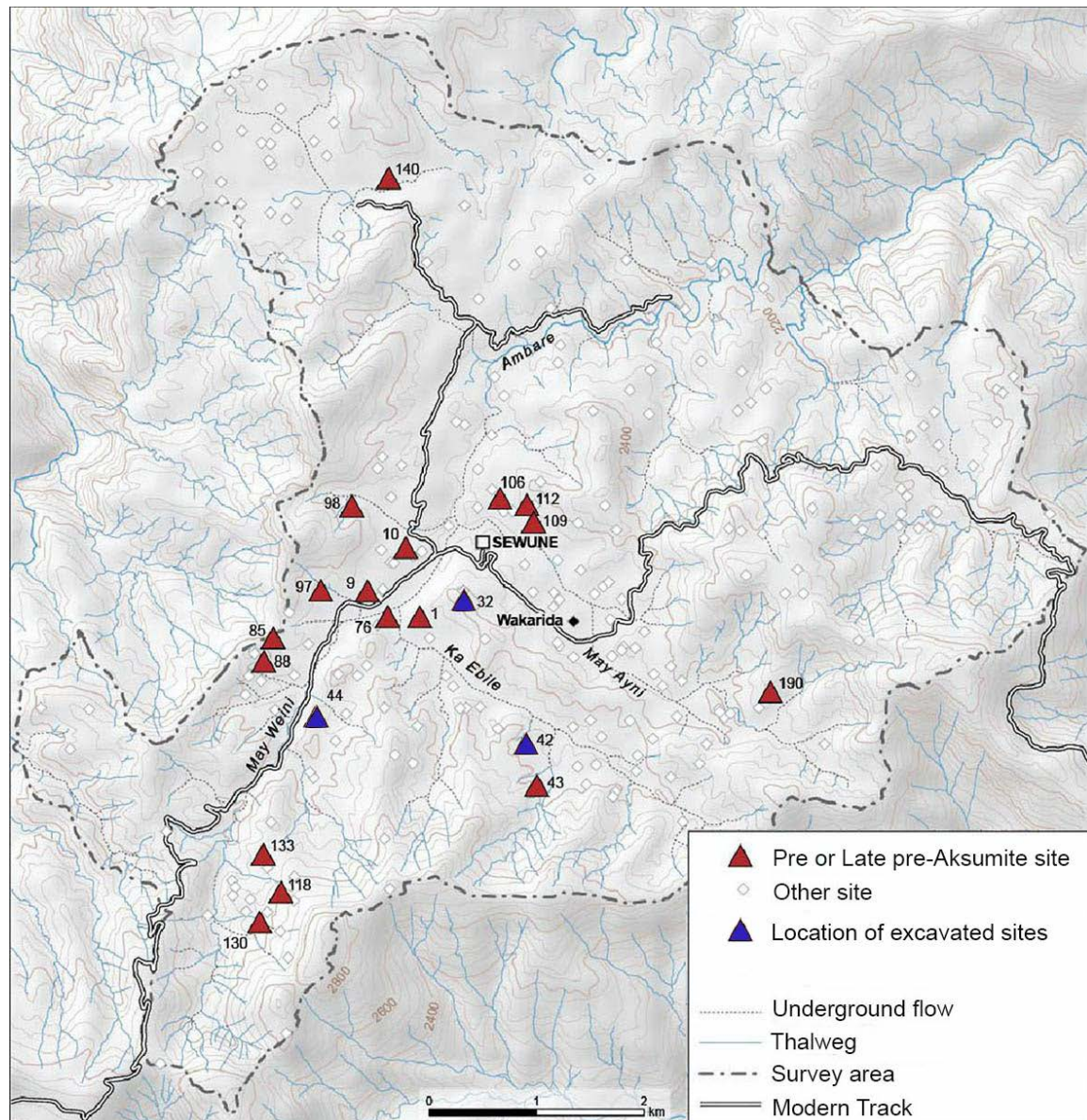


Fig. 4-2: Distribution of early pre-Aksumite and Late pre-Aksumite sites located during the survey in the Wakarida region (map: O. Barge).

At **Armengela**, three test pits were opened. In Test Pit 0, surface cleaning revealed the outline of walls belonging to a multi-roomed building, built on the hilltop. It includes a rectangular structure measuring around 4.20 by 3.70 m, oriented north-south (Fig. 4-3: room 11). It was partially hidden by a modern stone structure (St. 12). Another wall ran north-south at a distance of c. 2 m further east (Fig. 4-3: wall 9), and three other walls were built directly to the west of this structure (Fig. 4-3: walls 2, 4, 5). The walls were all made of uncut stones bedded in clay mortar. In the southwestern part of the test pit, on the slope of the hill, a deeper trench was opened revealing the outline of two older walls (Fig. 4-3: walls 3 and 8). The 14C dating obtained in Armengela comes from a small hearth associated with these two older walls, which also yielded a complete bowl (Fig. 4-7: 2).

In Test Pit 1, a midden was found lying against a wall preserved in the northern corner of the trial trench. It yielded a huge quantity of pottery mixed with bones and ashes. To the south it had been cut by recent pits.

Finally, in Test Pit 2, a house with rounded corners was partly unearthed which included two floors of compacted clay. The oldest one included a shallow hearth, with a flat stone in the bottom and three small postholes around it, that might have been used for hanging a pan

over the fire (Fig. 4-4: Hearth 207). Grindstones and small crushers were lying around that hearth. The most recent floor yielded a smaller hearth in the southern part of the room (Fig. 4-4: Hearth 201).

Site number	Size in ha	Density of surface pottery	Presence / absence of visible remains	Location
1	0.37	high	no visible remains	Ka'ebile valley, lower part
9	0.03	indeterminate	no visible remains	Mey Weini valley
10	0.01	indeterminate	no visible remains	Mey Weini valley
32	2.4	high	walls, graves	Crest between Mey Ayni and Ka'ebile valleys
42	0.65	high	walls, a building	Ka'ebile valley, upstream
43	0.64	high	walls	Ka'ebile valley, upstream
44	0.35	high	Walls	Mey Weini, east side
76	0.15	low	no visible remains	Mey Weini, east side
85	0.44	high	no visible remains	Mey Weini, western side
88	0.55	medium	no visible remains	Mey Weini, western side
97	0.71	medium	no visible remains	Mey Weini, western side
98	0.12	medium	no visible remains	Mey Weini north, tributary
106	0.02	high	no visible remains	Mey Weini north, tributary
109	0.17	high	no visible remains	Mey Weini north, tributary
112	0.03	high	no visible remains	North of Mey Ayni
118	0.13	low	no visible remains	Mey Weini south, east side
130	1.36	high	no visible remains	Mey Weini south, east side
133	0.79	high	no visible remains	Mey Weini south, east side
140	0.52	medium	walls	Mey Weini south, east side
190	0.05	high	no visible remains	Mey Ayni east, upstream

Table 4-1: Early Pre-Aksumite and Late Pre-Aksumite sites in the Wakarida region: size, density of surface pottery, presence or not of architectural remains, location (Table: A. Benoist, based on the archives collected by O. Barge).

Source: GIS Dataset, O. Barge and E. Regagnon, *French-Ethiopian Mission in Eastern Tigray*.

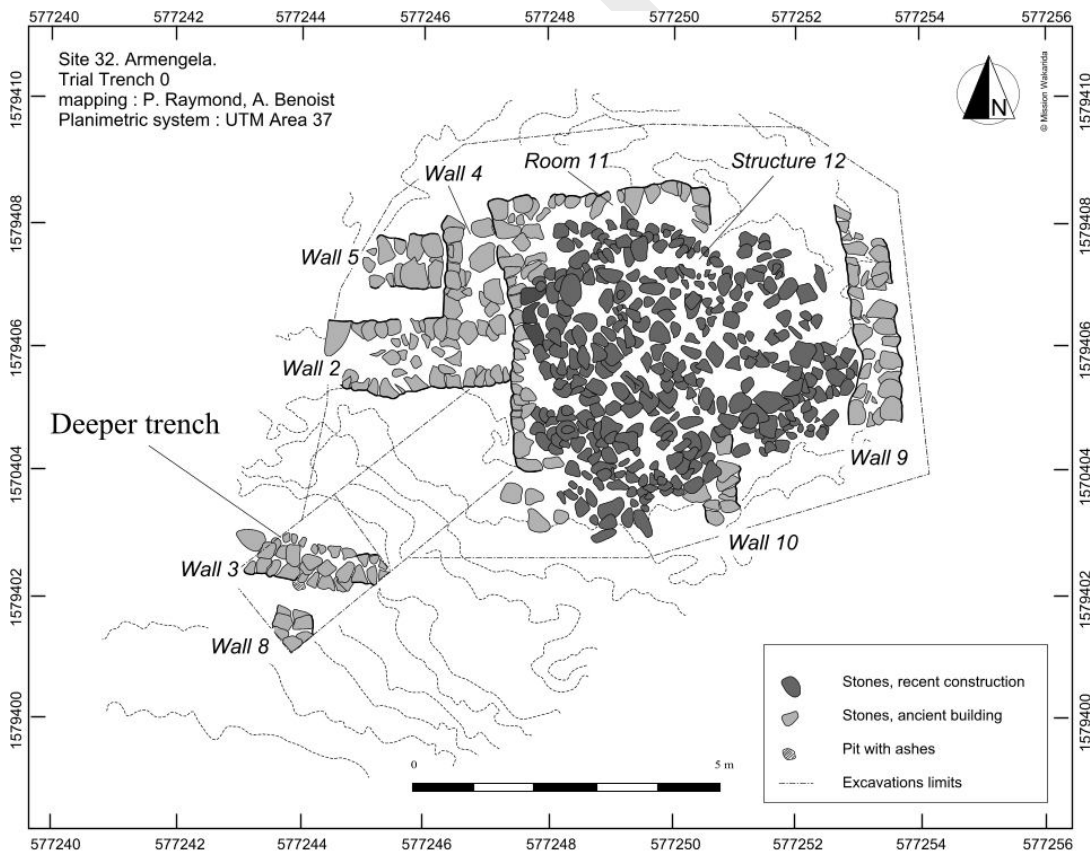


Fig. 4-3: Trial Trench 0 at Armengela (Site 32): the outline of a multi-roomed building (map: A. Benoist, P. Raymond).

