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**Report on fieldwork. Investigation on the Site of
Wakarida (Sa^cesi^ce Ts^cada Emba Woreda / Tigrai),
November 15st - December 15th 2012**

Fabienne Dugast, Iwona Gajda

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Fabienne Dugast, Iwona Gajda. Report on fieldwork. Investigation on the Site of Wakarida (Sa^cesi^ce Ts^cada Emba Woreda / Tigrai), November 15st - December 15th 2012: 2nd Season. [Research Report] French-Ethiopian project of archaeological and epigraphic investigations in Tigrai region, Ethiopia. 2013. halshs-00865947

HAL Id: halshs-00865947

<https://shs.hal.science/halshs-00865947>

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French-Ethiopian project
of archaeological and epigraphic investigations
in Tigrai region, Ethiopia
Pre-Aksumite & Aksumite period
(8th c. BC-AD 7th c.)

REPORT ON FIELDWORK

Investigation
on the Site of Wakarida
(Sa'esi'e Ts'ada Emba *Woreda* / Tigrai)
November 15st - December 15th 2012

presented by

Dr Iwona Gajda,
Dr Fabienne Dugast
& the team

TO THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF YOUTH, SPORT, AND CULTURE
AUTHORITY FOR RESEARCH AND CONSERVATION
OF CULTURAL HERITAGE

15 February 2013

Heads of mission

Dr Iwona **Gajda**, Epigraphist and Historian, specialist in pre-Islamic epigraphy and Arabian history,
Dr Fabienne **Dugast**, Archaeologist, both from the Centre national de la recherche scientifique in France.

Title of the project

Archaeological and epigraphic investigations in Tigray region, Ethiopia (Pre-Aksumite & Aksumite period)

Dates of fieldwork

November 15th-December 15th, 2012

Field of research

Historical, archaeological and epigraphic investigations

List of field team members

<i>Name</i>	<i>Specialty</i>	<i>Institution</i>	<i>Degree</i>
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Dr Xavier Peixoto	<i>Archaeology</i>	INRAP / France	PhD
Dr Julien Charbonnier	<i>Archaeology</i>	CNRS (ArScAn) / France	PhD
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Emmanuelle Régagnon	<i>Cartography</i>	CNRS (ArchéOrient) / France	MA
Dr Bruno Marcolongo	<i>Geomorphology</i>	University of Naples / Italy	PhD
Dr Christian Camerlynck	<i>Geophysics</i>	University of Paris VIII / France	PhD
Xavier Craperi	<i>Survey</i>	ALTEA Surveyors, Lyon / France	MA
Yohannes Gebre Sellassie	<i>History (Aksumite period)</i>	University of Paris-Sorbonne	PhD <i>to be subm.</i>
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Tamachache Fitur	<i>Driver</i>	CFEE (French Centre for Ethiopian Studies), Addis Ababa	
Simeneh Bacha	<i>Driver</i>		
Sisay Getachew	<i>Cooker</i>		
Godana Yohannes	<i>Cooker</i>		

Official representatives

Mulugeta **Abegaz**, ARCC (Authority for Research & Conservation of Cultural Heritage), Addis Abeba.
Haylay **Teklay**, BCTRST (Bureau of Culture and Tourism of the Regional State of Tigray), Wukro.

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INTRODUCTION & BACKGROUND

F. Dugast & I. Gajda

The second season for the *Archaeological and Epigraphic Investigations in Tigray Region (Pre-Aksumite & Askumite Period)* took place from 15 November to 15 December 2012 in Sa'esi'e Ts'ada Emba *woreda*, north-eastern Tigray. It is part of a four year research programme, headed by Dr Iwona Gajda and Dr Fabienne Dugast from the CNRS (Umr 8167 "Orient & Méditerranée" / Paris), and supported by the French Ministry of Foreign Affairs (MAEE), the French Centre for Ethiopian Studies (CFEE / Addis Ababa), and the Bureau of Culture and Tourism of the Regional State of Tigray (BCTRST / Wukro).

It comes as a result of a preliminary survey which took place in March 2010 in agreement with Ato Kebede Amare Belay, General Manager of the Tigray Culture and Tourism Agency (TCTRST) at Makale, and which has been concentrated on documenting several sites first surveyed by the Ethiopian team in the region of Atsbi-Dera, east Makale (see DUGAST & GAJDA 2010). The archaeological site of Wakarida, in the *tabia* / district of Sawena, and Sa'esi'e Ts'ada Emba *woreda* / region, eastern Tigray (**fig. 1**), was found out in 2004 by Ato Habtamu Mekonnen from the TCTRST (Makale) and Ato Tekle Hagos from Addis Ababa University (see MEKONNEN 2008). It has been chosen to start systematic archaeological investigations which begun in March 2011 (see DUGAST & GAJDA 2011).

Position

Heart of our project is the kingdom of Aksum: that is when it rose in the early 1st millennium AD, and mainly in what circumstances. In fact, we do not know anything really about what occurred in the 1st millennium BC: did any polity exist before or did the local population just live in a kind of autarky, farmers ordered in several familial nuclei connected with each another?

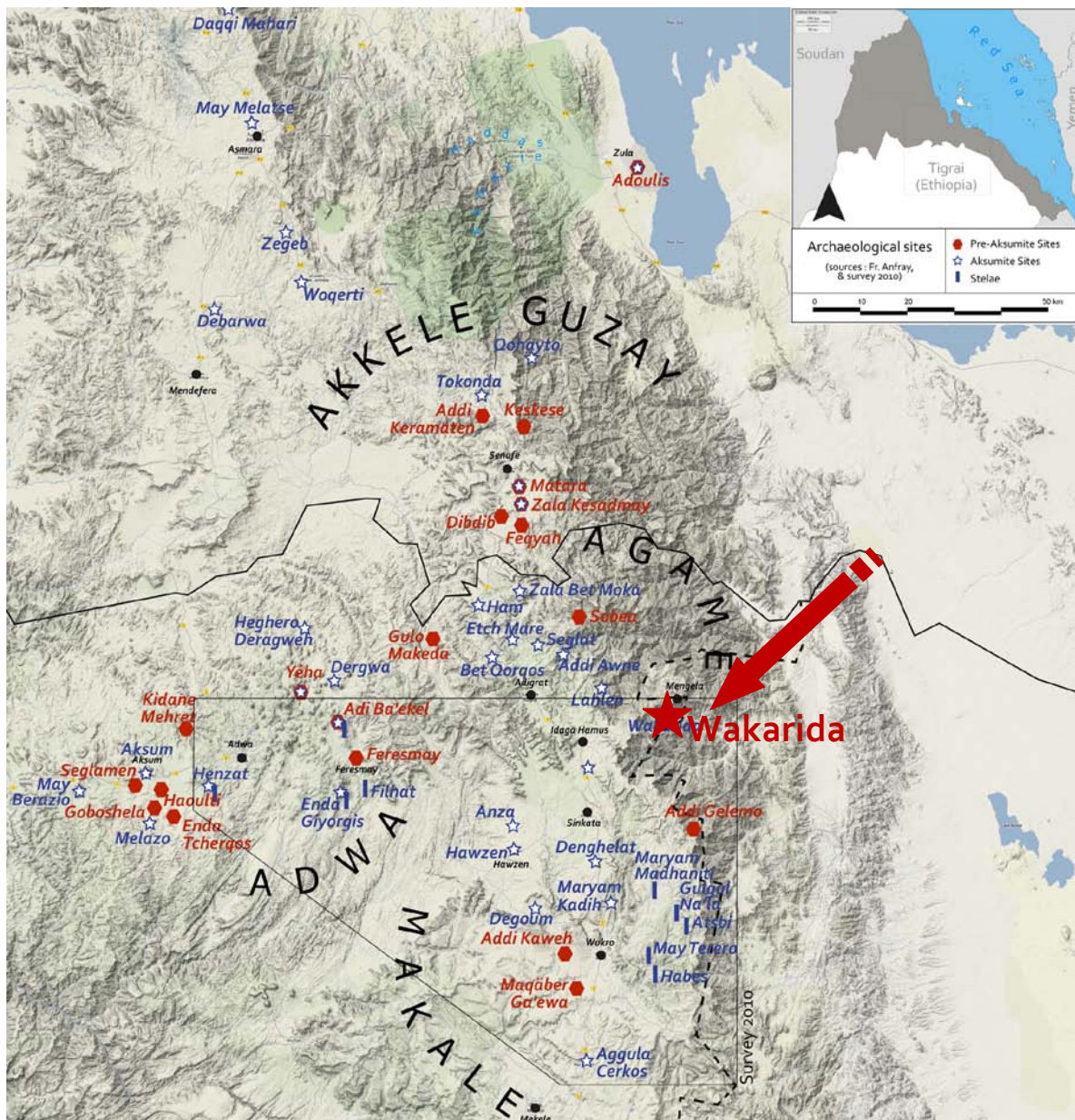
Such a question would have been less critical since archaeological remains would not have given any evidence, on several sites, of a same feature artwork, such as monumental inscriptions (see RIE), huge temples (Yeha, Haoulti, Kaskase), sculpture of high quality (Haoulti, Mäqabər Ga'əwa)... Are they the evidence of a kind of well characterised cultural facies, of Sabaeen influence? Or just the evidence of the setting up of merchant groups coming from South Arabia?

Correlation is but not clear between the development – whatever short it was – of a community associated to the South-Arabian culture in the 1st millennium BC and the Aksumite civilisation which came after. Though, both "cultures" seem to have connections, if any, with South Arabia. On the other hand, the main object brings out on cultural transfers, as soon as the 1st millennium BC, between different civilisations which increased next to the great commercial

axes linking India to the Mediterranean world, and their possible conversion or alteration in the 1st millennium AD. In this very context, every contact that might have existed between the neighbouring communities of Soudan, Egypt, Eritrea, Somalia, and of course the whole of Ethiopia is to be taken into account.

Periodisation of northern Ethiopia's history is from now directly connected to the part this region took in the political and economical, and even cultural development of the civilisations settled either on both sides of the Red Sea or in the whole area stretched out from the Mediterranean world to India. In fact, according to ancient sources, among them the *Periplus Maris Erythraei* in the very 1st c. AD (see also DIODORUS OF SICILY, STRABO, PLINY THE ELDER), the highlands of Tigrai seems to have been for long ago one of the committed countries next to the great commercial axes.

Fig. 1 – Wakarida, in Sa'esi'e Ts'ada Emba woreda, Tigrai region (Ethiopia). Localisation: UTM 38 = 14°16'56"4 N / 39°43'31"9 E (altitude 2,343 m). Aksumite period (1st millenium AD) (GoogleEarth / F. Dugast 2012 ©).



In this very context, it looks interesting to focus on the relations between South Arabia and the kingdom of Aksum. That is first of all considering human contacts between two countries which seem to be unconnected because of an impassable zone: the Red Sea. The latter is in fact a great extend of water, about 30 km wide at its southern point (the Gulf of Aden), but more than 350 km between the main Aksumite port of *Adoulis / Zula* (on the Eritrean side) and the actual ones of *Jizān* or *Maydī* (on the Arabian side). It is known to be shaky and unsafe, because of the strong currents and winds which run through from east to west. Though, it seems to be an important communication route, especially in the 1st century AD, either from South to North, the Mediterranean world to India, or from East to West, the Arabian world to African lands.

On the Ethiopian side, the most important routes were obviously the ones which ran on the western edge of the highlands, from *Aksum* to the region of *Adigrat*, and then to *Asmara* and *Adoulis*, along on 200 km. On their course there are in fact scattered archaeological sites dated back to the Aksumite period, about 15 in number between *Aksum*, *Hawsien* and *Matara*, continuing from *Matara* to *May Malatse / Asmara* in Eritrea (**fig. 1**). Few earlier ones also existed on the axe *Aksum / Matara* (ANFRAY 1990; see also GODET 1977, and more recently D'ANDREA *et al.* 2008).

