

■ ETHIOPIA

IUO/BU Joint archaeological expedition at Bieta Giyorgis (Aksum, Ethiopia): 2000 Field season

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The Joint IUO/BU Archaeological Expedition at Bieta Giyorgis (Aksum) in Tigray (northern Ethiopia) conducted its seventh field season, under the direction of Rodolfo Fattovich (IUO) in May and June, 2000. The project, in progress since 1993, includes research in archaeology, paleoethnobotany, archaeozoology, geology, geomorphology, ethnoarchaeology, ethnography, ethnohistory and mapping. Training of local personnel and conservation has also been part of the expedition's tasks during each field season. In 1996, the University of Cagliari (Italy) also conducted a preliminary geophysical survey at Bieta Giyorgis in collaboration with the IUO/BU project.

In the previous six seasons (1993 to 1998), investigations focused mainly on the excavation of two major sites on the top of Bieta Giyorgis hill, to the northwest of Aksum: Ona Enda Aboi Zewgè, a cemetery in the central sector, and Ona Nagast, a residential area in the southern sector. In 1999 fieldwork was suspended because of the conflict at the Ethiopian-Eritrean border (Bard et al.1997; Fattovich and Bard 1997; Fattovich et al. 2000). In 2000 the fieldwork consisted of four components: archaeological survey, test excavation, palaeoethnobotany and ethnoarchaeology and mapping. A preliminary off-site archaeological investigation was also conducted to enlarge the research program to include the reconstruction of the ancient rural

landscape at Bieta Giyorgis and how it changed over time.

Survey

The archaeological survey of Bieta Giyorgis was designed 1) to identify the number, density, and variety of archaeological remains on the hill, and 2) to examine in detail surface features that were identified in the course of aerial photo interpretation. This is the first step in the study of land use and landscape history in the area. The survey was a full-coverage, systematic examination of the top and slopes of Bieta Giyorgis, and was completed in two weeks. Site location was recorded by means of GPS as well as a grid system superimposed on a 1:7800 scale aerial photo base map. The survey was also aimed at verifying on the ground the features identified on the top of Bieta Giyorgis by the aerial photo analysis (Fattovich et al.2000:40-41). Four types of site were recorded: rock-shelters, open sites, stele quarries, and sites with rock inscriptions. The survey identified 61 sites where pottery and/or lithics were collected, one site with evidence of stele quarrying, and three sites with inscriptions.

Some sites identified in 2000 were already recorded in previous surveys, and 16 and 4 systematic surface collections respectively were conducted at Ona Nagast and Ona Enda Aboi Zewgè. Systematic surface collections were also made close to the BGS and BGI churches which were excavated in 1974 by Ricci. According to the ceramic analysis, recorded sites date from Proto-Aksumite (4th-2nd centuries BC) to recent historical times. The occurrence of multi-phase sites suggest a continuity of use through the time. The data from the survey have been included into a GIS database for computer analysis and interpretation of changes in the land use pattern through the time.

Off-site archaeology

Man-made landscape features at Bieta Giyorgis include agricultural terraces and fields, cisterns, dams, roads and paths. These features are the connective tissue linking together the whole investigated area in one man-made system, and may reflect temporal changes in social organization and land use patterns. In 1997, the IUO/BU expedition conducted a preliminary investigation of the landscape features visible on the top of Bieta Giyorgis hill, in order to generate a model of the ancient land

use pattern to be tested in the field. Several hundred possible features were also identified in the aerial photos of the area, and two main categories of features were distinguished: a) linear features (including quadrangular or polygonal structures), and b) circular structures (including circles and compacted structures) (Fattovich et al. 2000). The 2000 survey demonstrated that some of these features are recent (although they may be a reuse or rearrangement of earlier structures), but others may be old or ancient. At present, different layers of features can be distinguished on the top of the hill and represent different stages of occupation and land use.