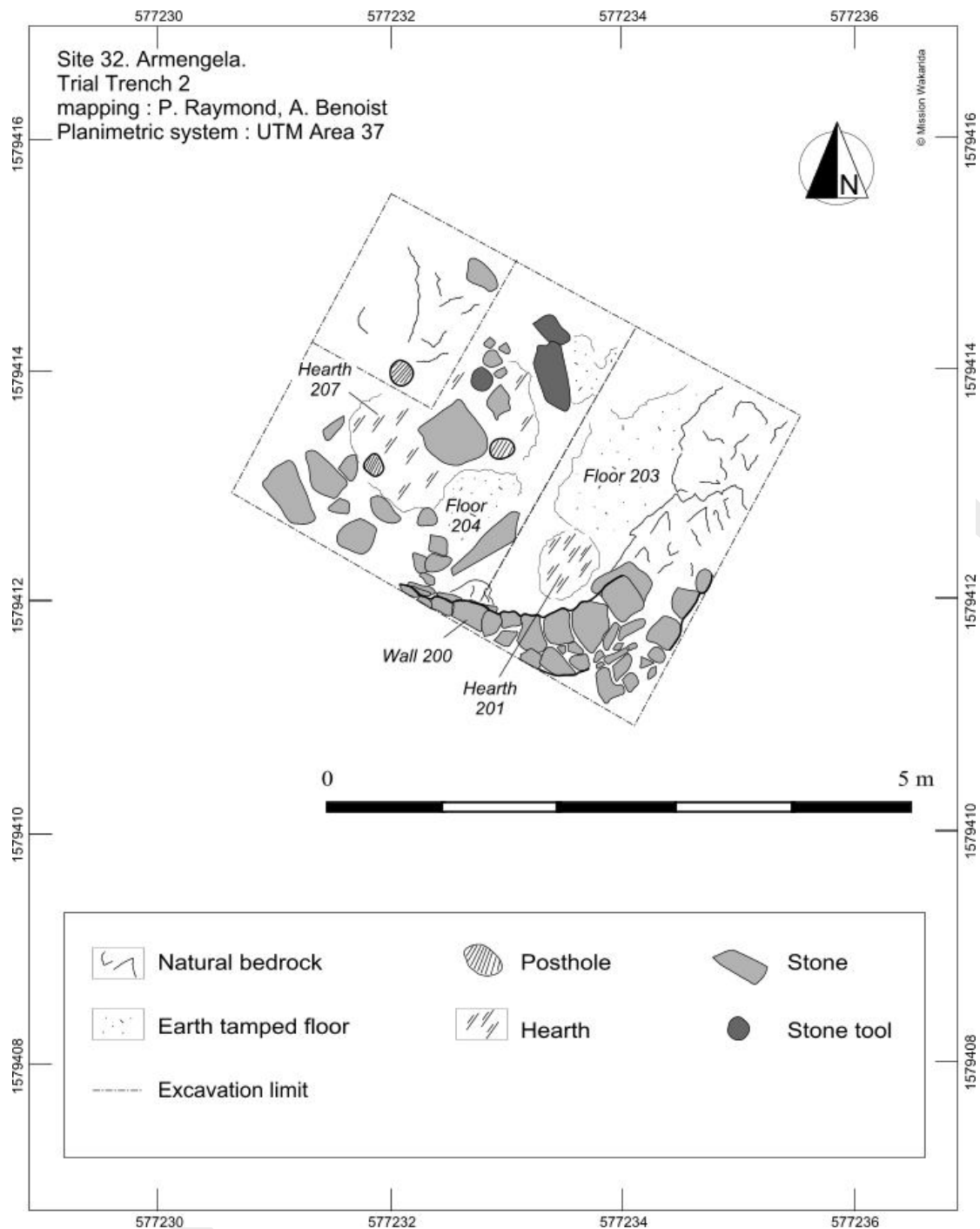


Fig. 4-4: Trial Trench 2 at Armengela (Site 32): remains of a Late Pre-Aksumite house with rounded corners (map: A. Benoist, P. Raymond).

At **Mangagebit**, two test pits were opened on the hilltop revealing the remains of a multi-roomed structure oriented north-south, of which three rooms were partly unearthed. The walls were built of large uncut stones bedded in earth mortar. They were 0.9 m thick and set directly on the bedrock. The corners were not joined. Several doors without thresholds were found. The floors were made of rammed earth and in all the rooms, two successive floors were unearthed, each one with pottery *in situ*. Above a layer of collapse covering the oldest floor, the building was partly rebuilt with slight changes (walling of a door in the western wall; opening of a drain to the west along the outside wall). A second phase of collapse sealed the occupation layers.

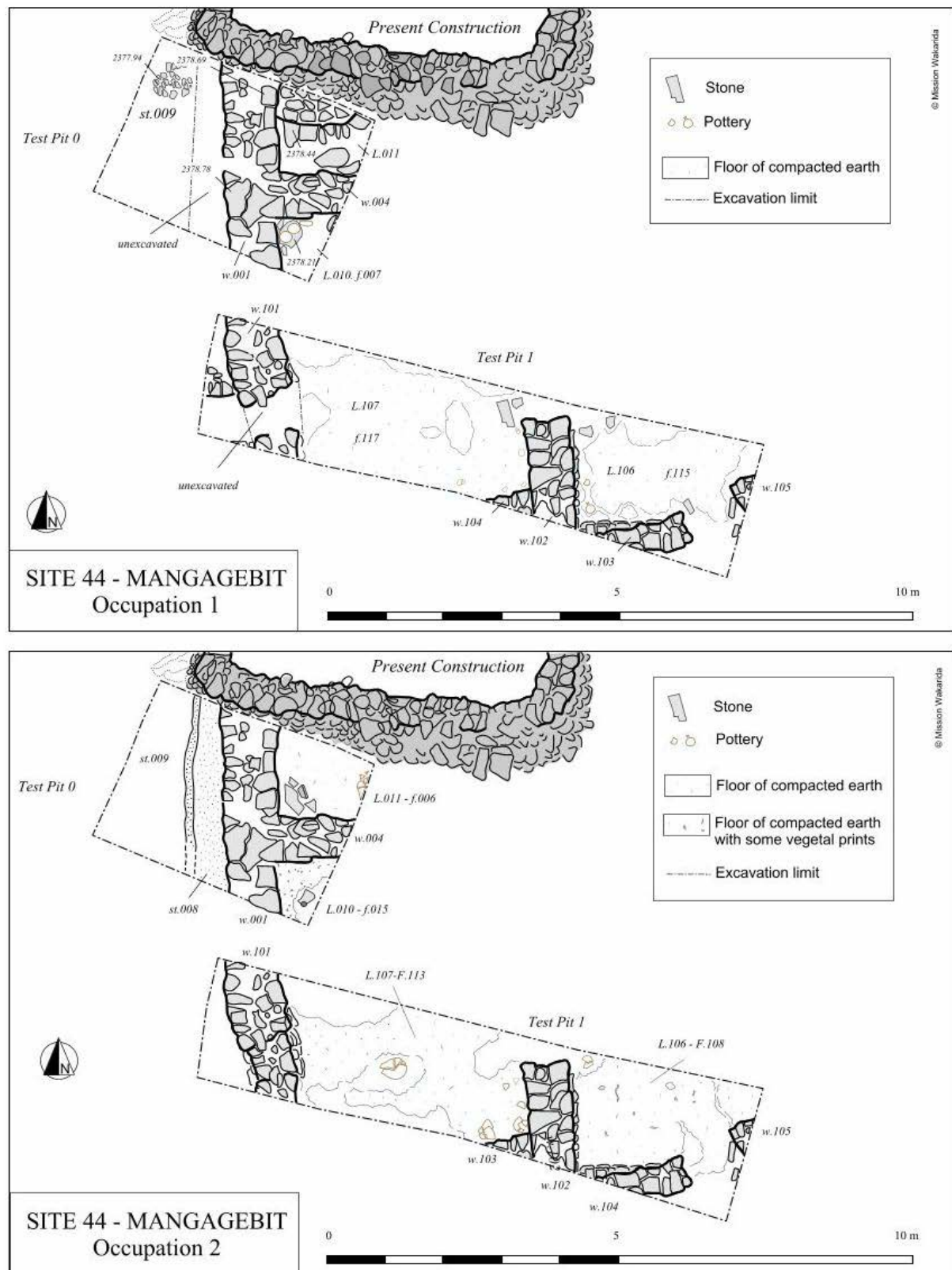


Fig. 4-5: Trial Trench at Mangagebit: Remains of a Late Pre-Aksumite multi-roomed building (maps: A. Benoist, T. Sagory).

At **Alakile Daga**, an excavation trench measuring 3 x 4 m was opened. It yielded a succession of occupation levels, including two main phases of construction. The oldest phase included a wall of large uncut stones (w. 013), bedded in earth mortar. This wall was associated with an occupation level of simple rammed earth, with a small hearth and a few pottery sherds *in situ* (F. 005). Over it was a thick layer of collapsed stones and debris, which sealed the occupation (F. 012).

The top of this destruction layer was later levelled with a filling of earth and small stones. On this surface, several successive occupation levels are characterized by layers of compacted earth, each separated by layers of loose dust (floors F. 009, F. 008, F. 020, F. 003: Fig. 4-6). From the fireplace built on floor F. 008, a charcoal sample yielded a ¹⁴C calibrated date of the 8th-5th century BCE (Table 4-2). During the period of accumulation of these floors, two walls were built (walls 001 and 002). The sequence ends with the digging of a grave along wall 002 (c. 010) and the collapse of the walls over the last occupation floors.

Site n°	Site name	Sample n°	Material	Origin	Age 14C BP	Cal. Age (2 <i>sigma</i>)	probabilities
Site 42	Alakile Daga	Ly-17834	Charcoal	US.42012	2480±30	[774 - 434 BC]	95.4%: [774 - 482 BC] ; 0.5%: [441 - 434 BC]
Site 32	Armengela	Ly-12690	Charcoal	US.32008	2230±30	[384 - 204 BC]	20.8%: [384 - 339 BC] ; 74.6%: [328 - 204 BC]
Site 44	Mangagebit	Ly-12691	Charcoal	US.44008	2245±30	[393 - 206 BC]	27.9%: [393 - 346 BC] ; 67.5%: [321 - 206 BC]

Table 4-2: ¹⁴C Dating obtained from Armengela, Mangagebit and Alakile Daga (dating made at the Centre de datations au Radiocarbone, University of Lyon 1, Lyon).

The material collected in the oldest level at Alakile Daga and at the two sites of Armengela and Mangagebit is rather similar, consisting mainly of pottery and stone tools. Pottery includes:

- jars with a globular or oval body and a concave neck (Fig. 4-8: 14-17),
- medium and small bottles (Fig. 4-7: 9-11), pots (Fig. 4-8: 12-13),
- large bowls and basins (Fig. 4-8: 3-4),
- miniature bowls (Fig. 4-8: 5-6),
- small concave lids with a central vertical handle (Fig. 4-8: 7-8).

They are made of a light red handmade ware with a simply smoothed surface, sometimes decorated with wavy line incisions or comb-incisions placed below the rim, and with notches on top of the rim. It also includes a variety of finer vessels covered with a burnished slip, red on the outside, becoming black on top, and black on the inside (Fig. 1-8: 1, 2).

These pottery vessels are comparable to examples collected on several pre-Aksumite sites from Eritrea (Curtis 2009: Fig. 1-6: b, f showing jars similar to those from Armengela: Fig. 1-7) and from northeastern Tigray (Gulo-Makeda region: D’Andrea *et al.* 2008: Fig. 1-7: B showing a wavy line decoration pattern similar to the ones encountered on the rim of our large open vessels: Fig. 1-8: 3, 4, Wukro region: Matthews and Büchner, in press: Fig. 1-8 showing jars with a concave neck). They also find parallels with the material from pre-Aksumite sites in the region of Aksum:

- D Site at Kidane Mehret: Phillips 2000: Fig. 263: g showing a bowl recalling Fig. 4-8: 2; Fig. 263: c showing a notched rim recalling Fig. 4-8: 3-4 without the wavy line decorations inside; Fig. 266: e and Fig. 267: c, showing jars recalling examples from Armengela and Mangagebit; Fig. 269: b presenting a pot recalling Fig. 4-8: 12, 13; Fig. 270: a, showing a jar with a wavy line comb-decoration of a type similar to Fig. 4-8: 14-17.
- Seglamen: Makonnen *et al.* 2013: Fig. 12, showing bowls in *Black Topped Red Polished Ware* (BTRPW), a group of fabrics recalling the red burnished ware with a slip becoming black on top outside and on the inside surface (comparable to Fig. 4-8: 1, 2).

- Tomb 3 in Area OAZ1 at Ona Enda Aboi Zwenge in Bieta Giyorgis: Bard *et al.* 1997: Fig. 5, showing pots with small handles of which two—the second on the left and the last on the right—recall Fig. 4-8: 13).

At Alakile Daga, where the material is dated to the 8th-5th centuries BCE, no element related to a Sabaean pottery tradition was found, e.g. “Torpedo Jars” (referring to van Beek’s type 4100, with an oval body, a concave neck and a very characteristic pointed base inserted into a ring or a pedestal: van Beek 1969: 256, also present at Yeha: Anfray 1963 b: pl. CXXVIII a et b). At Mangagebit, a few bowls with a ring base were found in a Late pre-Aksumite context. Although they are similar to a South Arabian pottery tradition covering the whole 1st millennium BCE (Fig. 4-9) (van Beek 1969: 100), ring bases are also attested in Ethiopia during the earlier pre-Aksumite period (Anfray 1963b: Pl. CXLI: 11) and appear in other regions. So far, the significance of such comparisons remains uncertain.