On the other hand, it seems that several settlements took all the same advantage of the eastern foothills of the highlands. Passes were for sure used to join the Danakil's depression – in the Afar region –, which gave various minerals, and above all salt in abundance, thanks to its lakes, the nearest one *Assale*, about 60 km to the south; they may have been used also to join the Red Sea, and along its western edge, the main port of *Adoulis*, some 100-150 km north. One may easily think of specific contacts between the populations living on both sides of the deep: moreover, one may think of commercial and even cultural links coming beyond the ones developed in the surroundings of the metropolis; besides, the settlement of the so called “pre-Aksumite” populations may have overstep such a usual development.

The archaeological site of *Wakarida* –less than 30 km east of *Edaga Hamus* and close to *Mengela*, on the actual eastern border –, may give an example of such a case, because of its remote situation, deeply enclosed in the mountains, though it looks like a crossroads which might have open towards the East, the Afar region and the Red Sea. The architectural remains tell in fact about a kind of built-up area, which appears to be coherent, as a more or less planned town can be. Furthermore, the artefacts are very similar to those we know on other sites, either in Tigray or in its vicinity. This assemblage gives hence an opening set of evidence of a political and economic activity: was *Wakarida* an “advanced” economic area – a kind of “check point” –, or was it just a small urban settlement of local economy? And mostly when did it first occur?

Running & team

Our project is based on the collaboration of specialists of several domains. In 2011, geophysicists and archaeologists as well as a surveyor were part of the field work. In 2012, geographers joined the team.

It involved Ethiopian scholars: *Yohannes Gebre Sellassie* is part of the mission since the very beginning, and *Tekle Hagos* since 2011, even though they could not participate to fieldwork this year. And of course, we were helped by the French Centre for Ethiopian Studies and ARCCH (Addis Ababa), and BCTRST (*Wukro*), as well as the *Tabia's* administrator and officials from *Sawena*, and the local people who were very cooperative and concerned with the investigations.

The investigations were directed by Dr Iwona Gajda and Dr Fabienne Dugast, from the Centre national de la recherche scientifique (CNRS) in Paris, and team members included this year:

- Dr Xavier Peixoto, France (archaeology),
- Dr Julien Charbonnier, France / London (archaeology),
- Dr Sabina Antonini, Italy (archaeology),
- Dr Anne Benoist, France (ceramics),
- Cécile Verdellet, France (graphic design),
- Dr Olivier Barge, France (SIG & survey),
- Emmanuelle Régagnon, France (cartography & survey),
- Dr Bruno Marcolongo, Italy (geomorphology & survey),
- Xavier Crapery, France (mapping),
- Haylay Teklay, Wukro (interpreter, survey),
- Mulugeta Abegaz, Addis Ababa (official representative ARCCH),
- Tamachache Fitur & Simeneh Bacha, Addis Ababa, CFEE (drivers),
- Sisay Getachew & Godana Yohannes, Addis Ababa, CFEE (cookers),
- Hailu Abera & Woldu Hagos, Wakarida (guardians),
- 30 workmen, Wakarida (excavation),
- Aregash Woldu & Selam Hagos, Wakarida (washing).

Fig. 2 – The archaeological site of Wakarida and its surrounding (F. Dugast 2011 ©).



I. FIELD OBJECTIVES

F. Dugast & I. Gajda

The archaeological site of Wakarida (formerly known as *Aribara*) is situated in the eastern region, about 70 km north Wukro, 2 hours trail from Edaga Hamus to Mengela, east and close to Sawena, 14°16'56"4 N / 39°43'31"9 E (altitude 2,343 m). It is dependent on Sa'esi'e Ts'ada Emba administrative *woreda*, in the *tabia* of Sawena.

The site has been established on a rocky outcrop, which overlooks a large valley surrounded by chain of mountains, respectively from north to east and south to west: Daima, Afedadae, Dagaraebe, and Arebata (**fig. 2**). From now on, the place is made up of cultivated lands and farm houses, which belong to several heads of family.

Implementation

The site is completely new: none of the sources know it, and, inevitably scientific literature ignores it. It was discovered by chance by one of the local head family, *Ato* Hagos, who reported to the TCTRST when surveying the region of Adigrat to identify the regional State of Tigray's patrimony (see MEKONNEN 2008). The architectural remains were then cleared out by the local people to be reused in building their own houses and walls for terrace cultivation.

The site is concerned with two main objectives, as far as its remains are related to: its remote location, while open in the direction of the Red Sea, may help in considering the relations, whatever they were, between North Ethiopia and South Arabia in the early 1st century; on the other hand, according to the chronological sequences, it may give us sufficient elements to make out chronological markers – especially in pottery typology – which are still lacking.

► *The first season objectives & supply (March 2011)*

A preliminary investigation took place in 2011 (see DUGAST & GAJDA 2011): the main tasks were then to initiate archaeological excavations and research at Wakarida to be proceeded in the following years. In this purpose, this first season made a geophysical survey on the site, as well as test excavations, and initiated a provisional typology of the pottery.

Before any extensive excavation, our priority was in fact to estimate and evaluate the archaeological potential of the site, its area and organization. Specific fieldwork objectives were to implement a sampling design which employed geomantic techniques including GPS (Global Positioning System) and GIS (Geographic Information System) (see DUGAST & GAJDA 2011: II), to initiate a more systematic survey which employed specific techniques including geophysical

methods. This point has been achieved thanks to an electromagnetic survey which consisted on electrodes resistivity and reflectometry measurements – taking into account the nature of sediment (see DUGAST & GAJDA 2011: III).

Besides, three test excavations consisting on soundings have been opened on top of the hill as well as on the eastern and northern parts of it, one of which near a cleared out building (see DUGAST & GAJDA 2011: IV). The structures unearthed on the eastern border of the outcrop – square D2 – show a plain resemblance with Aksumite architectural techniques. The walls are of stacking work, steadily scattered with levelling courses of large stone slabs, which bring to mind the architectural techniques used either at the so called “Dongur Palace” near Aksum or at Matara (see ANFRAY 1963a & 1974).

A few pedestrian surveys have also been carried out around the site, in order to recognize the real expansion of the archaeological area – which comes to be larger than first expected –, and even other settlements nearby (see DUGAST & GAJDA 2011: IV).

As “Pre-Aksumite” and Aksumite artefacts are still not well known, the fieldwork objectives were furthermore to implement a sampling of each type of ceramics in order to produce a new typology with, as far as possible, chronological references. A systematic collection of artefacts with a systematic register and stratigraphic localization has been initiated and developed into the basis of a preliminary typological study and chronological markers (see DUGAST & GAJDA 2011: V).

► *Prerequisite to the second season (2012)*

Together with the technical data the first season provided (2011), several implements and analysis were started to insure a plain efficiency of the next seasons to be involved:

- the complete register of the archaeological data – stratigraphic units (SU), pottery typology – has been set up thanks to a geo-referenced cartographic medium connected to several items and using ArcGIS software (O. Barge & E. Régagnon, CNRS, Archéorient / France); it has to undertake either the archaeological data from the site itself or the ones from the different field investigations, among them the geophysical survey, which tasks are to look over the territory’s organisation and the communication routes, as well as the natural environment and its agricultural exploitation;
- a preliminary analysis of the natural environment, thanks to a satellite image from Digital Globe 2011, pointing out geomorphologic elements, either on the site itself or its surrounding (B. Marcolongo, CNR, IRPI / Italy).

Working hypothesis

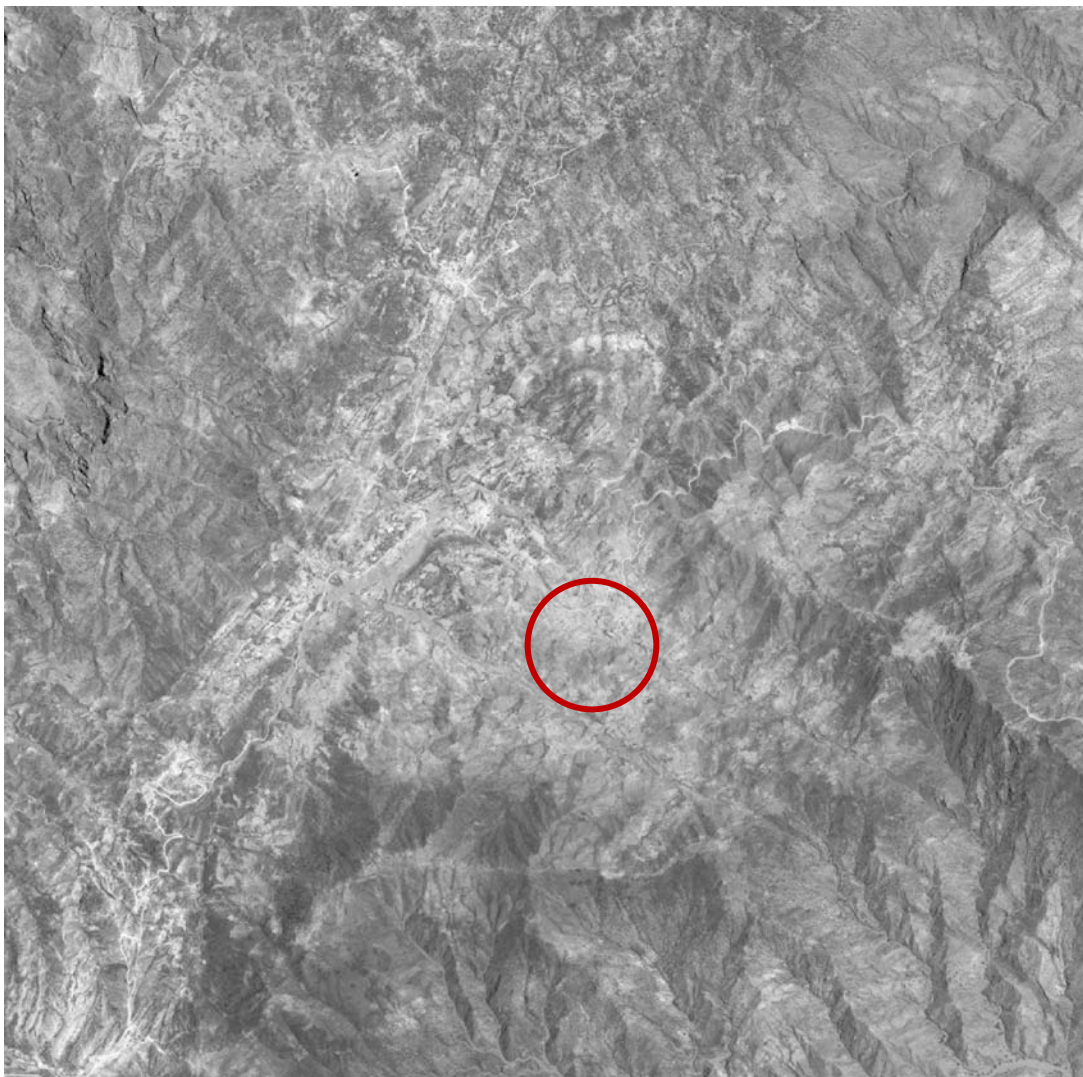
The collection makes sure that Wakarida was a small town, established since the Aksumite period, but probably earlier. Even if no chronological connection has been yet insured between the different areas which were investigated in 2011, we know that they materialize an assemblage of housing which one may consider as a kind of quite significant built-up area which appears to be coherent, extended on almost 10 ha. Furthermore, the architectural technique the building at the eastern edge of the outcrop shows (D2 square) put forward the evidence of a public edifice, if not a monumental one, maybe the “castle” of the leader of an organised

community. Besides, pottery and coinage would confirm such a hypothesis since they show a kind of a political and at least economic activity which seems to be in connection with the rise of the kingdom of Aksum.

In this very context, the site of Wakarida may enter an argument on the common establishment of communities in this actual area in connection with the commercial and exchange network on a large scale, and hence on the involvement of this kind of setting up in the development of the kingdom of Aksum.

The main task of the second season tried hence to first identify the site of Wakarida in its connection with the development of the Aksumite civilization, possibly in an earlier time; that is the origin of settlement and the reason of it. In this very sight, it focuses on the spatial organization of the site and its area depending on the chronology (well-defined excavations, stratigraphic analysis, material collection), as well as on an environmental approach that aims at giving form to a logical model of spatial setting up depending on two combined main lines: geographic and chronologic (geomorphologic analysis, archaeological survey).