Most likely a large path, crossing the top of Bieta Giyorgis from south to north, follows the direction of an ancient road that has been partly rearranged in modern times. The path connects Mai Lahlah to the south with Gual Agazien to the north. Mai Lahlah is a stream draining to the residential area of ancient Aksum (Dungur), and is the direct way from the settlement at Ona Nagast to Aksum. Gual Agazien is a stream draining to the valley of Mai Malahso, to the north of Aksum, and connects Bieta Giyorgis with the traditional road to Mezber, and from here to the Ethio-Sabean ceremonial center at Yeha. Another large path connects Tukul Emeni to Geza 'Aghmai at Aksum. This path has been transformed into a road in the 1960s as part of the reforestation program. Most likely it follows an ancient road, as this is the shorter way to the so-called "Domestic Area," a settlement along the Mai Malahso the BIEA Expedition at Aksum investigated in 1993-1997.

These paths cross each other in the area of Tukul Emeni, at a place where a rough monolith (OAZ III) was erected in late Pre-Aksumite times. This may confirm that these paths correspond to ancient roads and the monolith was a landmark. The monolith is almost perfectly aligned to two mountains with an important symbolic meaning in the local traditions: the so-called Mountain of the Serpent to the west and Abba Garima to the east of Aksum. Thus, the hill may have been incorporated into a regional symbolic landscape in ancient times

Excavation

Three sites recorded in the survey were selected for test excavation: Baati Asba, Gunda Nebri, Tukul Emeni.

Baati Asba. Baati Asba (# 12; 14°08'82" N, 038°41'98" E) is a rock-shelter on the northwestern slope of Bieta Giyorgis. It is 3.5 m deep (north-south) and 2.5 m wide (east-west). No artifacts were found in the topsoil except for those collected on the surface. The deposit, ca. 50 cm thick and disturbed by roots and animals, consisted of a soft gray clay soil (SU1) and a soft gray clay soil (SU2). Stone flakes, pottery, animal bones, and charcoal were collected in these strata. The potsherds can be ascribed to three or four vessels. The industry seems to be the result of core reduction and flaking activities; no tools were identified.

Gunda Nebri. Gunda Nebri (# 25; 14°08.78 N, 038°42.83 E) is an open air site on the northeastern edge of Bieta Giyorgis. No ancient structures were found at this site, but the pottery was placed around and beneath two large natural tabular/rectangular boulders. Several complete pots were collected. They were separated by layers of small stones. The good preservation of the ceramics suggested that they were *in situ* and some may have been intentionally broken with stones. Finds included 23 complete or almost complete vessels, such as elongated beakers with a handle, small model vessels, and black-topped dishes or open bowls. The model vessels and the whole context of deposition suggest that this site was a ceremonial area, perhaps an offering place.

Tukul Emeni. Tukul Emeni I (#3; 14°08'63" N, 38°42'70" E) is situated on a low, crescent shaped ridge that is an extension of the one on which OAZ III (14°08'58" N, 38°42'68" E) is located. The excavation has uncovered the remains of a small stone structure unlike those excavated at Ona Nagast in previous seasons. It appears to have been an isolated building, not part of a larger complex. The structure consists of two stratigraphic units: 1) architectural ones or constructed features and 2) sediments deposited horizontally around or within the architectural units. Three distinct, architecturally defined living areas or "rooms" were identified during the 2000 season.

The stone walls uncovered at Tukul Emeni are, in general, the same as those encountered at Ona Nagast. The walls range in width from ca. 56 cm to 64 cm, and are composed of a combination of flat, tabular, and polygonal syenite and metamorphosed sandstone rocks, many of which show signs

of rough hammer working. The rocks are, in most cases, laid uncoursed and are set in a thin application of mud mortar. An exception to this is seen in the exterior surface of a wall (SU13) where three courses of carefully hammer worked rectangular stone blocks run the length of the exposed surviving wall and are set on top of the more common uncoursed flat, tabular, or polygonal rocks. None of the walls at Tukul Emeni I are stepped, which is a characteristic architectural feature of large, multi-storied Aksumite structures.