1. Kite view of the trial trench



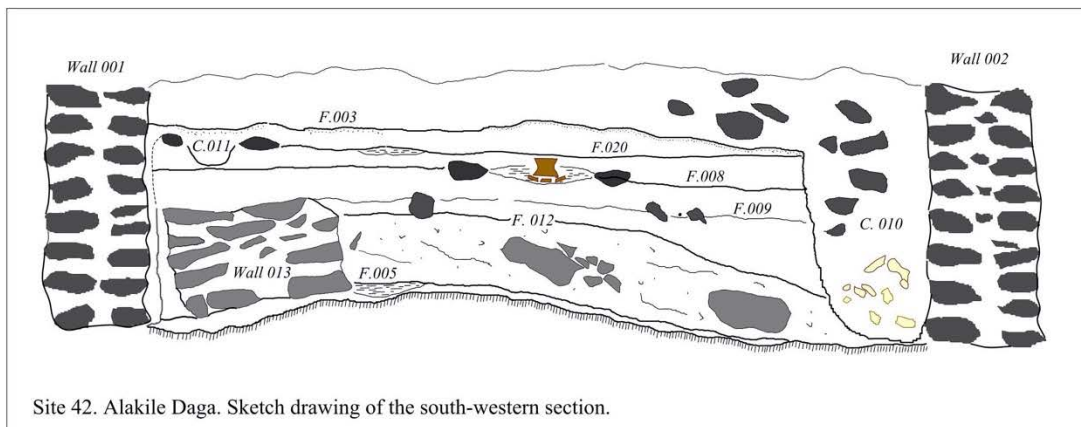
3. Detail of Fireplace F008 with pottery in situ



2 : The first occupation with wall 013, Floor 005 and layer of collapsing over it



4. View of wall W013 at the end of the excavation with wall 001 in the background



Site 42. Alakile Daga. Sketch drawing of the south-western section.

A

Fig. 4-6: Trial Trench at Alakile Daga: View of the excavation showing the walls set on the bedrock (Picture: T. Sagory) and sketch drawing of the section (drawing: A. Benoist).



Fig. 4-7: A jar from Trial Trench 1 at Armengela.

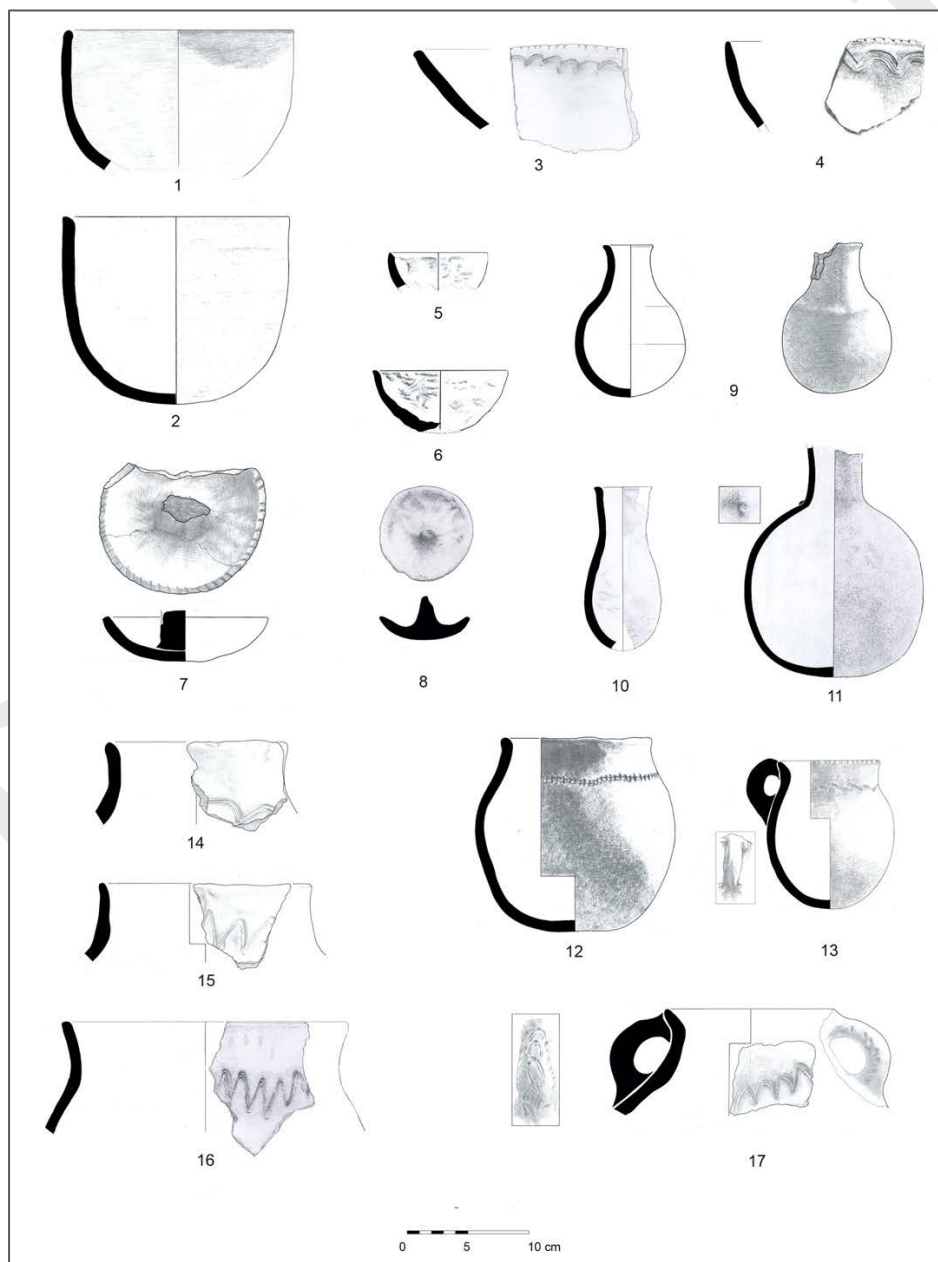


Fig. 4-8: Pre-Aksumite and Late Pre-Aksumite pottery from Alakile Daga, Armengela and Mangagebit. 1, 6, 11, 12, 13: Mangagebit (4th-3rd century BCE); 2, 4, 5, 7, 9, 14, 15, 17: Armengela (4th-3rd century BCE); 3, 8, 10, 16: Alakile Daga (8th-5th century BCE) (drawings: M. Gorea).



Fig. 4-9: A small bowl with a ring base from Mangagebit (picture: T. Sagory).



Fig. 4-10: Two clay seals collected at Mangagebit (picture: T. Sagory).

Two clay seals found at Mangagebit (Fig. 4-10) find parallels in Ziban Adi (Matthews and Büchner, in press: Fig. 8: B), at Matara (Anfray 1967: Fig. 6: 3442) and in the Aksumite levels of D Site at Kidane Mehret (Phillipson 2000: Fig. 309: c). Stone tools are remarkably numerous and diversified, including grinding stones, grinders and crushers and also hammers, scrapers and polishers, in various kinds of stone, and a set of small flakes of obsidian. Faunal remains are numerous and mainly composed of domestic caprines and cattle.

On the three excavated sites, nothing can be closely related to a Sabaeen tradition, either in the architecture or in inscriptions, and no figurines or statuettes pointing to direct exchanges were found. The material collected at the three Pre-Aksumite sites—essentially pottery, stone tools, and animal bones from domestic species—points to an economy based on agriculture and herding. The pottery recorded on the three sites fits well with potters’ traditions described in the regions of Gulo Makeda and Asmara, and the seals from Mangagebit suggest an exchange network extending on a local, maybe regional, scale. In this context, the part played by a possible Sabaeen influence on local economy and development appears insignificant. The region of Wakarida offers a similar situation to that observed in Gulo Makeda area (D’Andrea *et al.* 2008) or in the region of Asmara (Curtis *et al.* 2009), where no element suggesting any Sabaeen influence on local culture has been found.

The question of agricultural practices

The present landscape is characterised by a terracing system covering the valley bottoms and a large part of the slopes of the mountains around Wakarida. It is not without parallel in the terracing systems used in Yemen. We thus considered the hypothesis that this present landscape might be inherited from antiquity and might be a sign of the adoption by local populations of agricultural practices from South Arabia during antiquity.

The environmental study carried out around Wakarida by N. Blond, N. Jacob-Rousseau and Y. Callot included an examination of traveller’s reports and recent aerial photographs, interviews with the local population and investigations of natural sections visible in the different valleys covered by the survey, with description and sampling of sediment and ^{14}C dating of charcoals included in the latter.

In the Wakarida region, where most of the yearly rains are concentrated in one main rainy season and a second smaller one, the present re-organisation of the landscape by cultivators is intended to answer two necessities: to avoid erosion caused by water flows, and favour the penetration of water into the cultivated soils. The valley bottoms have been entirely reshaped by terraces delimited by walls running perpendicular to the axis of the valley (Fig. 4-11: 1). These walls divert water flow during heavy rainfall in order to minimize erosion of the plots. The surfaces of the cultivated fields are generally lower than the walls diverting the water flow (Fig 11: 1, 2); thus, a portion of water remains trapped in each field, while the rest continues on to the next field. Terraces built on the slopes where the latter are not too abrupt complete this system (Fig. 4-11, 2). Nevertheless, most of the walls on the slopes are “Food for Work” constructions, encouraged by the government. They are built to reduce erosion on bare slopes rather than to allow cultivation: no soil is maintained behind these walls and they do not form surfaces large and flat enough to be cultivated (Fig. 4-11, 3).



Fig. 4-11: Terraces. 1. Cultivation terraces at the bottom of Ka’ebile valley (Blond 2017: 2). Cultivation terraces on a ridge, near houses (Barge 2014: 3). Food for Work terraces to reduce erosion, along the road between Edaga Hamus and Sewne (Callot 2013).

A study of traveller's reports and old pictures suggests that the terraces are of recent date, mainly built at the end of the 20th century CE. Travellers mention a dense forest covering the area, with cultivation practiced in some places but absolutely no terraces (Andree 1869: 391; Cooke 1867: 248; De Felcourt 1911: 16, 106; Harris 1844; Markham 1868: 39, 40; Powell-Cotton 1902: 380). It is only in the mid-20th century that terraces are mentioned for the first time in Northern Ethiopia (Henze 2001: 64). An examination of a collection of aerial photographs of the region from 1964-65 and from 1994 put at our disposition by the Ethiopian Mapping Agency suggest that terracing developed between 1965 and 1994 (Blond *et al.* 2018). Interviews with local families is consistent with the study of the archives: only 20 % of the families interviewed were already cultivating their land in this area before 1974. Many of them have described a landscape of forest at the time they settled in the region.

14C dates recorded from the deposits in natural sections in the region vary from the 7th millennium BCE (May Weini valley) up to the 17th century CE (Ambare valley). Only three sections in the area have charcoal dated from the pre-Aksumite period: two are located in the upper part of the Ka'ebile valley to the southeast of Wakarida, the third one is from the valley of Damhalle, to the northwest of Wakarida. In these three sections, the base of the section is dark, with a high organic matter content. It is also older (3rd-6th millennium BCE in Damhalle, 3rd millennium BCE in Ka'ebile). These dark sediments rich in organic material are the results of natural processes of deposition in a landscape covered by dense vegetation.

Stratigraphic units with charcoals dated from the Pre-Axumite Period show alternation of fine and coarse sediments. The coarse sediments are not rounded, which suggests short-distance transportation, and these sediments might have been deposited after being transported from the slopes or the upper part of the valley. Such deposits could be the result of forest clearance, probably for agriculture, but nothing indicates that they could come from a deposit made by a water flow weakened by terracing walls along the valley bottom. Thus, the terraces that occupy today the valley bottoms probably did not exist during the Pre-Aksumite Period. It is, however, likely that the areas on the slopes around the settlements on the hilltops were cultivated. The trees on the slopes must have been cut down in order to create fields near the houses and, by doing so, the Pre-Aksumite populations probably set the sediments in motion and caused important erosion on the slopes. This could be the origin of the coarse sediments that accumulated in the valleys.