Fig. 3 – The archaeological site of Wakarida and its surrounding (satellite image, Digital Globe 2011 ©).



II. THE NATURAL ENVIRONMENT & ITS EXPLOITATION

B. Marcolongo, O. Barge & E. Régagnon

The outcrop of Wakarida overlooks a rich and fertile valley of more than 400 ha to the south-east. The fertility of this valley does not seem to be recent, nor does its exploitation. It is obviously part of the development of the site itself: it seems difficult in fact not to expect a straight connection between the agrarian landscapes as it actually appears, their exploitation system, and the vicinity of a built-up area.

Two main lines were hence to be considered: the archaeological one as well as physiographic and geomorphologic settings, in order to have an environmental approach of the territory in its complete viewing. The main task was to study the interactions between men and physical milieu, as well as the variations of the use of the soils – from the alluvial plain in its natural structure to the terraced hillsides as plots of land-planning to facilitate their exploitation, involving important modifications of the ground of entropic origin.

Geomorphologic study

B. Marcolongo

The main task of the geomorphologic approach was to understand the relation between the archaeological site of Wakarida and its surrounding landscape and supplies, so as to be able to figure out, on a smaller scale, the process of the ancient settlement conception. In such a mean it was first important to focus on the connection that might have existed between men and natural supplies through time, taking into account the physiographic, geomorphologic and geologic description of the whole area.

► *Implementation*

Before any field survey though, a preliminary analysis had to be carried on – at the Consiglio nazionale delle ricerche (CNR), Istituto di ricerche per la protezione idrologica (IRPI / Padua / Italy) – on a very high resolution satellite image, black & white PAN ortho ready standard image, covering 100 sq. km precisely fixed on Wakarida (European Space Imaging/EUSI from Digital Globe, 14°17'12,92 N / 39°43'27,45 E, scene n. 10200100130CCD00). The analysis was based on geometrical and radiometrical aspects (fig. 3-5).

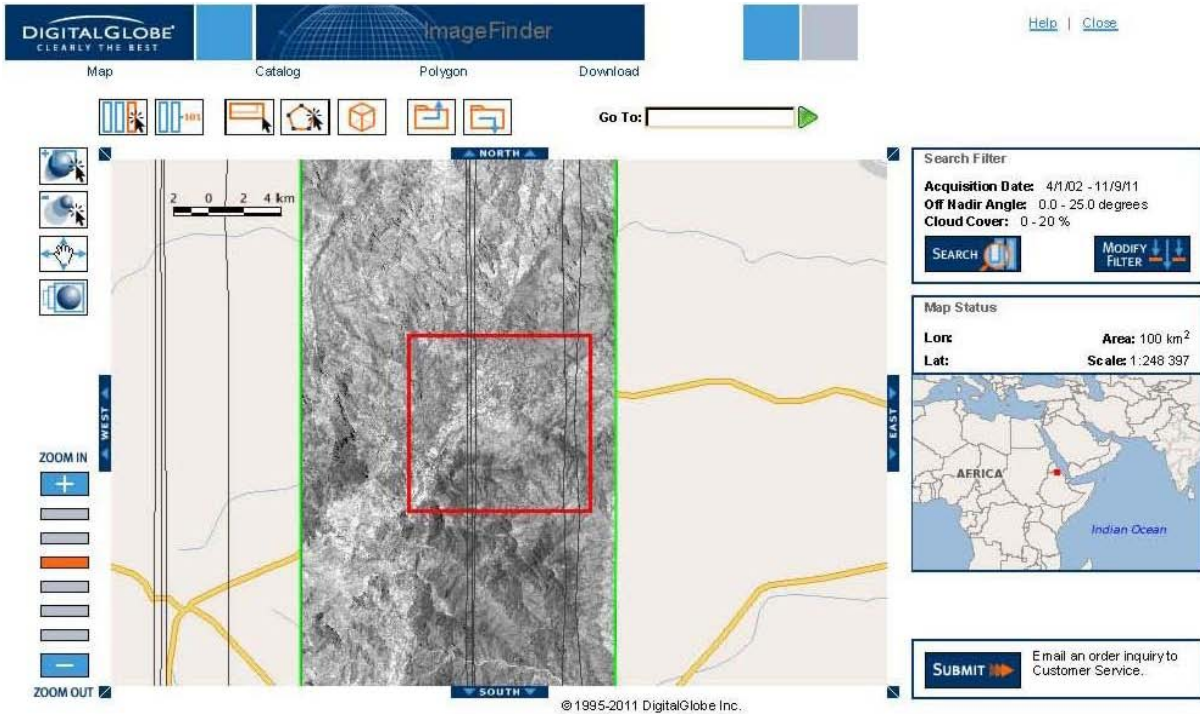


Fig. 4 – Selection of the portion of EUSI high resolution image covering a 100 sq. km area around Wakarida.

Fig. 5 – Fifth title R2C2 window centred on Wakarida site (Digital Globe 2011 ©).



▪ Preliminary interpretation on satellite image

Generally speaking, the area covered by the satellite image gives a complex drainage pattern strongly controlled by tectonics. Three different drainage basins flow respectively to the NW, the NEE and the SE. Tectonics lineaments are mainly affecting the NE portion of the area, where main trends keep to faults and fractures systems with NE / SW and NW / SE directions.

This peculiar feature explains the tortuous course of *Tabena Wadi*, whose tributary is Wakarida valley, called by local people *May Ayni* – “Water Source” –, stretching upstream SW / NE, then NE / E, and turning definitely to SE and the Danakil depression. Wakarida valley itself is formed along a clear fault line SE / NW, prolonging into the other drainage basin developed to the east of its water divide. A “derivative” fault – a parallel one – is that controlling the second floor valley elongated in the same direction about 1 km south of Wakarida valley, named *Ka`ebile*.

Both valley floors have no visible “talweg”, and only subsurface run off and/or groundwater flow are present, collecting rainfall during the monsoon season and feeding depressed area at their bottom, especially at their confluence with *May Weyni* and *Tabena Wadi*.

The two sub-basins have a roughly rectangular shape and a strong asymmetrical transversal profile. Actually, Wakarida valley covers approximately 8 sq. km surface with a south-western slope much more extended and steeper than the north-eastern one.

Sparse patches of variable dimensions of terracing (in “leopard skin spots” manner) are recognizable on the transitional plateau of *Dayma* range, flanking to the north Wakarida valley, and having a more gentle and regular slope to the north-east. Other limited areas of terraces are found along the steep and narrow valley of *Tabena Wadi* upstream of *Sewane* village, especially at lateral tributaries confluences. Consistent terracing forms are not developed in the other wide portions of the three drainage basins, where “dissection” pattern is absolutely prevailing and marking a highly incised ravines landscape.

▪ DTM analysis & contour lines anomalies

Beside this preliminary physiographic-morphologic interpretation of the satellite image, a local study has been performed on the area of Wakarida site, by superimposing a window of the geo-referenced image to the contour lines model surveyed the previous year. The objective was to identify anomalies of the contour lines, which could indicate the possible presence of underground structures and archaeological evidences.

The analysis was based on a description of geomorphometric parameters and on a spatial analysis. A restitution of the site of Wakarida in digital 3D format could be useful to find potential anomalies in the elevation trend likely to hide archaeological evidences.

The followed procedure came through the following steps (fig. 6 & 7):

- 1/ set up and modelling DTM (Digital Terrain Model) under ESRI ArcGIS software, and based on benchmarks, contour lines and topographic parameters, already gathered on 2011 field season;
- 2/ identification of potential anomalies based on comparison criteria of contour lines trend:



- 3/ DEM modelling (Digital Elevation Model) in successive phases – colour, contour lines, grey shadow – based on 3D analysis;
- 4/ DTM creation of DTM-derivative like slope and aspect map.

It clearly emerges from this analysis an elongated dorsal feature stretching SE / NW on top of Wakarida's outcrop – where an excavation area has been opened (zone 2, below). The axe is asymmetric: the natural slope facing SW, over the road to Sawena (Sawna), is steeper than those to SE and NE.

Most of the anomalies have been controlled during the field check: around north-eastern area (zone 1) and south-south-eastern one (zone 2), confirming the presence of anthropic structures buried at shallow depth.

► **Few observations on a "fossil landscape"**

The local landscape looks like a "fossil" one principally subjected to erosion, ever contrasted during time by men through a patient work of slope and floor valley terracing. Such a fine environment management is so diffused in Wakarida valley and the other parallel valley floor of *Ka'ebile*, that only long activity over centuries and centuries, performed by numerous populations, could give reason of it. It was obviously either to prevent alluvial–colluvial cover transportation or, in the mean time, to facilitate infiltration, percolation and storage of ground water, essential element for vegetation cover growth and human purposes.

These stable and favourable environmental conditions surely attracted human communities for agricultural purpose since the very past, resulting in a "fossil landscape". It may not be surprising though more ancient sites were occupied again with new settlements.

Fig. 6 – Successive phases of the process leading to DTM creation and its derivative (B. Marcolongo 2012 ©).