The 2000 excavation at Tukul Emeni I has given us a new perspective on the settlement pattern of Bieta Giyorgis in Aksumite times. The structure uncovered here is unlike those found at Ona Nagast in several ways. Tukul Emeni I is a small, isolated structure and is not part of a larger structural complex. Although in general the stone construction methods used here are the same as those at Ona Nagast, there seems to have been more care in wall construction, with several examples of well dressed stones set in formal courses, and frequent use of dressed sandstone blocks. The cross-section of wall SU12 (exposed at doorway SU21) shows evidence of packing the "core" with randomly oriented smaller rocks of various shapes while the exterior surfaces are the usual carefully placed flat or tabular rocks. This is a construction technique not noticed at other Aksumite structures excavated on Bieta Giyorgis. Another distinguishing aspect of the structure at Tukul Emeni is the composition of the cultural deposits. The sediments filling and covering the rooms contain no charcoal, no animal bone, and relatively little pottery, glass fragments, beads, or metal artifacts. The total absence of charcoal and animal bone indicates that this was not the site of food preparation or consumption. This differs strikingly from the deposits at Ona Nagast, where charcoal and animal bone were abundant in all levels. The material remains at Tukul Emeni indicate that this structure was not used for domestic activities but rather was used for specialized activities, perhaps religious in nature (given the presence of the sculpted cross). Next season's work will focus on full excavation of the interior and exterior areas of Tukul Emeni I in order to understand its construction history and determine its use through time.

The Pottery

The study of the ceramics assemblages is still in progress. At present, on the basis of the pottery typological and chronological sequence, the sites can be ascribed to the following periods and phases:

Pre-Aksumite Period (800-400 BC): sites # 6(?), 9(?), and 56(?).

Proto-Aksumite Period (400-150 BC): sites # 4, 19(?), 23(?), and 51(?).

Aksumite 1 Phase (150 BC-AD 150): sites # 9, 13, 23, 24, 51, 52, 53, 57, 58, and 64.

Aksumite 2 Phase (AD 150-400): sites # 9, 13, 22, 24, 51, 57, 58, 60, 62, 63, 64, and 66.

Aksumite 3 Phase (AD 400-550): sites # 6(?), 9, 24, 51, 64.

Aksumite 4 Phase (AD 550-700): sites # 6 (?), 9, 19, 24, 26, 47(?), 51(?), and 64(?).

Post-Aksumite Period (from AD 700): sites # 8, 9, 12, 13, 14, 15, 18, 23(?), 24, 26(?), 31, 47, 51, 57, 61, 62, 63, 64.

Most likely, several sites were used for very long periods or reused in different phases. Some sites (# 5, 7, 8, 10, 11, 15, 21, 23, 30, 31, 32, 34, 56, 59, 61) can be described as generically Aksumite. Some sites could not be classified because of the absence of ceramics (# 16, 17, 20, 27, 28, 48) while site # 49 is modern.

Materials were also collected in four sites in the area of Ona Enda Aboi Zewge. Three collections (#1-3) were in the northern sector of the site, and correspond to the area of Tukul Emeni (#3), less extensively excavated in the previous seasons, except for units OAZ III/1994 and OAZ IV/1995. The ceramics from site #1 at Tukul Emeni date to the Aksumite 1 and 2 phases with some Proto- and Post-Aksumite features. The ceramics collection from site #2 at Tukul Emeni date to Aksumite times. The pottery from site #29 dates to the Aksumite 1 Phase with some Aksumite 3-4 and Post-Aksumite elements. Eighteen systematic collections were conducted at Ona Nagast. The typological sequence of the ceramics from the collections at Ona Nagast suggests the following dating of the single areas:

Pre-Aksumite Period (800-400 BC): sites # 44 , and 52 (?).

Proto-Aksumite Period (400-150 BC): sites # 36 (?), 38 (?), and 44 (?).

Aksumite 1 Phase (150 BC-AD 150): sites # 33, 35, 37, 38, 39, 42, 44, 46, 52, and 63.

Aksumite 2 Phase (AD 150-400): sites # 33, 35, 36, 37, 38, 39, 42, 44, 45, 46, 52 (?), and 63.

Aksumite 3 Phase (AD 400-550): sites # 33, 37, 38, 39, 42 (?), 44, 52 (?), and 63.

Aksumite 4 Phase (AD 550-700): sites # 33 (?), 37 (?), 38 (?), 39, 40, 41, 42, 43, 44, 46, 52, and 63

Post-Aksumite Period (from AD 700): sites # 35, 36, 37, 39, 46, 50, 52, 54, and 63. A few Aksumite potsherds were collected at sites # 35 and 54.