II. The Aksumite period

With one or two small exceptions, the sites located around Wakarida did not produce any surface material clearly confined to the period between the 1st century BCE and the 4th century CE (Early Aksumite and Classical Aksumite Periods, according to Bard *et al.* 2014). Thus, we face a possible gap in the regional occupation, though this gap might also reflect a lack of clear chronological markers among local assemblages during this period.¹ This will have to be confirmed by further research.

Wakarida is dated to the Middle and Late Aksumite periods (4th-7th century CE). The site is c. 9 ha in area and is nowadays cultivated and covered by terraces and fields which have partly damaged the archaeological remains, with several low mounds separated by empty spaces. It cannot be determined whether this reflects a city organized in quarters separated by empty spaces or if it is the result of surface alteration. All the outcropping walls

¹ Whereas all the documentation on the Early Aksumite Period hangs on the final publication of Bieta Gyorgis, the main part of the documentation on Classical Aksumite assemblages remains the publication of the excavations of Sir Neville Chittick by S.C. Munro-Hay in 1989. Several attempts to synthesise the evolution of material culture have been proposed (Fattovitch 2000, Bard *et al.* 2014) but detailed data regarding the evolution of the pottery assemblage during the Classical Aksumite period is still lacking, especially in Eastern Tigray.

on surface follow a same general pattern north-east/south-west or north-west/south-east, suggesting a kind of urban planning (Fig. 4-12).

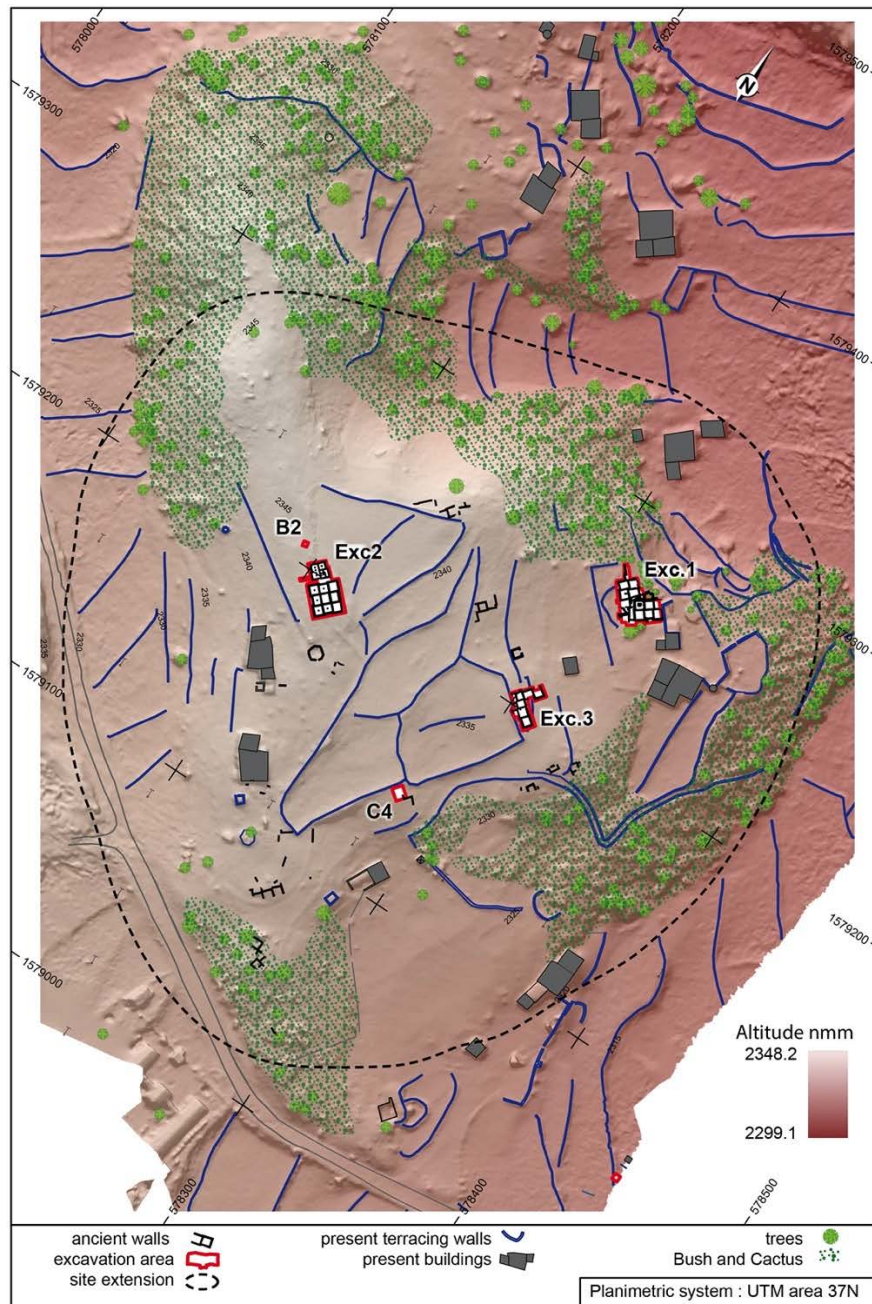


Fig. 4-12: General map of Wakarida, with location of the three excavated areas (map: P. Raymond).

Architectural remains at Wakarida

Three areas excavated between 2012 and 2014 yielded several stone structures, including prestigious buildings (Buildings A and B in Area 2, building D in Area 1) and dwellings and/or annexes more irregular in shape, although with the same general orientation. Building A in Area 2 is the most complete.

Area 2 is located on the crest of the hill in the western part of the site. Three occupation phases were identified. A first occupation phase (Level 1) corresponds to the construction of Building B and the first phase of Building C. During the second occupation, Building B was levelled and gave place to a larger structure, Building A; minor changes occurred in Building

C. The third occupation (Level 3) was suggested by tiny traces—fireplaces and postholes—dug in the ruins of the city after its abandonment.

Building A includes 3 ranges of 3 rooms each, forming a square structure measuring 12.5 x 13.5 m. The centre third of each outside wall is slightly set back from the rest. The outside walls have projections around the corners and recesses in the central part of each side (Fig. 4-13). The outside walls were constructed of limestone blocks, with dressed stones reinforcing the corners, and with steps along the outside façade, underlined by a range of limestone or schist slabs. The building was accessible to the northwest via a large central staircase with steps of schist slabs, of which 4 m are preserved.

Doors were equipped with thresholds composed of two wooden beams on each side and a central part filled with a clayish mortar that included small stones and gravels. Both ends of each wooden beam were inserted into the masonry of the walls around the door. On top of the threshold, a third wooden beam was set in the central part, forming the outline of the door frame. The wooden beams were usually 2 m long, and the door was 1.45 m wide, usually set next to a corner. The door leading to the central room of the building (Locus 5) was set in the central part of the wall and was larger than the others (1.80 m). The threshold of this door included two 4 m long beams inserted into the wall.

Most of the rooms included a central wooden(?) pillar over a stone foundation. The latter was set directly on the bedrock, below the floors, and topped with a stone slab at the level of the floor. The floors were made of a simple layer of rammed earth.

That the building was a residential house rather than a collective building is shown by the distribution of material and the presence of facilities (fireplaces, hearths and basins) in some of the rooms. The staircase gave access to a first room that was used as an entrance (Locus 1). It had three doors: a large door leading onto the central room of the building (Locus 5), and two lateral doors leading to each side of the building. The central room was probably a reception room, and included a small hearth probably used for lighting or heating the room. It was a dead-end space, with almost no material.

To the northwest, the entrance (Locus 1) gave access to a series of three rooms, of which the two last (Loci 3 and 4) might have formed a kitchen with an outbuilding. They included stone structures forming small platforms or small basins, and each one also had an elaborate fireplace with a stone edge. They yielded a large quantity of material, including several large open vessels.

To the southeast, the entrance (Locus 1) led into a room half-occupied by a massive stone structure, which might have been the base of a staircase (Locus 6). This room also gave access to three other rooms, Locus 7 in the central part of the south-eastern side, Locus 8 at the southern corner and Locus 9 in the central part of the south-western side. These rooms included a floor with one or two hearths characterized by patches of ash in Rooms 7 and 8, with two small fireplaces surrounded by a stone wall in Room 9. The pottery collected in these three rooms was relatively scarce on the floors, but was particularly abundant in the destruction layer that covered it. It included jars and suspension vessels. This area to the southeast of the building might have included a storeroom to which the staircase in Room 6 led. Whether it comprised a sort of mezzanine, a first floor covering a part of the building or was simply installed on the roof is as yet uncertain.

Building A was erected on top of an older, smaller structure: Building B. Only its foundations were preserved and the function of each space is less clear. However, it already had the same orientation and the same shape with three ranges of three rooms.

Building C was excavated to the northwest of these two successive buildings (Fig. 4-13) and was built during the first occupation of the area, at a time when Building B was still standing. The excavated part had a long rectangular room, including a range of four stone post bases and a floor of rammed earth to the southwest (Locus 12), and two square rooms of

unequal size along the northeastern side (Loci 13 and 18). At the northern corner of the smallest square room, a wall continued further north, suggesting that the excavated area might be part of a larger structure. When Building A was built over Building B, Building C remained in use with some modifications. A large fireplace was set in the centre of the rectangular room and the eastern room was divided into smaller spaces, one including a staircase, of which two steps are still preserved (Locus 14).



Fig. 4-13: Map of level 2 in Area 2, showing Building A and the second state of Building C (Map: J. Charbonnier).

Two other excavation areas were opened in the eastern part of the site, at a lower level of the hill. In Area 1, two successive levels of construction were found. The oldest (Level 1) included the remains of a thick wall to the east, that might have been the limit of an important building that was later destroyed. It was bordered to the north and to the west by a pathway along which a first settlement area extended, including at least three rooms (Loci 6 and 11, cf. Fig. 4-14; Locus 17, later covered by Building D) and a large courtyard with a drain (Locus 18, later covered by Loci 3 and 4; cf. Fig. 4-14). The floors of the rooms were not preserved, but one (Locus 6) may have had a wooden floor accessible by a staircase, which was covered during the second occupation. Some material was still preserved in the courtyard, including a complete buried jar.

During a later phase of construction, Building D was erected in the eastern part, covering the limit of the first possibly important building and extending to the west over the first pathway and the eastern end of the ancient settlement area. Building D was an elaborate structure bordered by stepped walls underlined with slabs of schist, and including six rooms symmetrically arranged in two rows of three rooms (Fig. 4-15). Unfortunately, it had been reused and damaged by the farmers living on the site, who used it for making a cistern, and it did not produce any material. One of the rooms still included the base of a large squared stone pillar, probably supporting a wooden floor (Fig. 4-14: Locus 8).

A new pathway was installed along the southwestern and northwestern walls of Building D (Fig. 4-14: Locus 1). Both ends of this pathway were subsequently blocked when a seventh room was added to Building D, forming an entrance (Fig. 4-14: Locus 14). To the northwest and southwest of the new pathway, the ancient dwelling continued to be used, with some alterations.