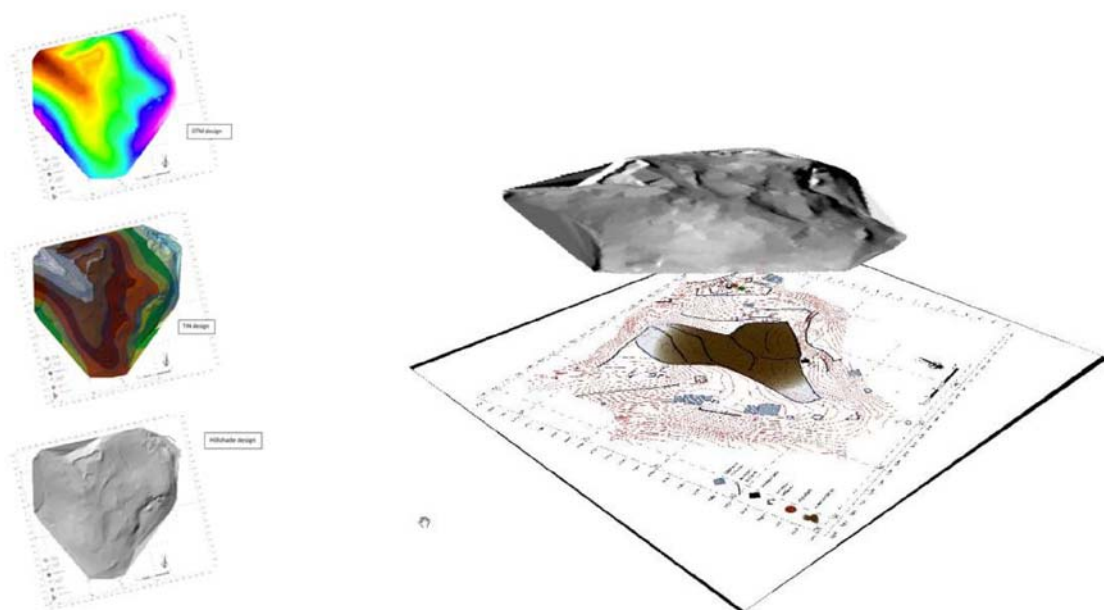
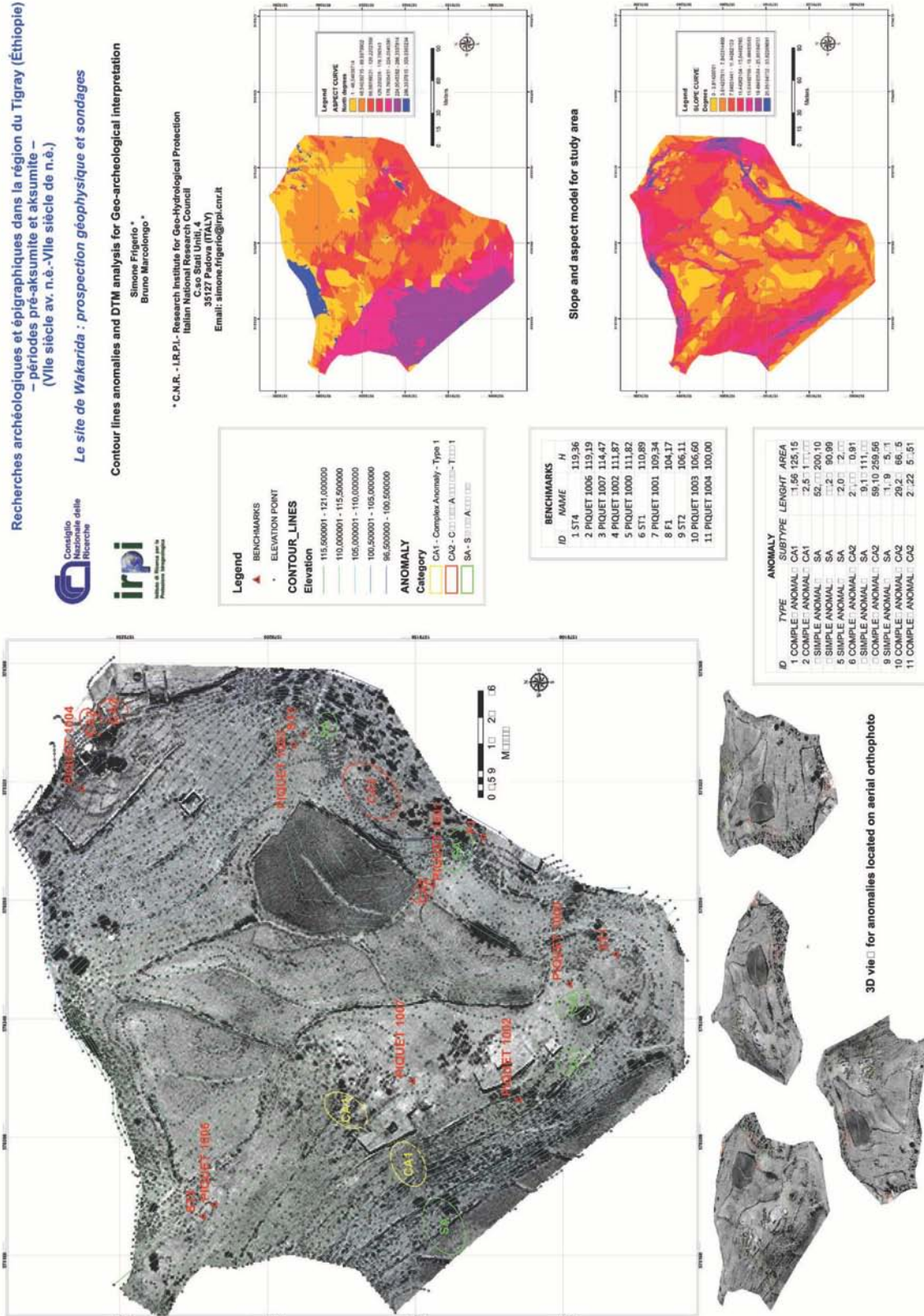


Fig. 7 – Aspect and slope map derived from the DTM, showing respectively the azimuth orientation of the different terrain surfaces and their slope values in percentage (B. Marcolongo 2012 ©).



Archaeological survey

O. Barge & E. Régagnon

The archaeological survey around Wakarida was first concentrated on its vicinity, and then gradually extended to the whole valley. Preliminary investigations allowed giving greater place to a few areas instead of others. A description of the landscape as it first appears may give some reason of such a choice.

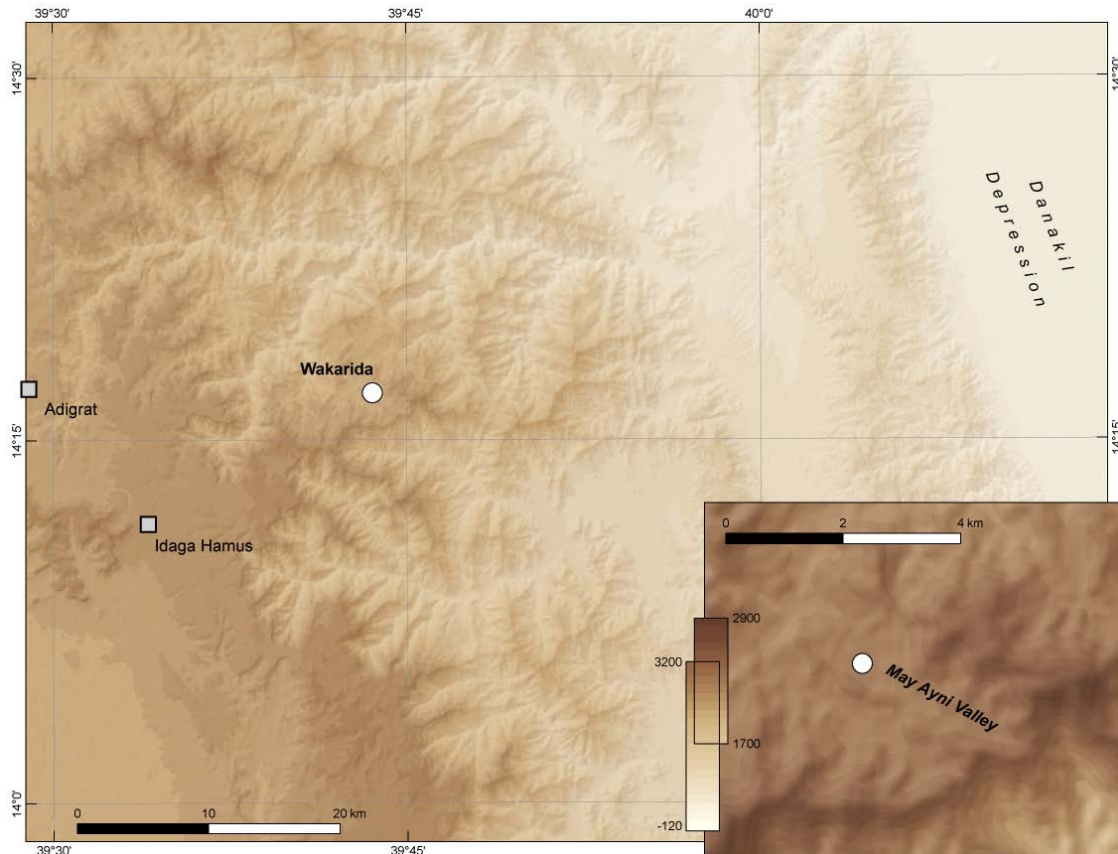


Fig. 8 – The archaeological site of Wakarida: localisation in May Ayni valley (O. Barge & E. Régagnon 2012 ©).

► *Wakarida today: environment, milieu, territory*

The site of Wakarida stands in a valley situated on a depressed point of the western edge of the highlands of Tigray, in an intermediate position between the latter and the great valleys which plunge down to the East and the Danakil depression. This topographic unit makes a kind of headland (fig. 8).

▪ *General aspect of the land*

Everything in this area makes the qualification of the environment as completely manmade, in real contrast with the great eastern valleys (fig. 9): manmade as almost every slope, since it is not too much sharp, is converted to agricultural purpose; manmade as well as flow of water is controlled in such a way that erosion is nearly absent.

Low walls are built at regular distance at right angles to every hillside, in order to break up the flow and to drive the alluvium behind the walls. As much as possible, this type of arrangement is converted into terrace cultivation, even if the so manmade section is of modest size. On the steepest slopes grow small shrubs and scattered trees used as pasture. Even there, low walls are built along the contour lines, up to the top of the hill (**fig. 10**).

Every bowl is covered by such an arrangement, which changes the natural feature of the complete landscape. The relief itself is manmade and the environment appears to be very steady.

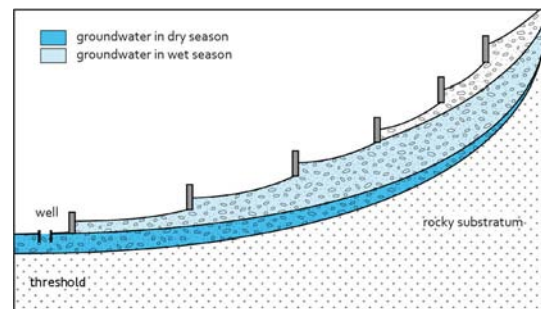


Fig. 9-10 – May Ayni valley and its landscape arranged with terrace cultivation



(O. Barge & E. Régagnon 2012 ©). and low walls in order to break up the flow.

The hilltops emerging from the valley bottom and extended from the hillsides are occupied by domestic settlements: scattered houses and their annexes, compounds and barnyards. Few of them are as well set up at the foothills, in connection with the bottom of the cultivated valley. The latter is arranged with low walls which define plain areas, gently steeped downhill: more is gentle the slope, more are large the areas. Uphill, the walls are arranged parallel to one another and at right angles to the valley chief line; at the confined point, the same terrace cultivation runs from side to side. Water flows exclusively underground.



In two points only, similar in their topographic position, water comes to the surface: downhill, in *May Ayni* valley, and in the confluence with *May Weini* valley, at *Demba Bales* locality. The valley narrows in both places, and turn into a small canyon, the mouth of which gives way to a sill where water pours to the surface. A well has been arranged in both cases: water is then directed to a canal connected to secondary waterways controlled by a gate.

From this point, the arrangement changes again: from the central point where the canal is, the low walls are built crosswise and in staggered rows, materializing a kind of network looking uphill, in order to irrigate the terrace cultivation (**fig. 11**).

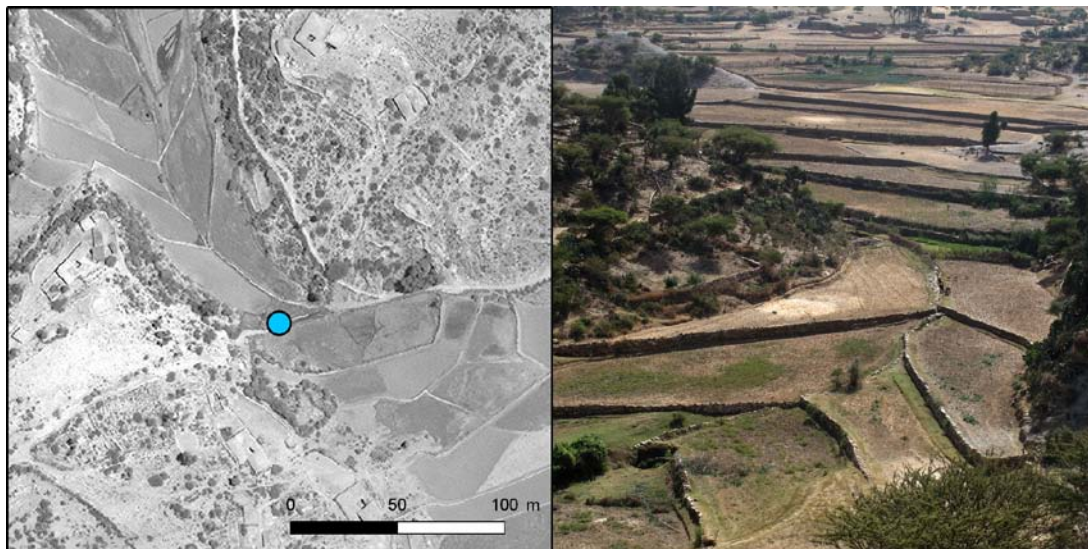


Fig. 11 – Localisation of a well,
250 m far from Wakarida,

(Digital Globe ©; O. Barge & E. Régagnon 2012 ©)
and new arrangement of the terrace cultivation.

▪ *Circumstances of development & exploitation*

As it is, the actual environment tells about generations of men who transmitted one another the knowledge of the natural system and of the manmade practices to control it. On the other hand, according to their complexity, transmission of the arrangements that have completely modelled the landscape from generation to generation is an absolute necessity. As a result, the natural system, as it actually works in a net of interactions between human communities and the environment, is to be considered in the long-lasting.