The ceramics from Baati Asba (# 12) are brown in color with a gray internal core and mineral inclusions. The walls are usually less than 0.5 cm thick. The external surface is often decorated with grooves, round or squared impressed notches, and a "comb" rocker impressed pattern. The coiling technique was used to make the conical base of a pot decorated with a comb rocker impressed pattern. These ceramics can be ascribed to three or four vessels. The decoration is in the range of variation found in the Late Stone Age/Pastoral Neolithic of East Africa and is unrelated to Pre-Aksumite, Aksumite, and Post-Aksumite pottery traditions. The decorative patterns, the paste, and the use of coiling technique also reminiscent of the thin, coarse ware, dated to the 3000-1000 BC, from the Gobedra rock-shelter (see Phillipson 1977:75-76, 81, Fig. 16, 3-16). The ceramics from Gunda Nebri (# 25) included small jars and basins with a flaring rim, elongated beakers with a handle, bowls with a small ring base, small size model vessels, and black-topped small bottles, dishes or open bowls, and many other hundred fragments of the same types of vessels. The clay is usually reddish brown or orange with a dark gray core, mineral inclusions, and sometimes mica. The occurrence of black-topped ware with a very well polished surface is remarkable. The occurrence of Proto-Aksumite features on black-topped bowls, dishes, and bottles, which are typical of Pre-Aksumite Period (Fattovich 1980:28-29), may indicate that Gunda Nebri dates to the very beginning of the Proto-

Aksumite Period. Similar assemblages with pottery showing an association of Pre-Aksumite and Proto-Aksumite features were already collected at Bieta Giyorgis in some rock-cut pits beneath the foundations of the monumental building at ON IX where they are radiocarbon dated to 203, 320, 342 BC, and 197 BC.

The ceramics from Tukul Emeni (# 3) include red Aksumite and later gray Post-Aksumite wares. The upper layers of the sequence seem to be mixed and suggest that Aksumite layers were disturbed in Post-Aksumite times. The ceramics from the topsoil included red ware, some fragments of globular small bottles with vertical cylindrical high neck with typical Aksumite grooved decoration, fragments of red ware ring base, several fragments of red ware rectangular basins, fragments of a Mediterranean ribbed amphora, fragment of rim of an orange ware small cup with vertical rounded rim, a fragment of flaring rim of an orange ware bowl, fragments of red ware circular basins with deeply incised decoration on the internal surface. These ceramics can be ascribed to the Aksumite 3 or very beginning of Aksumite 4 Phase. Most likely, this assemblage represents a mixture of Aksumite 4 materials with potsherds from earlier layers. In other trenches fragments of Post-Aksumite gray and green-gray ware were also collected in the topsoil. The ceramics from the deeper layers included Aksumite Red Ware basins decorated with typical grooves alternated with impressed dots, basins with deep incised patterns on the internal surface, small orange bowls with flaring rim, Sasanian blue glazed ware, as well as Mediterranean African Red Slip ware, and fragments of ribbed amphora. These layers can be firmly dated to the Aksumite 3 Phase. The deepest layer in Room 3 may be earlier (Aksumite 2 Phase?).

Palaeoethnobotany

A total of 21 samples amounting to 112.2 litres of sediment from Bieta Giyorgis were processed for flotation. Most sediments originated from Ona Nagast, but a small number were obtained from Baati Asba and Gubunda Nebri, which are small sites recovered during the 2000 survey. In total, 1072 seeds and 5 chaff elements were identified.

Cereals. *Triticum durum/aestivum* (free-threshing wheat): Three grains of free-threshing wheat (*T. durum/aestivum*) were recovered from ON XIII Extension West SU7. Based on grain morphology alone, it is not possible to distinguish between durum (*T. durum*) and bread wheat (*T. aestivum*). Rachis fragments, which allow this distinction to be made, have not been found in Ona Nagast deposits to date.

Triticum dicoccum (emmer): One emmer grain (*T. dicoccum*) was identified in ON VII SU70. Emmer chaff elements, which may be indicative of domestic processing activities were not recovered in samples examined this season. *Hordeum vulgare* (hulled barley): A total of six hulled barley grains was identified in Ona Nagast samples, in addition to four chaff fragments (rachis internodes). None of the rachis segments was sufficiently complete to determine the presence of two- (*H. vulgare* var. *distichum*) or six-row (*H. vulgare* var. *hexastichum*) varieties of barley.