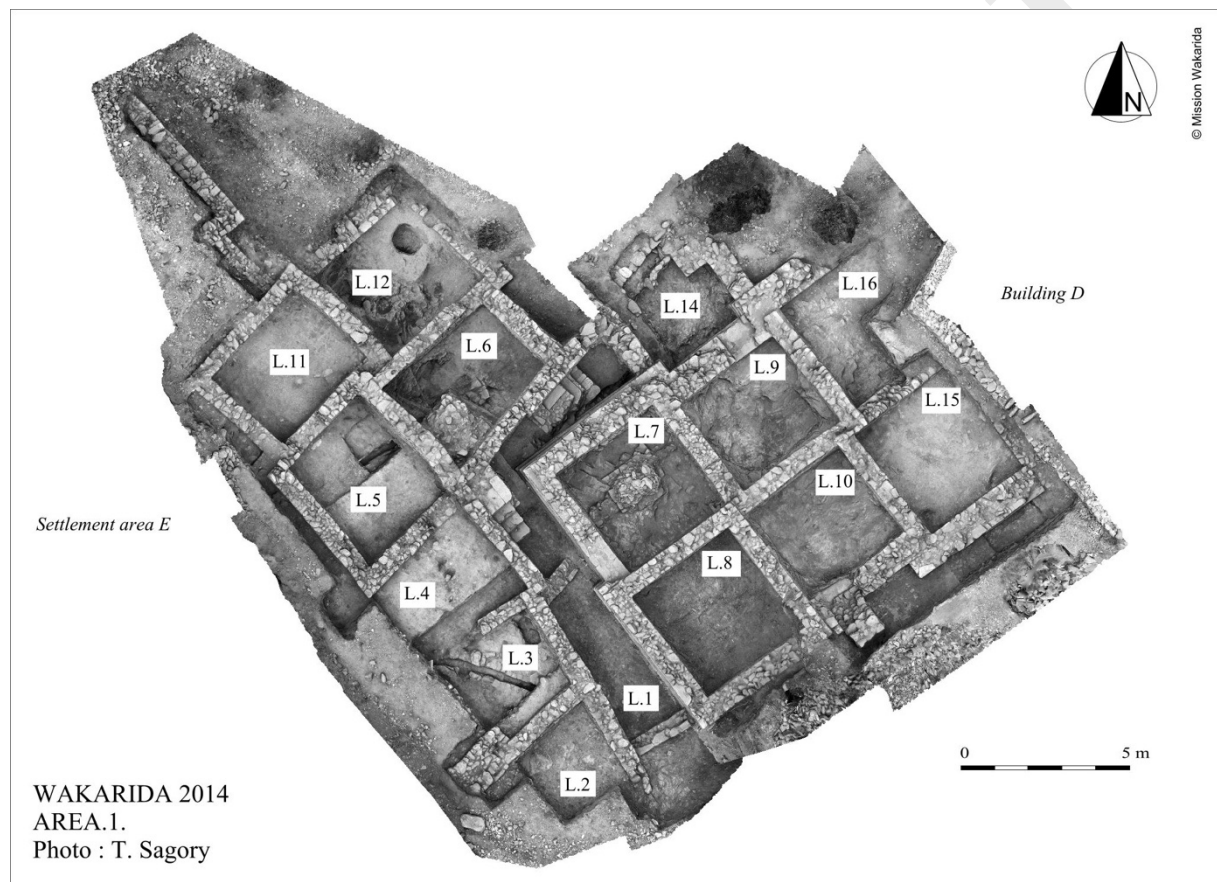


Fig. 4-14: View of Area 1 during 2012 excavations, showing the stepped walls of Building D to the right and the settlement area to the left (Photo: X. Peixoto).

To the northwest, a new staircase was built for access to Locus 6, which was still in use and still included a wooden floor. Under the latter was a cellar with a floor just over the bedrock. seven cavities were dug in the floor of the cellar, inside which jars were buried, some covered with a lid made of a schist slab (Fig. 4-16: 1). To the north, a nearby room (Locus 12) also had a floor installed over the bedrock with some cavities including jars, but there is no evidence that would suggest the existence of a wooden staircase in this room (Fig. 4-16: 2). To the west of Locus 6, Locus 5 yielded a floor of rammed earth with a few pottery sherds and some stone tools.



Fig. 4-15: A view of Area 1 at the end of the 2013 campaign, showing the stepped walls of building D (Photo: X. Peixoto).



Fig. 4-16: Buried jars in Area 1. 1: Locus 6; 2: Locus 12. (Photos: X. Peixoto).

To the south, the large courtyard already in existence during the previous period was still in use. It was divided into two adjacent spaces by a wall (Fig. 4-14: Loci 3 and 4). Several installations, including fireplaces and a basin delimited by stone slabs set vertically, were found in this area, together with stone tools and a huge quantity of pottery, including bowls, basins, braziers and fragments of jars, which tend to suggest that several activities took place in this area. To the south of the courtyard, a last room, Locus 2, yielded a floor of rammed earth with a few pottery sherds.

A third excavation area was opened in 2014 to the southwest of Area 1, in a place where walls were visible on the surface (Area 3). Again, two levels of construction were found. The oldest one has been totally levelled, and is only characterized by the foundations of two walls (Level 1). A second occupation level (Level 2) included Building H, which was only partly excavated. It had two rows of four rooms in the southwestern part and a row of two additional rooms to the northeast (Fig. 4-17).

Building H also included architectural elements characteristic of the Aksumite period. The ground was not prepared before the construction, and the building was simply adapted to the natural slope. The walls were built on solid foundations set directly on the bedrock, consisting of uncut stones of medium size bedded in a clay mortar. Dressed stones were used at the corners. Some walls, likely the outer facades, presented a face with steps underlined by a very regular layer of slabs of schist. Stepped walls have been identified along the southeastern wall of Locus 1, along the southwestern wall of Locus 3, and along the southeastern wall of Locus 8 (Fig. 4-17); they were likely to be the outer walls. Less regular stepped walls underlined by a layer of slabs of schist have also been found on the face of inner walls and in some rooms there were traces of white lime on the walls. In one room (Locus 8), the remains of a floor included lime. Doors probably had high thresholds but none were found in place, although walls were preserved up to 1 m.

The construction of Building H occurred in two steps: in the first phase (Level 2A), Loci 1, 2, 3 and 4 were built. Occupation layers are partly preserved from that first period in Loci 2 and 3. They consist of a thin layer of compacted earth mixed with gravels, with a few potsherds *in situ*. In the centre of Locus 3, a stone post base was found, with a strong stone foundation set directly on the bedrock and a flat top made of a slab of schist, slightly higher than the floor. In Loci 1 and 4, occupation layers dated to this period have been destroyed. Only Locus 1 yielded remains of a drain and some cavities dug in the bedrock (Fig. 4-18: 1).

Three jars belonging to Level 1 or 2A were found buried in small cavities dug in the bedrock, below the first occupation floors of the building (Fig. 4-18: 3). Two were below the floor under Locus 8. They both included remains of newborn babies, one with its skull still connected (Fig. 4-18: 4), the second more disturbed. A third jar was buried in the bedrock below Locus 2 but did not produce any bone. The three jars were covered with slabs of schist.

During a second phase of construction, the building was extended to the northeast and southwest by the addition of Loci 6 and 7 to the southwest, and 8, 9 and 10 to the northeast, forming an alignment perpendicular to the row of Loci 1, 2 and 3 (Fig. 4-17). In each room, two layers of occupation can be broadly attributed to this second construction phase (Levels 2B and 2C).

Level 2B was characterized in Loci 1, 2, 8, 9 and 10 by the remains of a floor of compacted earth with gravels, generally associated with potsherds varying in quantity from one locus to another (Fig. 4-17). To the southeast, Locus 5 was probably still an outside space. It included a few potsherds and a large grinding stone associated with a small rounded grinder or crusher. In Locus 6, Phase 2B included a small oval basin whose walls were partly built with reused grinding stones. It was filled with a mixture of lime and ashes, and all the floor around was partly covered with lime. This basin might have been used for preparing plaster that could be spread on some of the walls or floors. In Locus 7 was found a loamy

occupation floor with a complete jar in a corner, covered by a lid of schist and still containing a few badly preserved bones (Fig. 4-18: 2). To the northeast, Locus 9 included a small hearth set on the clay floor and a small complete bowl lying in its vicinity. Locus 10 yielded a complete jar, found empty, and an alignment of stone slabs set along the southeastern wall, which might be the remains of a staircase. In Locus 8, a few pottery sherds were found on the floor, with a complete shallow bowl. In the northern part of the room, the remains of a badly preserved stone structure were present across the section.

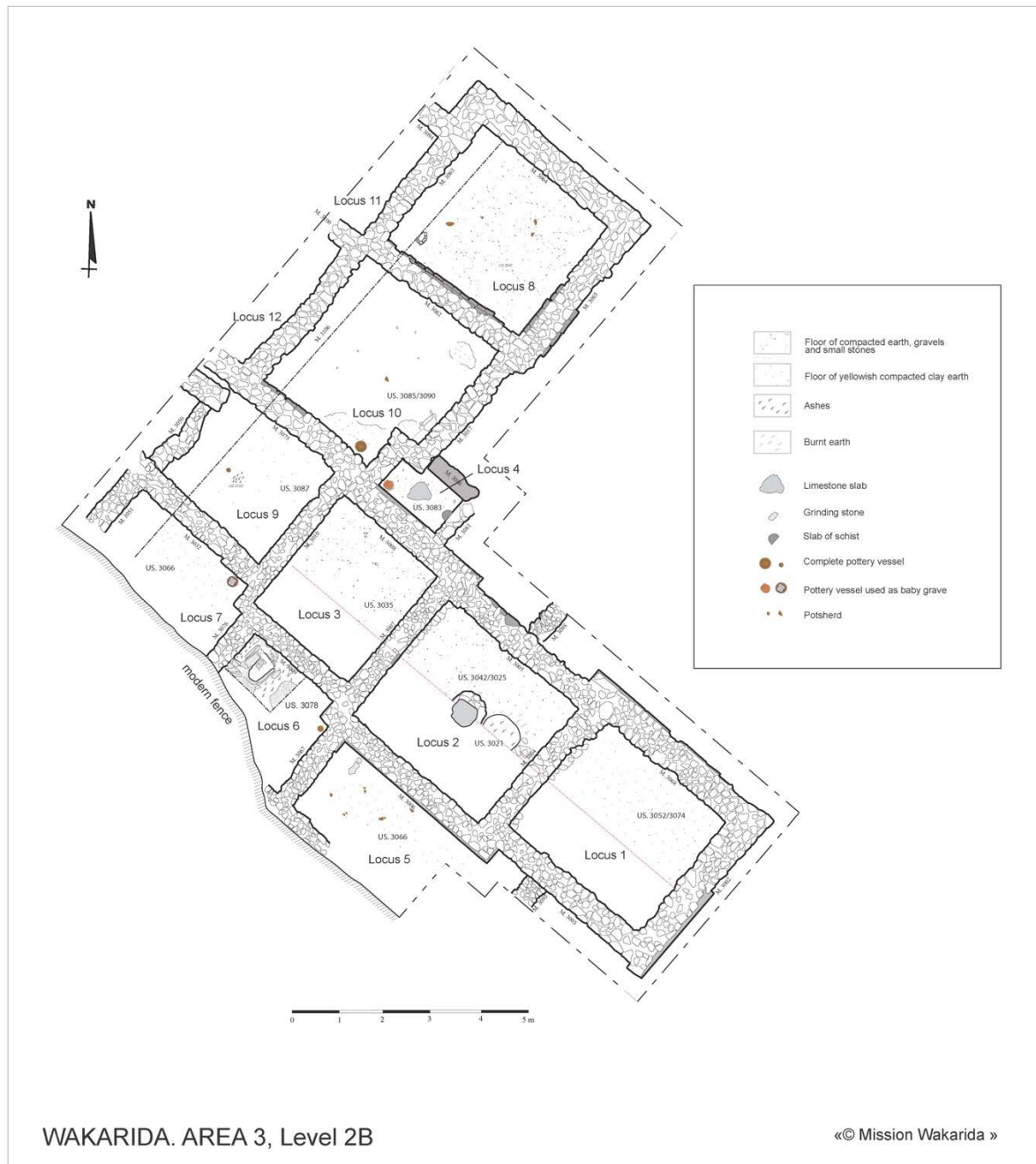


Fig. 4-17: Plan of occupation 2B in Area 3 (map: B. Riba, A. Benoist).