As regards to our periods, two hypotheses may be committed:

- the modelling and the actual environment came later on: the environmental conditions would have then been absolutely natural, the description of which is very difficult since water flow, vegetal cover, and maybe the climate itself might have been very different;
- the milieu was exactly the same as the one we actually know: the landscape would hence be a fossil one, set up by ancient populations maybe more important in number, the successive generations just keeping an achieved equilibrium.

Even so, the actual environment, in its efficiency, has been set up some time: it may be in the same time as the remains of Wakarida, perhaps earlier or later on, its length being also unknown.

In this very context, it seems interesting to detail the actual milieu, as on one hand it is essentially used and sheltered by a rural population, maintaining obviously traditional practices; on the other hand it may be the same milieu and the same system set up in ancient time, the one in which it has been “made up”.

• *Preliminary issues*

First of all, remains of ancient settlements were surveyed at the foothills’ outcrops, near the valley bottom. Whenever ancient settlements would have been fixed in the fields, they would have been completely buried, or even destroyed. As it is, no pottery shards have been collected in the valley bottom itself. On the other hand, the actual domestic settlements built on the

outcrops may also have covered ancient ones, except pottery shards tell about it. Even the ridges have been investigated, following basically the watershed's limits of *May Ayni* valley. Such a course allowed looking over the general aspects of the milieu and understanding the topographic feature of the valley.

Survey area has been systematically registered and mapped with a GPS receiver. Since the team included two to four individuals a day, it may be counted as a 50 m wide contour from both sides of the watershed line, in order to give an easy mapping of it (**fig. 12**).

Artefact scatters' areas have been outlined and numbered. Pottery samples have been generated from each area: the diversity of the potteries may in fact allow identifying in each area one or more cultural facies – according to the issues of the ceramic analysis. Each architectural structure has also been registered, outlined and named (*building, grave, quarry, water tank, other*); walls of visible ancient structure have been marked as a line shape and qualified (*height, width, masonry*).

The objectives were divided into three central themes:

- *Setting & site formation process*

As regards to ancient periods, no hydrological or agricultural arrangement has been noticed. According to the manmade environment, it has not to be much surprising, since the actual arrangements recover often if not always previous ones, especially as regards to the ones related to water flow. Nonetheless, it is obvious that the latter have been converted to actual arrangements such as the watering places which location has been preserved anyway: Wakarida is for instance only 250 m far from a well.

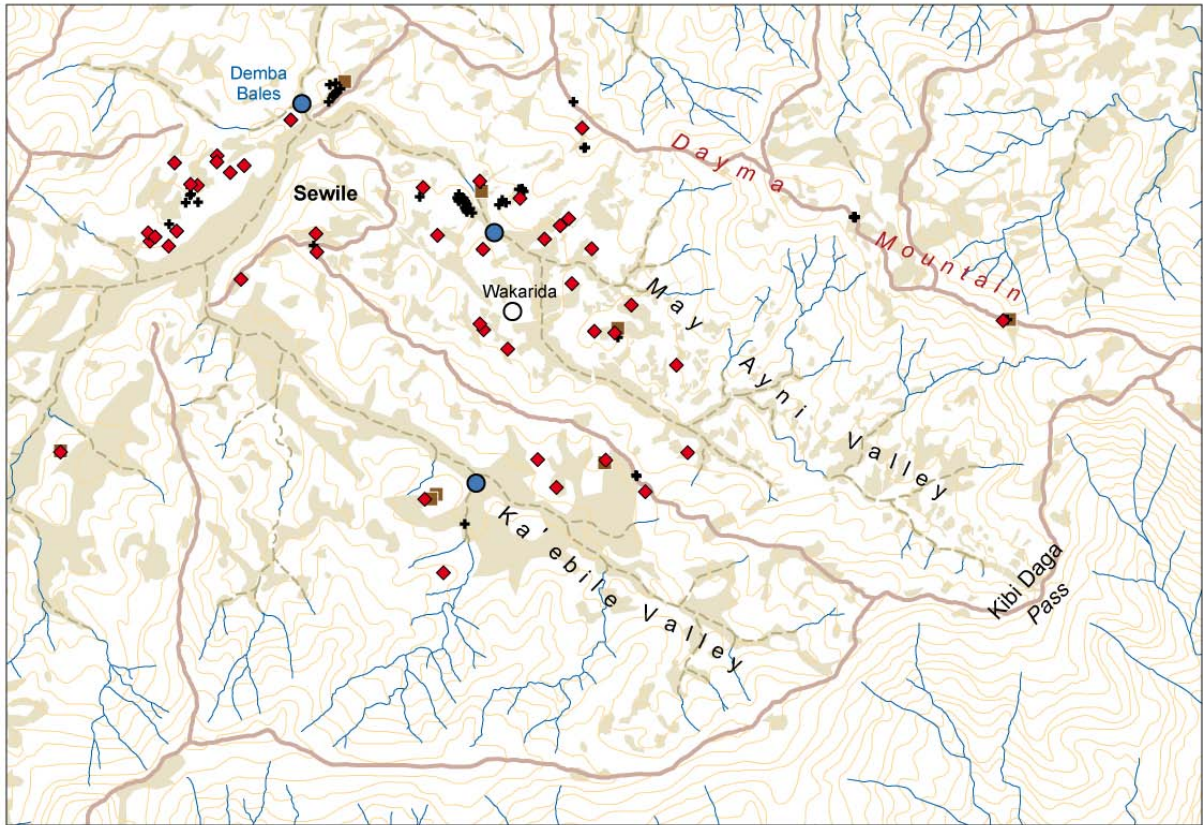
The actual condition of the archaeological survey might confirm that ancient settlements were at a very similar position to the actual ones (**fig. 13**). Pottery shards have been found in fact on the outcrops and the foothills' sides. Few obsidian fragments, some of them visibly hewn, have also been collected.

The whole of the archaeological evidence has been recognized all over the valley, around Wakarida, but none upstream: this location has to be confirmed, though it might reveal a concentration of ancient settlements mostly down in the valley. On the ridge, the passes seem to have a symbolic position. Graves have been found at several places, as well as a peculiar arrangement, yet difficult to identify since it looks like a podium of about 10 m square. A right angle wall has been also noticed located on a pass, where the population says to be an ancient church. A mosque has been just built up on the main pass between *Ka'ebile* and *May Ayni* valley near an important and current cemetery.

- *Funerary structures*

Several graves have been surveyed but not excavated, which allow few hypotheses according to their shape and situation.

A first type of graves can be defined by their **circular shape**, of 1 to 2 m in diameter, mostly 1,50 m, surrounded by sandstone blocks about 60 x 40 x 40 cm embedded in the ground (**fig. 14**). There is no special filling up inside the circle but soil; no pottery shards either. This type seems to be scattered all over the valley, mainly located on the passes or outcrops. They are very similar to those of the Bronze Age fairly known in Arabia.



0 0.5 1 km ♦ surface artefact zone ● well + grave ■ building ■ cultivated area

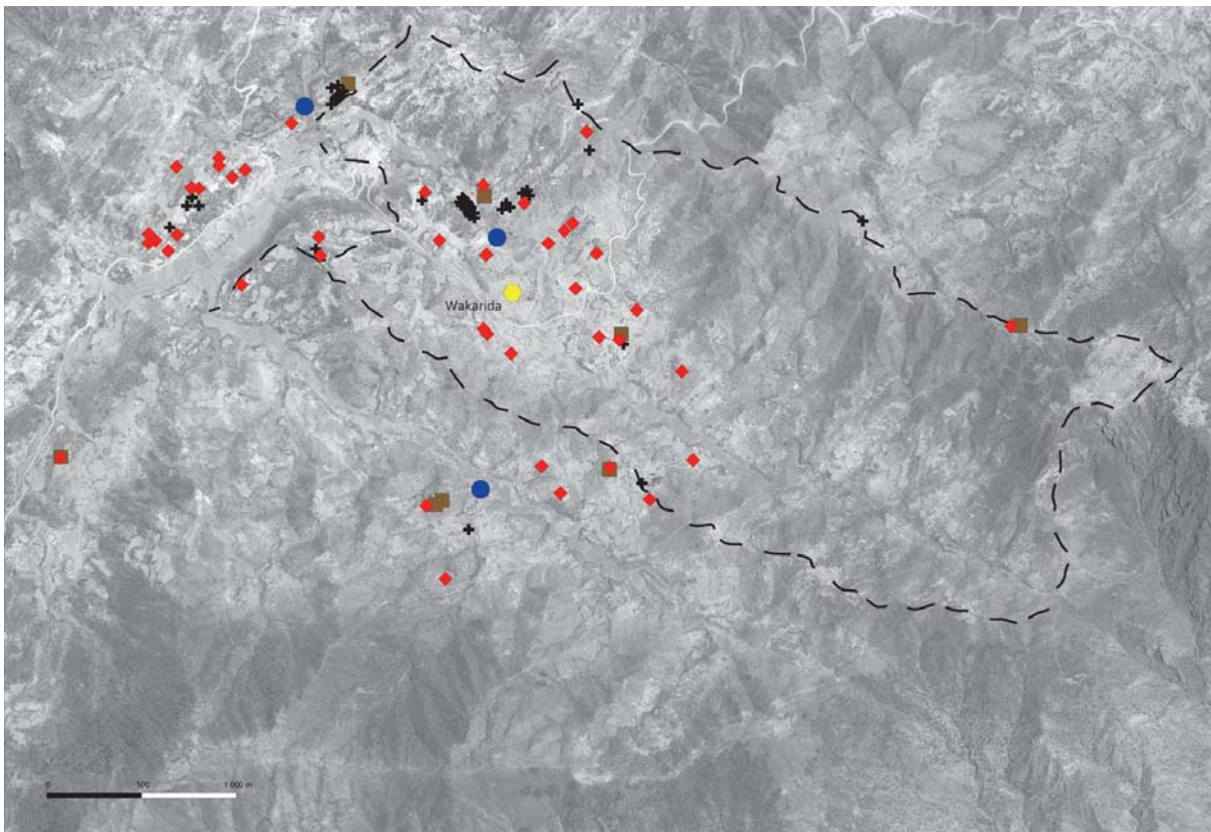


Fig. 12 – General survey map (O. Barge & E. Régagnon 2012 ©).