Eragrostis cf. *tef* (tef): Nineteen probable tef caryopses were recovered, most of which are concentrated in ON XIII Extension West SU7 and 8. Both SUs clearly represent domestic contexts of recent age. These determinations must remain as "probably domesticated" (cf.) for the time being. Measurements of all archaeological grains were completed this year. Although some headway has been made in solving the problem of distinguishing domesticated (*E. tef*) from wild tef (*E. pilosa*) (Jackman 1999), further experimentation is currently underway. Until this study is complete, determinations of the domesticated form must remain tentative. Clearly small-grained specimens are identified as *Eragrostis* species under the section of Weeds and Wild Plants in Table 1, while larger-grained individuals are designated probable tef (*E. cf. tef*).

Indeterminate cereal fragments were recovered in most contexts, with no obvious concentrations in any specific area of the site. These specimens represent fragments of larger-grained cereals, most probably wheat and barley. As such, the presence of one cereal fragment at the pre-Aksumite site of Baati Asba, is worthy of note.

Other domesticates. Ona Nagast contexts produced two lentil (*Lens culinaris*), three linseed

(*Linum usitatissimum*), and one grape (*Vitis vinifera*) seed. A high concentration of linseed was reported for ON XIII SU7, and all linseed specimens recovered this season originated from the same context.

Weeds and other seeds. New genera of weeds and other wild seeds identified this season include two grasses, *Cynodon* and *Echinochloa*. The only new family determination was Cyperaceae (sedges). The high concentration of *Brassica* in ON XIII Extension West SU7, noted previously, occurred in similar contexts analysed this season. Overall, these contexts have produced the highest numbers of seeds, the greatest species diversity, and the highest seed densities (number of seeds per volume of soil) of all samples examined to date from Ona Nagast. This excellent level of preservation is almost certainly due to the recent age of SU7. The presence of cereal remains, such as free-threshing wheat, barley (grain and chaff), probable tef, and linseed is not unexpected for a domestic context. The inclusion of goat dung pellets containing embedded charred seeds of a wild mustard (*Brassica*) provides convincing evidence that these deposits are related to dung burning. This high concentration of *Brassica*, in addition to several other herbaceous species, especially grasses such as *Eragrostis* and Poaceae, is consistent with species present in grazing lands in the Mekelle region. Furthermore, tef straw is considered to be the highest quality fodder today (D'Andrea et al. 1999). Consequently, large quantities of *Eragrostis* grains in these deposits may have originated as cleanings from tef harvests fed to livestock or from grazing in open fields, eventually finding their way into dung fuel deposits. Other potential fodder plants represented include the Trifoleae (*Trifolium* and *Astragalus*). The suite of species recovered in SU7 could be of some utility in the interpretation of more ancient deposits that originated with the burning of dung as fuel. For example, it is possible that a similar spectrum of seeds is represented in ON VII SU70, 83 and 88. Here, several cereals and other domesticates are found in addition to grains of *Brassica*, *Eragrostis* and Poaceae. In this group of contexts, SU83 has significantly higher densities of seeds, due to the many grass seeds (Poaceae and *Eragrostis*) and cereal fragments recovered, making it possible that it at least partially represents the residues of dung burning.

Ethnoarchaeology

Preliminary ethnoarchaeological investigations were initiated at the village atop Bieta Giyorgis in the 2000 field season. The goal of these studies was to pinpoint features of modern-day traditional village life that might be useful as archaeological correlates for the interpretation of ancient material culture. Informants were interviewed on several topics: settlement and oral history, land use, crops grown and domestic architecture. These areas of questioning were originally developed in an ethnoarchaeological study undertaken in the Mekelle area, where they were found to produce useful insights relating to the archaeological record (D'Andrea et al. 1999). Summary responses to each set of questions are provided below. It is important to emphasize that interviews were conducted over a short period of time (two weeks). Although comparison with a completed ethnoarchaeological study may strengthen some observations, much of what follows should be considered preliminary.