Level 2C was indicated by the installation of new compacted floors of earth or of a whitish mixture of clay and lime. Material was more abundant, including pottery, stone tools and bones, as well as a few objects including figurines, fragments of a small iron chain and an agate Sasanian seal engraved with a horse, found on the top of the last occupation layer in Locus 6 (Fig. 4-21: 1).



Fig. 4-18: Area 3, Levels 1 and 2A: Structure and potteries. 1: Below Locus 1: Level 1: Drain and cavities dug in the bedrock. 2: Locus 7: Level 2B: Jar with a slab of schist. 3: Locus 8: below the earliest floors: Two jars buried in cavities dug in the bedrock after removal of their lids. 4: Below locus 8: Connected skull of a newborn in a jar. Photos: B. Riba.

Finally, a large quantity of pottery was found in the lower part of the thick collapse layer that covered the area. Above the collapse, a thin layer included traces of hearths and ashes belonging to a later occupation.

Three ¹⁴C analyses were obtained from occupation levels associated with the city or with its re-occupation above the destruction layers:

- Area 2, Level 2: sample dated to 245-389 cal-CE (Table 4-3: Ly-16201). This date seems older than the associated material. We do not preclude an old wood effect.
- Area 1: sample dated to 350-537 cal-CE (Table 4-3: Ly-16202).
- Area 2, Level 3: re-occupation level over the destruction: sample dated to 1026-1158 cal-CE (Table 4-3: Ly-17168).

Sample n°	Material	Origin	Age 14C BP	Cal. Age (2 sigma)	probabilities
Ly-16202	Charcoal	Area 1 Level 2B	1625±30	[350 – 537 AD]	3,4 % [360 - 368 AD] 92% [380 – 537 AD]
Ly-16201	Charcoal	Area 2 Level 2	1727±25	[245 – 389 AD]	95,4% [245 – 389 AD]
Ly-17168	Charcoal	Area 2 Level 3	945±30	[1026 – 1158 AD]	95 % [1026 – 1158 AD].

Table 4-3: ¹⁴C dating from Wakarida.

The material from Wakarida

The material collected in the different layers includes:

- A large quantity of grinding stones, attesting to the transformation of agricultural products;
- Animal bones, mainly from domestic caprines and bovids;
- Animal figurines, mainly cattle, suggesting that agriculture and herding still played a central part in the local economy during this period.

Pottery was also abundant and finds parallels in the Middle and Late Aksumite assemblages in Aksum and Matara:

- Globular short-neck jars, globular bowls and pots (Fig. 4-19: 5, 7);
- Small globular neck-jars (Fig. 4-19: 6);
- Bowls with a ring-base (Fig. 4-19: 3);
- Large basins with an everted rim (Fig. 4-19: 8, 9);
- Bowls with a projecting rim often decorated with incisions impressions of decorations in relief appliqué on top of the rim in common or fine red ware (Fig. 4-19: 4, 4);
- Basins with two plaques fixed to the bottom (Fig. 4-19: 10, 11).

Fine vessels include:

- Polished ware decorated with black painted designs, sometimes underlined by thin incisions (Fig. 4-19: 1, 2). Among the most common designs appearing on these vessels is the Christian cross motif (Fig. 4-19: 2).
- Suspension jars with a common fabric, decorated with geometrical incisions covering all the upper part of the body (Fig. 4-20), more frequent in the latest levels. This pottery finds an echo in Aksum and Matara and reflects a higher integration of the site within regional exchanges.

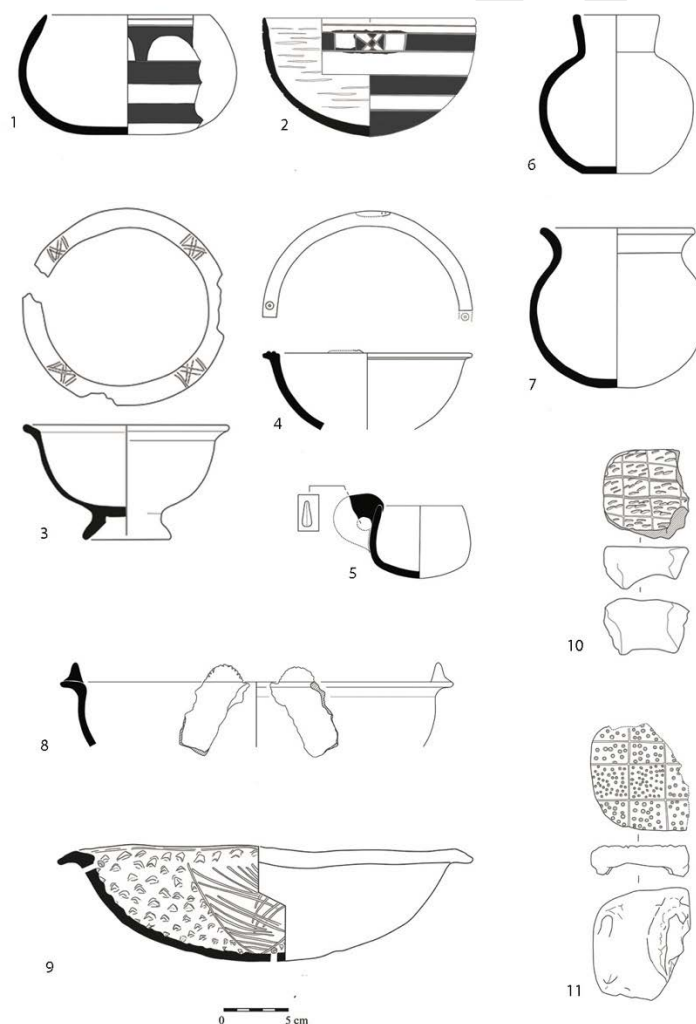


Fig. 4-19: Middle and Late Aksumite pottery from Wakarida (Drawings: C. Verdelle, V. Bernard).



Fig. 4-20: Suspension jars in common incised ware, a group developing in the last occupation levels of Wakarida (Photos: C. Verdellet, X. Craperi).

Other evidence highlights the higher integration of the site into the interregional trading network:

- A few fragments of ribbed amphorae of a type that is common along the Red Sea (Fig. 4-21: 4, 5. See Fig. 4-20: 6 for a complete example);
- A bead in *millefiori* glass, of Roman origin (Fig. 4-10: 2);
- A semi-globular Sasanian seal in agate with a small engraved horse (Fig. 4-21: 1), whose exact parallel can be found among Sasanian seals collections kept at the British Museum.²

A small, finely carved limestone statuette of a naked woman collected in Area 2 (Fig. 4-21: 3) can be compared to a statuette from Matara, dated from the 6th-8th century CE (Anfray 1967: Pl. 7, Fig. 3). The statuette from Wakarida wears a necklace, with a large ornament on the back of the figure that seems to be designed to offset the heavy pendant on the front. The necklace is reminiscent of a jewel depicted on a statue of a seated woman found at Hawlti (de Contenson 1962: 65-6, Pl. V-VI), itself deriving from South Arabian traditions.

Coins were found in several layers. They include an anonymous coin from the 4th century CE (Fig. 4-21: 6), an Aksumite coin of king MHDYS (5th century CE), and two Aksumite coins of king Ioel (6th century CE) (Fig. 4-21: 7).³

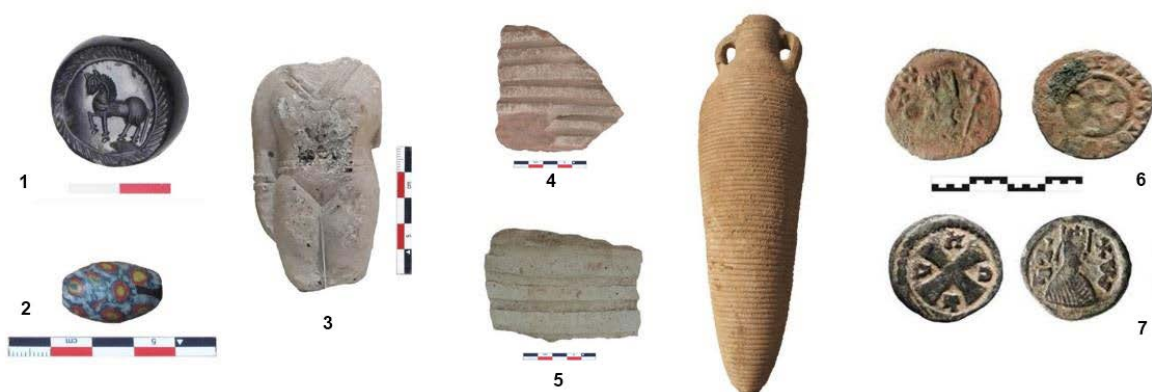


Fig. 4-21: Artefacts from Wakarida. 1: Sasanian seal in agate. 2: Bead in *millefiori* glass. 3: Limestone statuette. 4, 5: Two sherds of ribbed amphorae from Wakarida. 6, 7: Two coins from Wakarida. 6: coin of an anonymous king (4th cent. CE). 7: coin of the king Ioel (6th century CE).

² According to Rika Gyselen, who studied this object. Reference: BM EC7, cf. D. H. Bivar, *Catalogue of the Western Asiatic Seals in the British Museum. Stamp Seals. II: The Sasanian Dynasty*. London 1969: 77, Pl. 12: EC7.

³ Coins studied by Dr. Peter Kowalewsky, Gesellschaft zur Förderung von Museen in Äthiopien.

Rural territory around the city

The site of Wakarida was surrounded by a territory containing at least 34 farms, hamlets or villages, organised in small groups along the Mey Ayni and Ka’ebile valleys (Fig. 4-22: Sites 14, 15, 17, 22, 25, 30, 42, 48, 49), in the southern and northwestern part of the Mey Weini valley (Fig. 4-22: Sites 8, 36, 39, 82, 99, 100, 113, 114, 120, 128, 131, 137, 138, 174, 175, 176, 187, 192, 200), and in the northeastern part of the surveyed area (Fig. 4-22: Sites 143, 148, 150, 153, 156, 157). Compared with the occupation during the Early Pre-Aksumite and Late Pre-Aksumite Periods, the Late Aksumite occupation was more widely distributed and could show an extension of the regional occupation. The hierarchization of the settlement pattern increased with the appearance of a 9-ha urban centre, Wakarida. The number of very small sites is also higher than during the previous periods (20 sites are less than 0.1 ha and 11 are 0.1 to 0.5 ha wide), while the number of “medium” sites (0.6 to 1 ha) diminished (2 sites) (Table 4-4).

Site number	Size in ha	Density of surface pottery	Presence / absence of visible remains	Location
0 (Wakarida)	9.13	high	walls, buildings	Mey Ayni valley
8	0.07	indeterminate	no visible remains	Mey Weini valley
14	0.04	medium	walls	Ambare valley
15	0.12	low	no visible remains	Ambare valley
17	0.20	medium	walls	Ambare valley
22	0.13	medium	walls	Crest between Mey Ayni and Ka’ebile
25	0.02	medium	graves	North of Mey Ayni
30	0.05	low	No visible remains	Crest between Mey Ayni and Ka’ebile
36	0.90	medium	graves	Damhalle
39	0.10	high	no visible remains	Crest between Mey Ayni and Ka’ebile
42	0.65	high	walls, a building	Ka’ebile
48	0.08	low	walls	Mey Ayni valley, upstream
49	0.04	medium	no visible remains	Mey Ayni valley, upstream
82	0.03	medium	no visible remains	Mey Weini south, east side
99	0.18	medium	graves	Damhalle
100	0.03	medium	no visible remains	Damhalle
113	0.12	high	graves, walls	Mey Weini south, east side
114	0.23	low	no visible remains	Mey Weini south, west side
120	0.23	medium	no visible remains	Mey Weini south, east side
128	0.29	high	no visible remains	Mey Weini south, east side
131	0.78	high	no visible remains	Mey Weini south, east side
137	0.24	low	no visible remains	Mey Weini south, western tributary
138	0.04	high	no visible remains	Mey Weini south, west side
143	0.13	medium	no visible remains	North east end of survey area
148	0.09	medium	walls	North east end of survey area
150	0.06	low	no visible remains	North east end of survey area
153	0.08	low	no visible remains	North east end of survey area
156	0.04	low	no visible remains	North east end of survey area
157	0.02	low	no visible remains	North east end of survey area
174	0.07	low	no visible remains	Northern end of survey area.
175	0.04	low	no visible remains	Ambare
176	0.07	high	walls	Ambare
187	0.10	low	no visible remains	Northern end of survey area.
192	0.03	low	no visible remains	Ambare, western tributary
200	0.06	medium	no visible remains	Northern end of survey area.