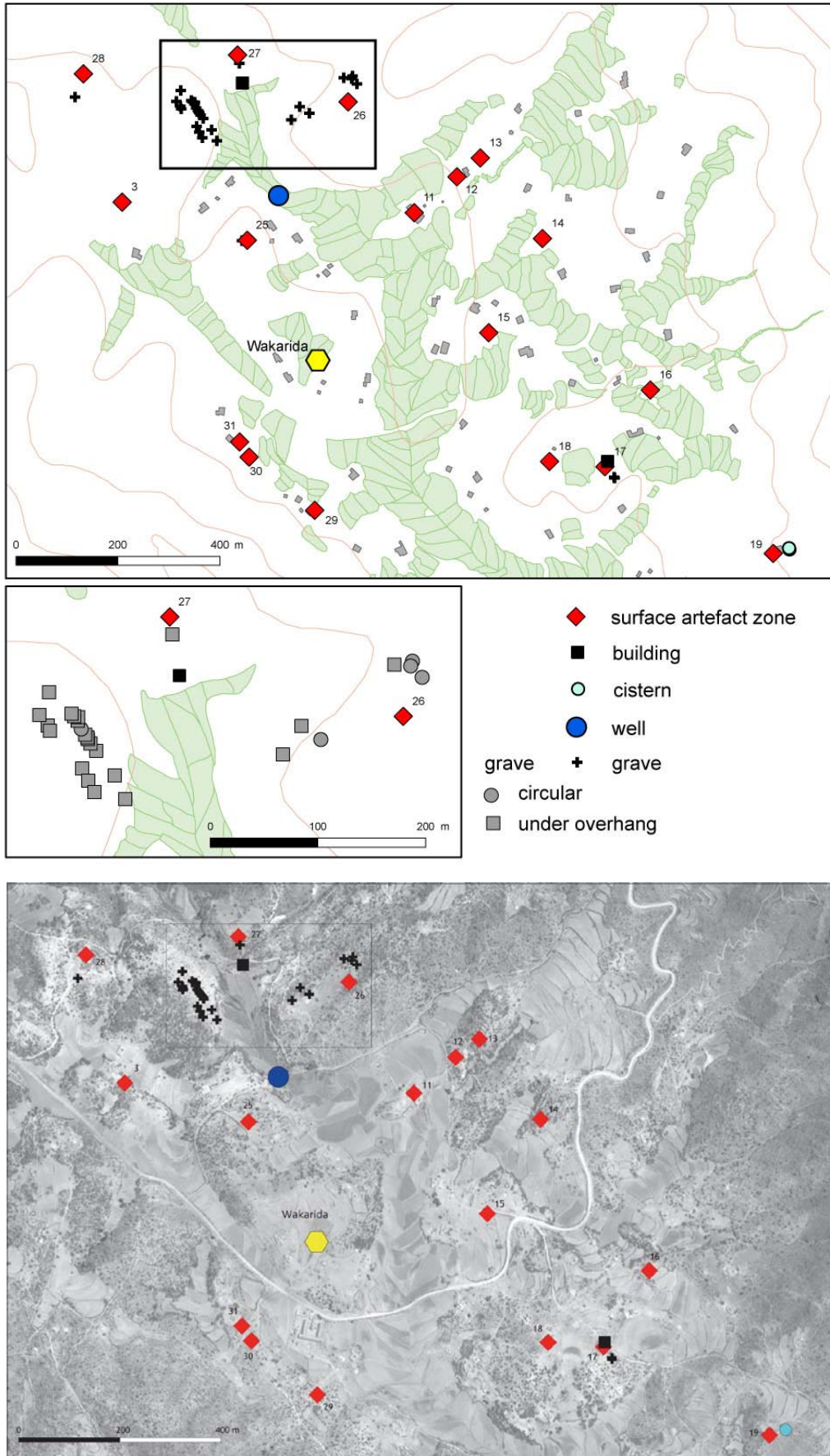


Fig. 13 – Arrangements layout near the site of Wakarida; insert, the necropolis (O. Barge & E. Régagnon 2012 ©).

A second type may be identified as **overhanging slabs** enclosed into the cliffs (**fig. 15**). Since the geologic stratum shows a few degrees slope, few of these graves look like small outcrops. The slab is used as a roof covering graves arranged underneath, where holes are dig out to put the bodies in. Front of the tomb is carefully closed with a masonry of well hewn sandstones or schist slabs. As regards to the size of the masonry, the tomb may cover one or more individuals. Two assemblages of these have been documented, the number of which in both area allows thinking about a real necropolis. Their situation, looking over important water springs near the site of Wakarida, has to be noticed.

A third type of graves can be defined by their **rectangular shape** (**fig. 16**). They seem to be recent, not to say modern, since some of them are part of actual cemeteries. They look like small platforms about 2 x 1 m in size, and 0,30 m in high, made of gray schist slabs of a very neat feature. In the middle of the platform, two or three slabs about 0,40 m in high are erected at regular distance from each another.



14



15



16

Fig. 14-16 – Three types of tomb: circular, overhanging slabs, and rectangular (E. Régagnon 2012 ©).

▪ *Communication routes*

May Ayni valley has a west/north-west direction, flowing into *Tabina* valley which is perpendicular and tributary of one of the great tectonic lineament moving down to the East. Its direction is hence opposite to the one of the hydrographic system. Besides, the ridges which surround the basin are mostly high, in order that *May Ayni* looks like a dell set high up in the mountain, and turning its back on the Danakil depression, though *Kibi Daga* pass open to a valley flowing down to the East (fig. 8).

In this system, commercial routes are difficult to take in for questioning. On the other hand, the theoretical itineraries – which are based on a model of a walker moving according to the topography – show that the position of the site of Wakarida is obviously not on a “natural” route which might join Aksum to the Red Sea. The shorter and more practicable ones come far away from the site; and even the nearest ones on the edge of the plateau come through another way than *May Ayni* valley to reach the Red Sea (fig. 17).

It does not mean though Wakarida was not on a commercial route. The “natural” trails may have in fact been controlled for geo-politic reasons, the “real” ones drawn within other considerations.

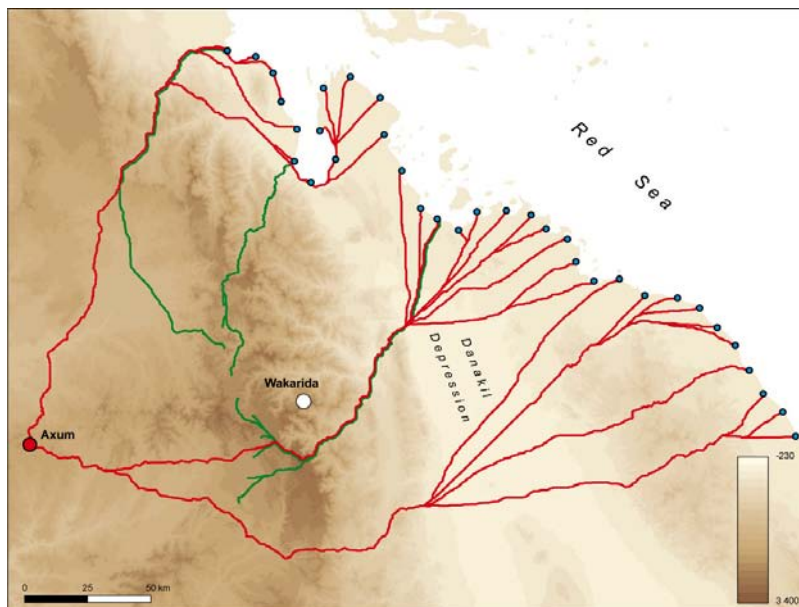


Fig. 17 – Theoretical itineraries (O. Barge & E. Régagnon 2012 ©).

- Trails from Aksum to different points located on the Red Sea border;
- Trails from the Red Sea to few localities settled in the highlands.

• *Conclusions*

At first sight, since the site of Wakarida seems far from the main commercial axes, it appears to be settled in the middle of a field land type rather than of a network one. Its exploitation is the result of a long process which combined human activity and environment system, in a durable feature. Such a development might have been possible since no conflict ever occurred as no defensive remains has been noticed anywhere.

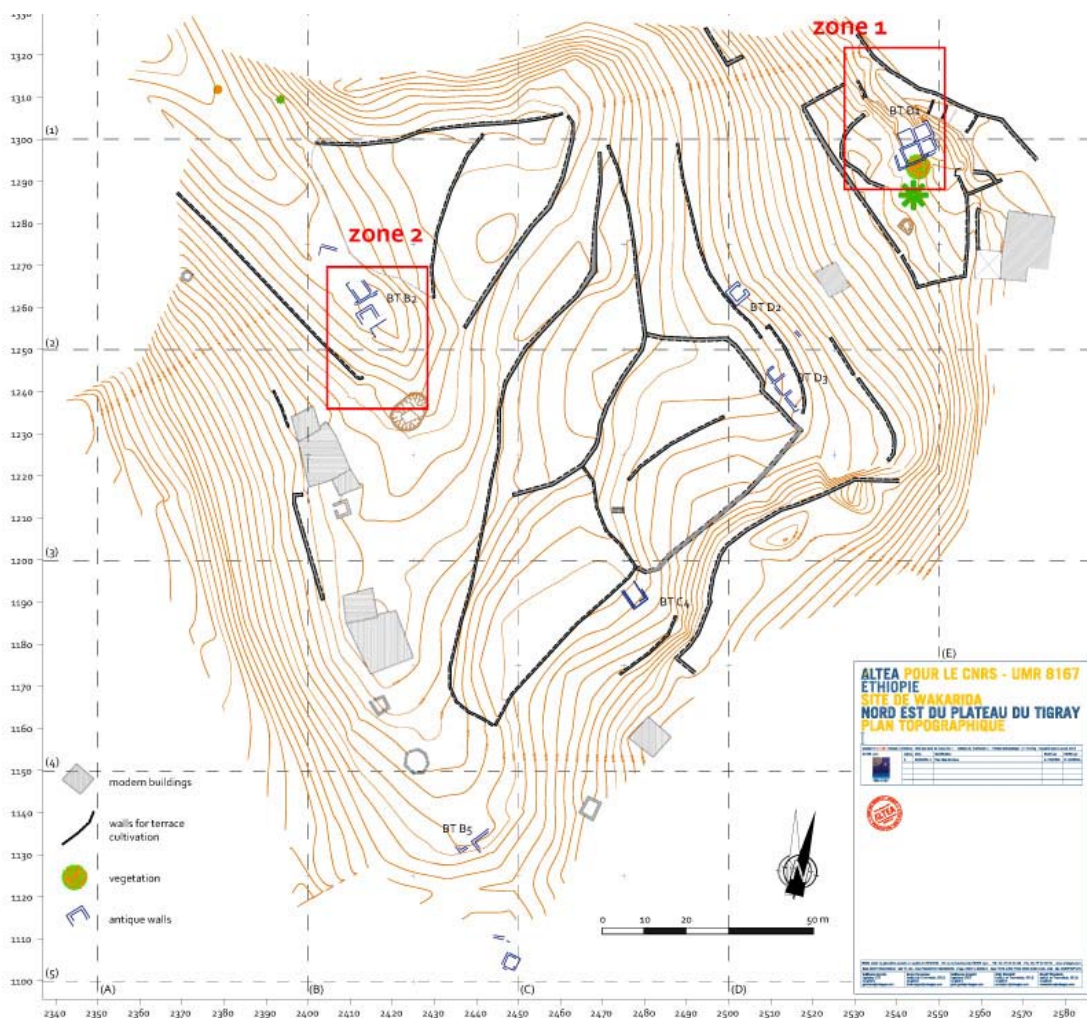
The archaeological survey will have to be completed in connection with sedimentary sequences analysis to confirm these first hypotheses.

III. ARCHAEOLOGICAL EXCAVATIONS

X. Peixoto, J. Charbonnier & S. Antonini

Following the previous season and its test excavations, the archaeological investigations focused on the general organisation of the site of Wakarida itself. Since it appears to be a small town, two sectors have been opened, their choice being based on the previous results and the geomorphologic analysis (see II.1 above). The main objective was to study these areas in their morphology and feature, and their evolution (fig. 18).

Fig. 18 – Topography of the site of Wakarida & location of the excavated areas (X. Craperi 2011-2012 ©).



Considering the great quantity of artefacts removed from the previous excavations, priority has been made on an extensive study (zone 1) as well as on a deep sounding one (zone 2), in order to put together the chronological markers (see IV below).

D2 square area (zone 1)

X. Peixoto

The previous test excavation in D2 square, located on the north-eastern slope of the outcrop (see DUGAST & GAJDA 2011: 18-19) has been followed and either extended. As regards the very first results (see *ibidem*: 24-25), this area appears to enable evidencing a chronological margin of the ancient and effective settlement, if not a complete sequence of chronological references, which dates might be given as the pottery study will go along (see IV below).

• **D2 square's main construction**

The main construction in D2 square has been examined in more details in order to establish the date of its building-up as well as its feature and possible evolution.

Levelling courses set up with slabs of schist every 6 to 10 cm in high, giving a kind of stepped batter to the wall, had yet been noticed in 2011 on the main façade to the south-west (see DUGAST & GAJDA 2011: 18). Since they are very likely to the ones known at Aksum, e.g. at the so called "Palace of Dungur", or at Matara, at the "Central Monument" (ANFRAY 1963: 93-95, & ANFRAY & ANNEQUIN 1965; see MUNRO-HAY 1989: 159-164), it makes the edifice dated back to the Aksumite period (fig. 19).



Fig. 19 – The main construction in D2 square
(F. Dugast 2011 ©)



& the "Central Monument" at Matara
(Anfray 1963, pl. LXVIIIb).