Table 4-4: Middle and Late Aksumite sites in the region of Wakarida. Source: GIS Dataset, O. Barge and E. Regagnon, French-Ethiopian Mission in Eastern Tigray.

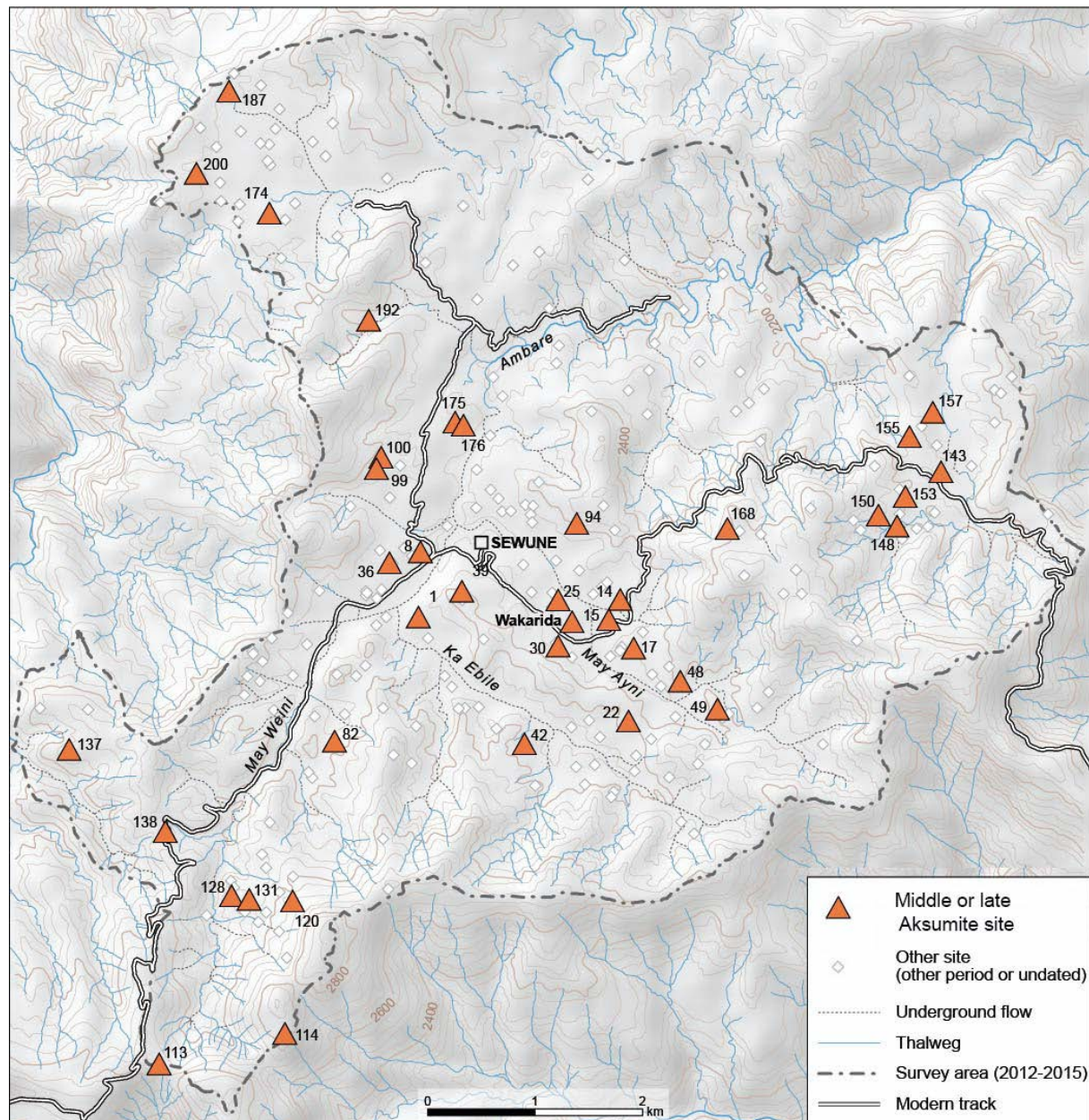


Fig. 4-22: Distribution of Middle and Late Aksumite sites around Wakarida (map: O. Barge)

Agricultural practices during the Aksumite period

Cultivation of the landscape as during the Pre-Aksumite and Late Pre-Aksumite Periods is likely, and is suggested by the large quantity of grinding equipment found on the site. On the other hand, nothing in the sections studied by the geomorphologists indicates the development of a terracing system in the bottoms of the valleys, as is the case today. Two natural sections located in Ambare (Amb) and in May Ayni valley (MAa) have provided 14C dates in the Aksumite Period (Fig. 4-23). These dates come from deposits of fine sediment (mainly silts), suggesting a period of weak alluvial processes with no reworking of sediments or high energy events (Fig. 4-23, 1 and 3). The development of a palaeosol has even been observed at the bottom of Ambare section. It corresponds to the establishment, over more than a thousand years, of a fine silty accumulation (Fig. 4-23, 3). The development of a palaeosol indicates that nothing has interrupted sedimentation and pedogenesis during this period. Thus, with regard to the sedimentary evidence, the construction of terraces on the valley bottom, following South Arabian traditions, seems very unlikely. However, land clearance for agriculture, especially on the slopes, near the location of habitations, is quite likely. Such a

transformation of the landscape could have contributed to the erosion of the soils on the slopes and their later deposition in the valley bottoms.

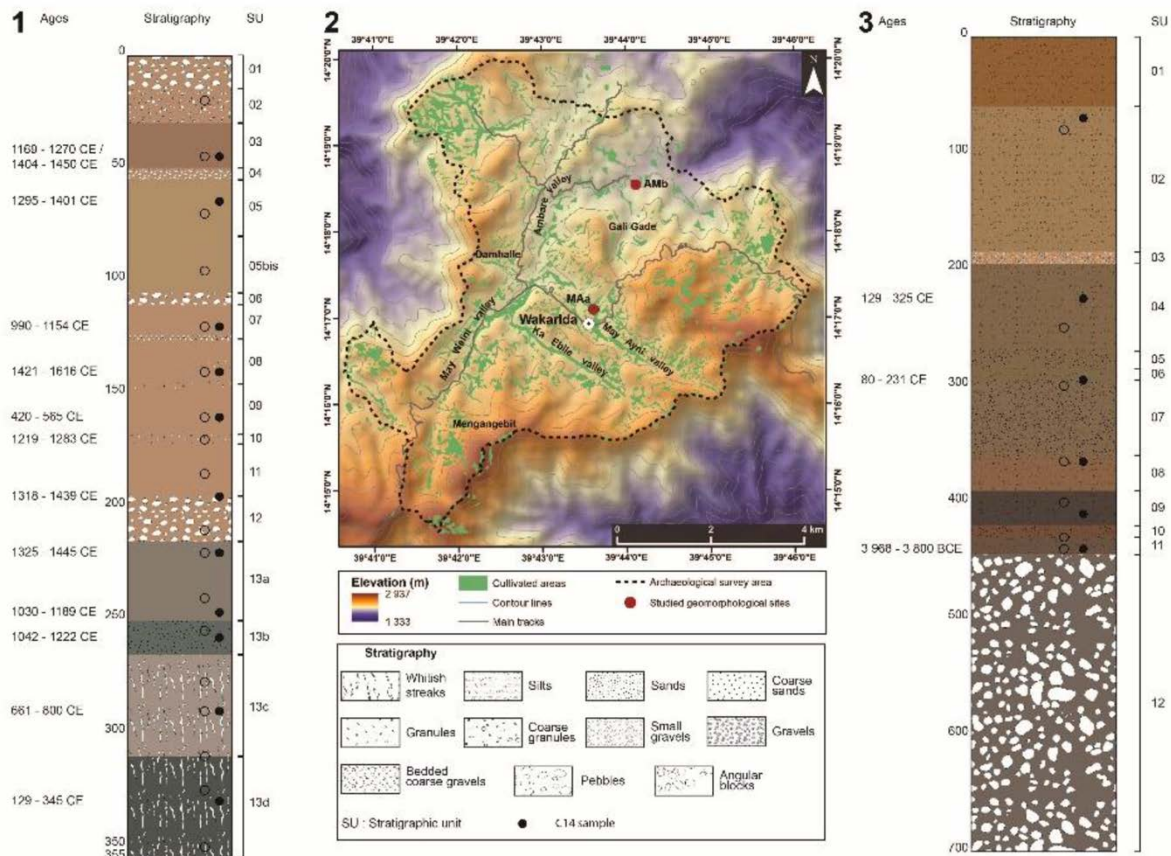


Fig. 4-23: Sections. 1: Section AMb (Blond 2019). 2: Studied sections in the area. (Blond 2020). 3: Section Maa (Blond 2019).

Discussion and conclusion

The results obtained in the region of Wakarida point to the development of a farming culture during the Early Pre-Aksumite and Late Pre-Aksumite Periods. Despite the limitations of our data, several facts are worthy of consideration.

A rural pre-Aksumite occupation without any connection to South Arabian civilization

The region was already occupied during the earlier Pre-Aksumite Period, at least in one area (Alakile Daga, along the Ka'ebile valley), and remained occupied until the later Pre-Aksumite Period. The settlement pattern included mainly small villages and isolated farms, with little evidence of hierarchy. The economy seems to have been based on agriculture and herding. In material culture, there are obvious regional connections with the population of the Gudo Makeda district, north of Adigrat, which was densely occupied during the same period (D'Andrea *et al.* 2009), and more broadly linked to traditions expanding through northeastern Tigray up to Eritrea (Ona Culture: Curtis *et al.* 2008).

Regional trade, already suggested by pottery traditions, is also indicated by the two seals from Mangagebit, which are of a style encountered on other sites over an area extending from Matara (Anfray 1967, Fig. 6: 3442) up to the region of Aksum (D Site at Kidane Mehret: Phillipson 2000, Fig. 309: c). Unfortunately, the seals coming from Matara and from the D Site at Kidane Mehret were not found in closed contexts strictly dated to the Pre-Aksumite

Period, and the circulation of these objects during the Pre-Aksumite Period and their chronological duration needs further study.

Despite the evidence of a regional trading network, there is no sign of any influence that could derive from Sabaean traditions in the region of Wakarida so far: no inscriptions, no iconography related to South Arabia and no clear link with Sabaean architecture, in spite of a certain degree of diversity and elaboration. All the possible links that can be drawn between the closest Ethio-Sabaean centre (Wukro, at a distance of c. 60 km) and the Wakarida region are restricted to pottery traditions from eastern Tigray. They form an endogenous industry related to domestic life, without any clear connections to Sabaean civilisation. The only exception could be the adoption of ring bases by local potters, though this requires further investigation.

Regional agricultural practices during the Early and Late Pre-Aksumite Periods cannot be linked to South Arabian practices, since terracing systems are a recent phenomenon in eastern Tigray.

An occupation during the Late Pre-Aksumite Period

Caution must be applied in the interpretation of our data regarding the settlement pattern and its evolution during the Early Pre-Aksumite and Late Pre-Aksumite Periods. 14C dating obtained at Alakile Daga points to the 8th-5th centuries BCE, whereas dates obtained at Armengela and Mangagebit are from the 3rd and 2nd centuries BCE. The pottery related to these different dates is, however, rather similar, although the small quantity of pottery found in the earliest levels at Alakile Daga means that slight differences may be detected in the future. Until now, no differences can be detected between sites dated to the Early Pre-Aksumite Period and to the Late Pre-Aksumite Period.