The building is made up of four rooms, three of them having being rebuilt and reused as water tank by the local population. Only the fourth one, on the north-western portion of the building, could have been cleaned up in order to study it. In the middle of the room was a stonework made-up pillar (see MEKONNEN 2008), the only south-eastern angle of which is actually preserved. Its bottom, now constituted of soil and stones mixed together, has been directly based on the bedrock and was of a square section about 2,50 m (fig. 20). Few pottery shards have been collected nearby.



Fig. 20 – The stonework made-up pillar in 2008
(H. Mekonnen 2008 ©)



& after the clearing up by the local population
(X. Peixoto 2012 ©).

At the south-eastern angle of the room, a wall segment of a very different construction has been noticed, integrated in the Aksumite building: since the room has been cleared out by the local population up to the bedrock, no connection could be identified.

• **Two more buildings on the west side**

The excavation has been extended on the south-western slope and west to D2 square building. An angled lane runs along the latter's south-western and north-western main façade, on the other side of which are other walls of same feature (fig. 21). On the south-western side, a second building (Bt 1), composed of three or more adjoining rooms (loci 2, 3 & 4) faces the main construction; on the north side, a third one (Bt 2) has been partly uncovered, consisting of more than two rooms (loci 5 & 6).

Fig. 21 – Zone 1, from south-east, being excavated.
Bt 1 consisting of three adjoining rooms (at left hand) faces
the main building (at right hand), the lane in the middle (X. Peixoto 2012 ©).



Both of these buildings are of common stone masonry. The eastern façade of the second one (Bt 1) shows the same levelling courses set up with slabs of schist. All over the surface was the occupational debris made up of alluvium mixed with stones, which may be identified as fill layers and wall collapse that accumulated over and in-between the remains of walls. This layer has been removed in the lane up to a clay surface where potteries have been broken by the destruction of the walls.

A kind of retaining wall seems to have been first set up on the bedrock, in the north-west/south-east direction, before constructing Bt 2. The separating walls would have been built afterwards. Then, a fill layer has been spread out in order to level the rooms' surface, between the walls.

Loci 2 and 3 from Bt 1 have been partly excavated. In locus 2, a hard-packed surface with gravel covers up the levelling fill layer spread out on the bedrock; there was hardly any artefact. In locus 3, the same hard-packed surface with gravel gave abundant potteries in their initial position, and for most of them, in their complete form, only crushed by the debris.

Under this occupational surface, crushing schist and soil may constitute a prepared fill layer or maybe come from architectural elements and coating which have been destroyed. This layer contains also abundant potteries, some of them being almost in their complete form. A third layer, of much more alluvium, has not yet been removed but gives already other complete potteries. Locus 4 has not been removed either, but has an entry made up of a three steps stairway, running down along the wall, from the door to the lane (**fig. 22**).



Fig. 22 – Zone 1.
The stairway running up from the lane to locus 4 (X. Peixoto 2012 ©).

Bt 2 has been partly excavated. In locus 6, debris layer had more than 1 m depth and covered a clay surface with potteries in their original position. The south-western angle of the room has been destroyed by recent arrangements; no entry has been found yet. Conversely, locus 5 opens to the north-west on an elongated area, maybe a second path in a north-east/south-west direction, parallel to the first one in its northern part.

On top of the rocky outcrop (zone 2)

J. Charbonnier & S. Antonini

A second zone has been opened on top of the outcrop, where few walls came out on the surface and part of a building has been unearthed by the local population (see DUGAST & GAJDA 2011: 16-17). Besides, at this very place, contour lines show a strong anomaly which might indicate accumulating sediment if not a debris layer (see above II.1).

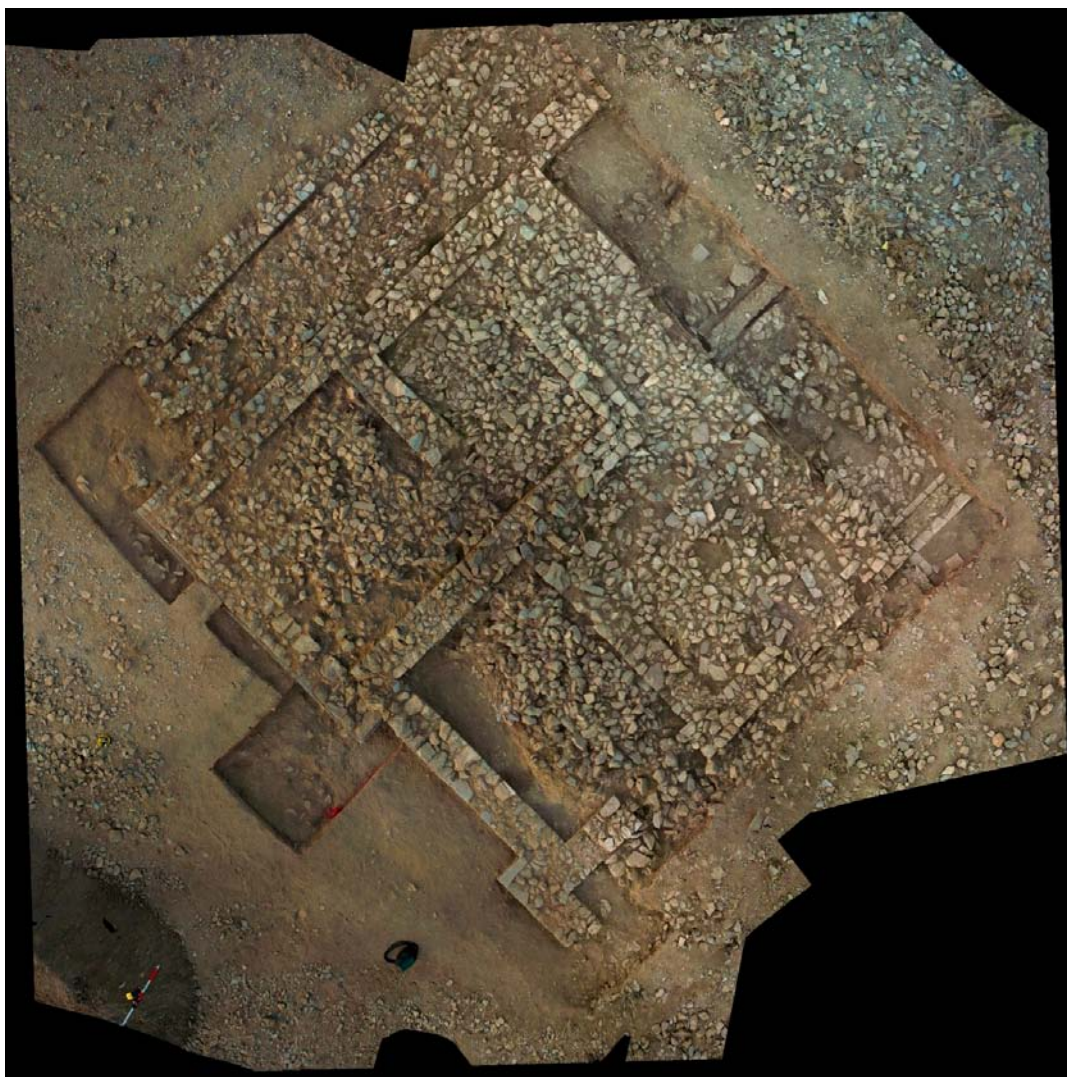


Fig. 21 – Zone 2, from above (O. Barge & E. Régagnon 2012 ©).

• A kind of Aksumite architecture

A quite 10 x 15 m surface has been first opened in which a stone made building has been uncovered (fig. 23). Its main façade shows the same levelling courses set up with slabs of schist, as the ones seen in zone 1, on the eastern side of the outcrop. The outer wall of the building draws alternatively a wall plane set back and in projection, in the same way Fr. Anfray describes it at Matara on the “Central Monument” as a distinctive feature known in the Aksumite

architecture (ANFRAY 1963: 102). The building counts two rows of three rooms, maybe a third one on the south-eastern side, not yet excavated.

The whole of the building was covered with a thick layer of collapsed stones. In one of the rooms, the occupational level under the layer debris is being excavated, on which a complete pottery has been found.

• *A second occupational level*

Two test excavations have been opened in order to determine the thickness of the sediment. In the first one, on the north-eastern border of zone 2, a more ancient level has been found, based on the bed rock and recovered by the foundation fill of the main building (fig. 22).

The second one went along the south-western façade of the same building through its foundation which trench was filled with pottery shards, charcoal and bones. Two graves were set up nearby, their chronological connection with the building being undetermined (fig. 23). A pearl of molten glass and *Millefiori* type has been found next to one of the graves (fig. 24).



Fig. 22 – Zone 2, test excavation on north-east border uncovering a more ancient wall based on the bed rock (J. Charbonnier 2012 ©).

Fig. 23 – The molten glass pearl (A. Benoist 2012 ©).



Fig. 23 – Zone 2, test excavation along the south-western façade of the main building, and one of the two graves beside (J. Charbonnier 2012 ©).

Remains of a urban settlement

Since the excavations just start, no complete description of the remains is actually possible. Though, the latter are to be definitely identified as domestic settlements where part of Wakarida's population might have lived in the Aksumite period.

Next to Bt 1 (zone 1), other walls come out on the surface, on the same north-west/south-east axe, along with the contour lines. Other lanes as well, parallel and at right angles to the uncovered ones, seem to draw a regular and orthogonal system.

On the outcrop too (zone 2), other walls come out on the surface in a fairly identical building line, though located 100 m to the west. Both settlements appear hence to be strictly organised, maybe arranged according to orthogonal circulation axes, and related to two different and dense districts.

Besides, the architectural elements – stone masonry of a neat feature, regular levelling courses set up with slabs of schist, wall planes alternatively set back and in projection – allow thinking about an architectural unit all over the outcrop, which comes through the Aksumite period, and which is almost related, since now, to a wealthy population (Matara, Aksum). Each building will have to be examined to understand its position and meaning within the site itself.

Charcoal samples have been taken from both areas to be analysed in order to have a ^{14}C dating (in hand). Besides, few copper coins have been found on the top surface, two of them from an Anonymous king reigning in the end of the 4th century, another one from King *Ioel* reigning in the mid-6th century (see MUNRO-HAY 1995: respectively 76 & 131), the latter giving hence the date of the latest antique occupation (**fig. 24**) (see IV below).

Fig. 24 – Coins from the top surface (C. Verdellet ©).



Anonymous king, late 4th c.

King Ioel, mid-6th c.

IV. POTTERY ANALYSIS

A. Benoist & C. Verdellet

The identification of the ceramics of the highlands of Tigray is still imperfectly defined. No real differentiation is made about productions, either at a local scale, or at the whole region of the highlands', even not at the importation one. Moreover, no real question has ever been asked about neither method of manufacture nor fabric, though it seems to proceed from a similar way even today (ROUX 1975). The main task of a pottery analysis is hence to start a typology based on stratigraphic and technical elements, which the site of Wakarida seems to be unable to give the opportunity. Since any analysis is hindered by a lack of previous systematic research on the ceramics of this region, the classification was made first blindly, without any comparison with published typologies and collections (see below).

Method of analysis

Pottery shards were observed with the naked eye, in the day light. Samples consist of shards gathered either in 2011 field season, from surface collection and test excavations, or in 2012 field season from the two excavated areas. The former ones, which comprise 6 types according to their fabric (see BUFFA, in DUGAST & GAJDA 2011: 20-24), have been hence completely re-examined according to the new classification.

A close selection was made among surface collection pottery, and typical forms only were drawn and photographed. All the ceramics from the two excavated areas and controlled stratigraphy were sorted out and posted in order to start a layout study according to the categories. Forms have been systematically registered and listed, some of them drawn and photographed.

Classification process followed two stages: first the clay has been examined, according to its texture, its temper and its forming. Secondly, surface finish and decoration of the different pots have been distinguished and classified according to their shape.

Final typology proceeds consequently in only three successive levels. Several types of ware may hence show equivalence in surface finish, decoration and form. Few special types were then selected according to a same kind of clay and decoration and making an assemblage of different forms. Since they are easily identified, these types will have to be dated back and hence will be used as chronological markers.

Classification

- **Cat. 1 – Fine red ware, thinly tempered**

Fabric of fine red ware is an orange, red, or light red paste, but often grey in section, with either small to tiny mineral inclusions (less than 1 mm thick) of a red or grey colour, or white inclusions, mostly sharp and matt. It sometimes has a thin and bright sandy temper, but in short supply. Clay is fairly hard with little blunt cracks, sometimes irregular with thin grooves visible inside the section. Pots are handmade, sometimes completed on a slow wheel.

- **Cat. 2 – Fine red ware, with invisible temper**

Another fine red ware has an orange, red paste, occasionally grey core, but thinner and harder than the former one, without any visible temper. It can have now and then very thin and slightly bright sand inclusions, in very short supply.

- *Finish surface and decoration*

Fine red ware (cat. 1 & 2) shows three different types of coating: without any slip (surface A); with a red or brown slip, a matt or corroded finishing in such a way that no finish surface is visible (surface B); with a red or brown slip, either burnished, polished or dry smoothed (surface C).

The main forms of the fine red ware are **cups** with slim everted rim, small **pots** with ovoid body and slim everted rim, **bowls** with convex wall, rounded base and simple slim rim.

- **Cat. 3 – Common red ware**

Fabric of common red ware is a pinkish, orange to light yellow paste, often grey in section, with many white mineral inclusions mostly faulted, as well as quartz inclusions, sometimes associated with red or grey sharp and matt inclusions. Its temper is usually made of thin and bright sand.

Thickness and size of the temper change from fine (0,5 cm or more) to thick and sometimes coarse paste. Inclusions are 1 to 2 mm thick, scarcely more. Few ceramics are partly burned by using them for cooking, and change in colour from red to dark brown. Pots are handmade, sometimes completed on a slow wheel, since the walls are uniform. Surface is mostly smoothed, either with the hand or a pebble.

The main forms of the common red ware are big necked **jars** with rounded or smoothed rim, a handle on the shoulder, and huge **dishes** with slim everted rim. Few containers have incised decorations on top of the rim. The inside wall of low plates, a ladle and a rectangular plate set up on three feet (footwasher?) coming from zone 1 have incised and impressed decorations made up with a triangular stamp (**fig. 25**).



Fig. 25 – Pot with everted rim and plate on three feet in common red ware (C. Verdellel ©).

Common red ware has been broadly collected on the surface and zone 1, but more occasionally in zone 2, and at the deepest level.

• **Cat. 4 – Dark polished ware**

Fabric of dark polished ware is a thin grey or brown paste, with a mineral temper made up of grey or dark matt inclusions, white inclusions of quartz, and micaceous speck. Surface has a dark polished or burnished slip.

Collection of dark polished ware is limited, for the most part on top surface and upper level in zone 1. A complete pot has been collected in 2011; its main forms are **small jars** with globular body and narrow neck, **bowls** with convex wall, rounded base, and simple slim rim, and **cups** with slim everted rim (**fig. 26**).



Fig. 26 – Bowl and small jar with straight neck in dark polished ware (C. Verdellel ©).

• **Cat. 5 – Common red ware, with bright temper**

Common red ware with bright temper is an alternative common red ware (cat. 3), having abundant and bright inclusions, and a soapy surface.

The main forms are huge **dishes** with slim everted rim. Most of them have been collected in zone 1, in top levels.

• **Cat. 6 – Dark-grey ware, tempered with steatite**

Fabric of dark grey ware is a very compact clay, dark-grey paste, sometimes brown, with lots of mineral inclusions grey in colour, probably steatite or soft volcanic rock of a similar type (tacl, chlorite). Pots are handmade, the walls of which are mostly irregular, showing marks of finger pressure.

The main forms are **cooking pots**, with vertical handle under the rim, and sometimes a coarse incised decoration. It has been collected on the top surface in 2011, but is more frequent in zone 2, especially near the building on its south-eastern side, and in the superficial levels (**fig. 27**).



Fig. 27 – Dark grey ware, tempered with inclusions of steatite (C. Verdellel ©).

• **Cat. 7 – Fine ware, with painted and incised decoration**

Fabric of fine ware with decoration is a very pure orange paste, hard and compact, without any apparent temper but a polished surface, and fine incised bands and arcs on the external wall. Some of the incised patterns are enhanced with red or black painting (**fig. 28**).



Fig. 28 – Bowl in fine ware, with painted and incised decoration (C. Verdellel ©).

Fine ware with painted and incised decoration has been occasionally collected in zone 1, but is wholly absent in zone 2.

• **Cat. 8 – Fine and soft red ware, with incised decoration**

Fabric of fine and soft red ware is an orange to brown paste, often grey in section, mostly thin, with a fine mineral temper of white inclusions and bright sand, very similar to the fine red ware one (cat. 1), and to few of the common one, but the clay seems to be more crumbly. Its surface is mostly coarse, without any slip, and partly worn.

The main forms are small **jars** with vertical neck, few **cooking pots** with rounded body and two small knobs on the shoulder. A decoration consisting of incised bands and triangles filled by simple or crossing oblique incisions are present on the top surface (**fig. 29**).

This type has been collected for the most part in zone 1, in the upper levels, corresponding to 10% of the assemblage. It occurs also on the top surface, in zone 2.

• **Amphorae**

Few shards of ridged amphorae have been collected all over the site on the top surface and in zone 2. Its fabric is a very thick paste, green in colour, set up on a wheel, with small white and crumbly inclusions and a fine vegetal temper. Slip on the surface is white and thick (**fig. 30**).

No shape has been yet collected: it is hence difficult to find any information relating to its origin, but the shards are very similar to the ones collected at Matara (see ANFRAY 1963a: fig. CI / 43-45), and Adulis (see PARIBENI 1908: fig. 58), and may be identified as the well known *amphores cotelées* used in Mediterranean trade.

• **Other ceramics**

Two more shards have been collected on the top surface, the decoration of which consists of thin straight lines under the rim, and narrow and vertical red bands painted near the base. Another shard has a black and waving painted decoration associated to an incised oblique one. These shards have been related by Vittoria Buffa to Aksum painted ware (see BUFFA, in DUGAST & GAJDA 2011: 65, type 6).

A grey shard has also been found on the top surface the decoration of which consists of vertical striations, flat on top (decoration G), evoking the vertical striations of Aksum red ware (see MUNRO-HAY 1989: fig. 16-36, 37, 73, 74, 79, 88-90).



Fig. 29 – Small jar with knobs in fine and soft red ware (C. Verdellet ©).



Fig. 30 – “Amphores cotelées” shards (C. Verdellet ©).

Chronology & corresponding

Ware from Wakarida consists of an original assemblage, which seems not to have similar features with other assemblages already published.

Among the **fine red ware** forms (cat. 1), cups with slim and spread lips, sometimes decorated with two incised lines, as well as small pots with everted rim, have been occasionally collected on other sites as Aksum (see MUNRO-HAY 1989: fig. 16-355, 360, 361, 363) or Matara (see ANFRAY 1963a: pl. LXXXVII / 12). Bowls with spread lips and geometric patterns from Matara refer to few rims from Wakarida (see ANFRAY 1963a: pl. XCII / 6, 8).

Among the **common red ware** (cat. 3) and the **dark polished ware** (cat. 4), bowls with convex body have been collected also at Aksum (see MUNRO-HAY 1989: fig. 16-399, 401).

Common red ware (cat. 3) give few parallels with **red Aksumite ware**: dishes with everted rim, and jars with short neck and handle on the shoulder are to be related with two items from Aksum (see MUNRO-HAY 1989: fig. 16-232 & 16-227). The incised plate set on three feet refers exactly to items found at Aksum in 3rd and 4th centuries' levels (*ibidem*: fig. 16-197, 198-200), and are identified as footwasher by Chittick and Munro-Hay, since a complete item is set inside a basin (*ibid.*: fig. 16-197). No complete items but shards have been found at Matara (see ANFRAY 1963a: pl. XCII / 5, 7): in spite of its specific use, it might have been kept on for a long time.

Red Aksumite ware has usually lots of Christian marks on the surface: mostly cross (see MUNRO-HAY 1989: fig. 16-394), and also fish (*ibidem*: fig. 16-213). None of these have been collected in the excavated levels; only one shard with red polished slip and crosses under the rim has been found on the top surface, near an ancient wall at SAZ 14 point, 500 m north-east from the site, on a foothills' outcrop (fig. 31). A kind of "brasero" in common red ware with red slip has been found as well near another wall part of a building, 1,5 km north-west from the site by local population (see Anfray 1966: 8, pl. XV) (fig. 32). Its form refers to incense burner coming from Mäqabär Ga'äwa's temple near Wukro (see WOLF & NOWOTNICK 2010: fig. 9).



Fig. 31 – Fine red ware with red burnished slip and two crosses, found at point SAZ 14 (C. Verdellet ©).



Fig. 32 – Brasero found on surface at point Cn 15 (C. Verdellet ©).

Dark-grey ware tempered with steatite (cat. 6) might refer to late dark-grey ware from Aksum as it is described by Chittick and Munro-Hay as the result of "an undisciplined and technical inferior way" and "the loss of the craft skills" in late Aksumite period, after the removal of Aksum (see MUNRO-HAY 1989: 301-303 & fig. 16-409). It only occurs in the later and top levels and on the surface.

Fine and soft red ware (cat. 8) refers to few potteries from Aksum in their shape and decoration (see MUNRO-HAY 1989: 301-303): in dark polished ware from ES V(11) (fig. 16-436), and dark-grey ware handmade from the latest levels (fig. 16-409).

Conclusion

Wakarida's pottery shows actually a quite homogeneous assemblage, which partly refers to other assemblages collected on the great Aksumite sites, as they are known by currently published studies. Though, some differences occur, whether the chronology is slightly different, or the local cultural context is slightly affected by great cultural movements which go on all over the highlands and around.

Two well-defined collections have been set up: an ancient one with most of the common red ware, and a later one which only occurs in zone 2 in the upper levels. The confirmation of this analysis may allow recognizing two successive settlements, the dating of which cannot be definitively fixed at the moment. A comparison between Wakarida's dark-grey ware tempered with steatite and the one from the latest levels at Aksum gives though a possible *terminus ante quem* related to the removal of Aksum which is commonly placed in the 8th, maybe 10th century. Unless the coins give an earlier date of the latest antique occupation, ¹⁴C dating will enable to mark out a more precise chronology (see III above).

PRELIMINARY ISSUES

F. Dugast & I. Gajda

At this stage of the 2012 field season, few preliminary issues may be put forward. First of all, the previous hypotheses seem to be easily reinforced:

- **geomorphologic analysis** supports the idea of a controlled development of the region, for a long time ago;
- **archaeological survey** reinforces this idea, since ancient remains have been observed in both *May Ayni* and *Ka'ebile* valley, next to the site of Wakarida, part of these remains being obviously earlier than the ones actually excavated at Wakarida;
- **excavations** reinforce the idea of a build-up area, dated back to the 4th-6th century, the planning of which has to be better understood, but already indicates a kind of important place.

These issues allow taking out the reason why this kind of remote territory could have been developed. Abundant resources, mainly of the soil, may be sufficient to explain such human settlements. Though, even if the region seems to have been first arranged for agricultural purpose, the site of Wakarida shows the setting up of a town, as small as it may be, which indicates the presence of if not wealthy and more or less numerous people, at least a hierarchically structured population. As it is, the development of such a remote town may obviously be in connection with the kingdom of Aksum. Architecture refers in fact to what occurred at that time in the kingdom and its cities, Aksum and Matara, even if commercial trails are not plainly identifiable; even if potteries do not seem to indicate any commercial trade as one may usually understand it – but few Aksumite coins have been collected. On the other hand, the evidence of earlier settlements allows thinking about a previous organisation to consider as a “first round”.

Few more issues may come forward next to a careful examination of these new elements. They will have to be completed with other investigations to be undertaken in the following years: archaeological survey has to take a more precise course according to the first issues; excavations have to be continued in order to make clear the occupation levels; buildings' mapping will be essential in order to identify them; pottery classification has to be continued and supported by ¹⁴C analysis in order to fix the chronology.

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