Thus, it is too early to assess the density of the settlement pattern during these periods, as the span of time covered by the dating is far too long. It is also too early to estimate the evolution of the settlement pattern during these two periods. We can only emphasize the fact that occupation still seems to have continued in the region during the Late Pre-Aksumite Period. It might suggest that this rural area was only slightly affected by the decline of the Da'mat jurisdiction during that period.

A possible gap in the occupation during the (Early and) Classical Aksumite Periods.

It is difficult to say whether there was a hiatus in the regional occupation during the Early Aksumite Period, because comparative elements are still missing. The likelihood of a gap is higher during the Classical Aksumite Period, since it is better documented. So far, there is no evidence of an urbanisation process in the region of Wakarida before the 4th century CE. The oldest levels reached in Wakarida date back to this century and, moreover, no villages nor hamlets dated to the Classical Aksumite Period were found. Such a hiatus remains to be explained.

A likely development of Wakarida contemporary with the apogee of the kingdom of Aksum (4th-6th century CE)

There is a considerable change from the Middle Aksumite Period onwards, with the foundation and development of Wakarida. The architecture of the city differs from that of older settlements: symmetrical buildings; stepped walls underlain by layers of slabs; dressed stone corners; the use of wooden beams; round bases for wooden posts in many rooms; large, squared stone pillars supporting possible wooden floors; lateral staircases, and central monumental ones; etc. This architecture obviously meets the standards adopted in the largest cities of the kingdom of Aksum at that time (palace of Dungur at Aksum: Anfray 2012a; Matara: Anfray 2012b).

New materials were used for making the pottery, including a new mixture of clay with a temper of reddish inclusions. There were also new shapes, such as short-neck jars with a clear distinction between body and neck, ledge-rim bowls and basins, and new surface treatments and decorations (with the first attestation of surface polishing and appearance of painted decoration). Some of the pottery might have been exchanged between Wakarida and other Aksumite sites. For example, the fine orange ware with black painted designs underlined by thin incisions is the same as a painted pottery found in Matara (Anfray 2012b: Fig. 38) and Adulis (Anfray and Zazzaro 2016: Fig. 2.24).

Finally, a few objects attest to the integration of Wakarida within an interregional exchange network, linking the region with the northern Red Sea (amphorae), with the Mediterranean world (*millefiori* glass bead) and with Persia (Sasanian seal), while the appearance of coinage reflects the insertion of local exchanges into a standardized economic system.

Conclusion

Our research suggests that the region of Wakarida experienced an endogenous development based on an agricultural economy during the Pre-Aksumite Period (8th-1st centuries BCE). A population of farmers was scattered in small units in the mountains, cultivating the slopes around settlement areas. The architecture and the objects collected on Early and Late Pre-Aksumite sites do not reflect any particular links with the Sabaeen civilization, which did not influence the local way of life. Similarly, the possible influence of the government of Daʿmat on local populations appears to be non-existent in this rural region, which was separated from urban centres such as Ziban Adi and Meqaber Ga'ewa to the south of the modern city of Wukro.

A distinct contrast is observed during the later Middle and Late Aksumite Periods (4th-7th centuries CE) with the foundation of the city of Wakarida, built on the model of Aksumite cities, including residences and buildings symmetrical in plan, distributed in scattered units inside a larger occupation pattern composed of domestic rooms and courtyards organised in a dense network, and non-symmetrical isolated buildings that might have been used as outbuildings or workshops.

Wakarida was closely linked to the kingdom of Aksum, as attested by its material culture, especially its architecture and pottery. The site appeared and developed during the period of the expansion of the kingdom of Aksum and it declined when Aksum collapsed. Its existence clearly reflects the rise of Aksum and its period of prosperity. Our working hypothesis, based on a historical analysis of the first archaeological finds, is now confirmed by the field research. Wakarida was most probably a part of the Aksumite kingdom, presumably its outpost in the eastern highlands, or perhaps a relay station or check-point in this region, where the mountainous relief forms a natural frontier separating the highlands from the coastal lowlands of the Red Sea.

It appears that the development of the site of Wakarida and of most of the ancient settlements of its region resulted from the political and economic expansion of the kingdom of Aksum.

Bibliography

- ANDREE, R. (1869): *Abessinien, das Alpenland unter den Tropen und seine Grenzländer*. Leipzig: Otto Spamer.
- ANFRAY, F. (1963a): Première campagne de fouilles à Matara (Nov. 1959-Jan. 1960). *Annales d'Éthiopie* 5: 87-166.
- ANFRAY, F. (1963b): Une campagne de fouilles à Yēhā. *Annales d'Éthiopie* 5: 171-232.

ANFRAY, F. (1966): La poterie de Matara. Essai Typologique. *Rassegna di studi Ethiopici* 22: 5-74.

ANFRAY, F. (1967): Matara. *Annales d'Éthiopie* 7: 33-88.

ANFRAY, F. (1968): Aspects de l'archéologie éthiopienne. *Journal of African History* 9: 345-66.

ANFRAY, F. (2012a): *Le site de Dongour, Axoum, Ethiopie. Recherches Archéologiques*. Archaeology as History, Band 3. Books on Demand, Hamburg.

ANFRAY, F. (2012b): Matara. Enquête archéologique sur une cite antique d'Erythrée. In F. Fauvelle-Aymar, *Palethnologie de l'Afrique*. *Palethnologie* 4: 11-38. <https://blogs.univ-tlse2.fr/palethnologie/wp-content/files/2012/fr-FR/Palethnologie-2012-FR-02-Anfray.pdf>

ANFRAY, F. and ZAZZARO, C. (2016): *Recherches archéologiques à Adulis (Erythrée)*. Presses universitaires du Midi, Université Toulouse-Jean Jaurès, Toulouse.

BARD, K., FATTOVICH, R., MANZO, A., and PIERLINGIERI, C. (1997): Archaeological Investigations at Bieta Giyorgis (Aksum, Ethiopia). The 1994-1995 Field seasons. *Journal of Field Archaeology* 24 (4): 387-403.

BARD, K., FATTOVICH, R., MANZO, A., and PERLINGIERI, C. (2014): The chronology of Aksum (Tigray Ethiopia. A view from Bieta Giyorgis). *Azania. Archaeological Research in Africa* 49 (3): 285-316.

BENOIST, A., CHARBONNIER, J., and GAJDA, I. (2016): Investigating the eastern edge of the kingdom of Aksum: architecture and pottery from Wakarida. *Proceedings of the Seminar for Arabian Studies* 46: 25-40.

BLOND, N., JACOB-ROUSSEAU, N., and CALLOT, Y. (2018): Terrasses alluviales et terrasses agricoles. Première approche des comblements sédimentaires et de leurs aménagements agricoles depuis 5000 av. n. è. à Wakarida (Éthiopie). *Géomorphologie. Relief, processus, environnements* 24 (3): Géomorphologie, paléoenvironnements et géoarchéologie des mondes tropicaux. <https://doi.org/10.4000/geomorphologie.12258>

CASSON, L. (trans.) (1989): *The Periplus maris Erythraei: text with introduction, translation, and commentary*. Princeton: Princeton University Press.

CONTENSON, H. DE (1962): Les monuments d'art sud-arabe découverts sur le site de Haoulti (Ethiopie) en 1959. *Syria* 39: 64-87.

COOKE, A. C. (1867): *Routes in Abyssinia*. London: Harrison and Sons.

CURTIS, M. (2009): Relating the ancient Ona Culture to the wider Northern Horn. Discerning patterns and problems in the Archaeology of the first millennium BC. *African Archaeological Review* 26: 327-50.

D'ANDREA, A. C., MANZO, A., HARROWER, M. J., and HAWKINS, A. (2008): The pre-Aksumite and Aksumite settlement of NE Tigray, Ethiopia. *Journal of Field Archaeology* 33: 151-76.

DE FELCOURT, E. (1911): *L'Abyssinie: agriculture, chemin de fer*. Paris: Emile Larose.

FATTOVICH, R. (2009): Reconsidering Yeha c. 800-400 BC. *African Archaeological Review* 26: 275-90.

GAJDA, I., BENOIST, A., CHARBONNIER, J., ANTONINI, S., PEIXOTO, X., VERDELLET, C., BERNARD, V., BARGE, O., RÉGAGNON, E., and CALLOT, Y. (2015): Wakarida, un site aksumite à l'est du Tigray. Fouilles et prospections 2011-2014. *Annales d'Éthiopie* 30: 175-222.

GERLACH, I. (2013): Cultural contacts between South Arabia and Tigray (Ethiopia) during the Early 1st Millennium BC. Results of the Ethiopian-German Cooperation Project in Yeha. *Zeitschrift für Orient-Archäologie* 6: 254-77.

GERLACH, I. (2014): Migration processes of the Northern Horn of Africa in the early 1st millennium BC. In A.V. Sedov (ed.) *Arabian and Islamic Studies. A Collection of papers in honour of Mikhail Borisovich Piotrovskij on the occasion of his 70th birthday*: 100-21. Moscow.

HARRIS, S. W. C. (1844): *The Highlands of Æthiopia*. London: Longman, Brown, Green, and Longmans.

HENZE, P. B. (2001): *Ethiopian Journeys: Travels in Ethiopia, 1969-72. 2nd edition*. Addis Ababa: Shama Books.

MATTHEWS, S, and BÜCHNER, S. in press. DAI Excavations at Ziba Adi near Wuqro. A 'provincial palace' of the pre-Aksumite period. In Gajda, I. and Benoist, A. (eds.) *Recent archaeological research. Proceedings of the international conference on the archaeology of ancient Ethiopia 14-16 April 2016*, Paris. British Archaeological Reports.

MAKONNEN, H., PHILLIPSON, L., and SERNICOLA, L. (2009): Archaeological Expedition at Aksum (Ethiopia) of the Università degli studi di Napoli "L'orientale". 2011 Field season: Seglamen. *Newsletter di Archaeologia CISA* Vol 4. 2013: 343-439.

Markham, C. R. (1868): Geographical Results of the Abyssinian Expedition. *The Journal of the Royal Geographical Society of London* 38:12-49.

MUNRO-HAY, S. ed. (1989): *Excavations at Aksum. An account of researches at the ancient Ethiopian Capital directed in 1972-4 by the late Dr Neville Chittick (British Institute in Eastern Africa)*. London. British Institute in Eastern Africa.

NEBES, N. (2010): Die Inschriften aus dem 'Almaqah-Tempel in 'Addi 'Akawəḥ (Tigray). *Zeitschrift für Orient-Archäologie* 3: 214-37.

PHILLIPSON, D. W. ed. (2000a): *Archaeology at Aksum, Ethiopia, 1993-7*. Vol. 2. London: The British Institute in Eastern Africa.

POWELL-COTTON, P. H. G. (1902): *A Sporting Trip Through Abyssinia*. London: Rowland Ward.

ROBIN, C. J. and DE MAIGRET, A. (1998): Le Grand Temple de Yéha (Tigray, Éthiopie), après la première campagne de fouilles de la Mission française (1998). *Comptes rendus de l'Académie des Inscriptions et Belles Lettres* 142 (3): 737-98.

VAN BEEK, G. W. (1969): *Hajar Bin Humeid. Investigations at a Pre-Islamic site in South Arabia*. The John Hopkins Press, Baltimore.

WOLF, P. and NOWOTNICK, U. (2010): The Almaqah Temple of Meqaber Ga'ewa, near Wukro. *Proceedings of the Seminar for Arabian Studies* 40: 363-76.

WOLF, P., NOWOTNICK, U., and BÜCHNER, S. (2015): *The Almaqah Temple of Wukro in Tigray, Ethiopia*. Berlin: Gesellschaft zur Förderung von Museen in Äthiopien e.V.