Settlement and Oral History

Oral history suggests that the Aksumites lived on Bieta Giyorgis, where they were very prosperous. They built their residences at Ona Nagast (which means "ruins of kings' houses"). After the arrival of the Arc of the Covenant, the Aksumites felt it was unsafe to keep it on Bieta Giyorgis because it was too exposed. In order to protect the arc from their enemies, they decided to move it down to its present location in St. Mary's Church, Aksum. Following the departure of the Aksumites, Bieta Giyorgis was used for grazing and cultivation purposes only. Residences were not constructed there again until recent times. The four oldest compounds on Bieta Giyorgis were built during the time of Haile Selassie (ca. 45 years ago), and in each case occupation has been continuous to the present day. Only one of the original four owners is still alive, and much of what follows is based on an interview with this individual. Before the building of these original four residences, Bieta Giyorgis was used only for cultivation and grazing. At that time, fewer people lived in Aksum, and there was no need to build residences on Bieta Giyorgis. The only building activities known to have taken place were the construction of erosional terraces and raised footpaths (*dajet*) to demarcate fields.

Occasionally, people from Aksum brought their cattle up to Bieta Giyorgis to graze, and sometimes they camped overnight. Much of the hill-top was covered with forests. One elder stated that in his youth, he lived in rented property in Aksum, but because his fields were on Bieta Giyorgis, he finally decided to move there to be closer to his fields.

Land Use

The major categories of land use on Bieta Giyorgis are: residential, cultivated land (rain fed), forest conservation, and unmanaged communal grazing lands. There are no lands under irrigation, but two wells are found in an area called Mai Agam. One well is used to water livestock while the other provides drinking water for residents. There is a cistern near Ona Nagast that collects rainwater during the *kremt* rains. In times of water shortages, Bieta Giyorgis residents use the Mai Shum or Mai Keireh. All land on Bieta Giyorgis is owned by current residents. Although they often work land in other areas, they do not own land beyond Bieta Giyorgis. The oldest residences are located on raised rocky hillsides, which makes the main courtyards rather steep. A similar pattern is noted in villages of the Mekelle area where reasons for locating residences on raised ground include the preservation of cultivated land and avoidance of malaria (D'Andrea et al. 1999). Livestock graze within residential compounds and in two large unmanaged grazing areas on Bieta Giyorgis. There was not enough time to locate the unmanaged grazing areas this season, but one informant estimated that they were about 8 *tsumdi* each. This management style of grazing land is different from that observed in the Mekelle region where residential compounds are much smaller and do not include separate grazing areas. In addition, communal grazing areas are strictly managed. On Bieta Giyorgis, livestock feed on unmanaged grazing land, fallow fields, wheat/barley/tef straw, and cut grasses from the Forest Conservation Area. During the *kremt* rainy season, livestock is fed mainly tef straw, and following the harvest they are allowed to graze in fields. Other fodder types are available year-round. Access to the Forest Conservation Area is restricted. There are two main uses of this area: wood cutting for fuel and building (only in December), and harvesting of grasses and other understory elements which are fed to livestock (only in

September-October). Permission to harvest trees must be obtained from the *Tabia* administration.

Crops Grown

Crops grown in any given year on Bieta Giyorgis include at least four landraces each of tef, barley, wheat (tetraploid and hexaploid), as well as *hanfetse* (intercropped wheat and barley), red and black finger millet (*Eleusine coracana*), grass pea (*Lathyrus sativus*), sorghum (*Sorghum bicolor*), lentil, peas (*Pisum sativum*), fava bean (*Vicia faba*), fenugreek (*Trigonella foenum-graecum*), linseed, noog (*Guizotia abyssinica*), and maize (*Zea mays*). The seasonal schedule of agricultural activities is very similar to that recorded for the Mekelle area (D'Andrea et al. 1999). The main period of rainfall comes during the *kremt* (June-October), and like the Mekelle area, *belg* rains have disappeared over the past several years. The crop rotation cycle is tef, followed by wheat, barley, *hanfetse*, and one year of fallow.

Domestic Architecture

Two residential compounds on Bieta Giyorgis were mapped and occupants interviewed on use of space. The compounds are large with several walled sections used as holding/feeding areas for livestock and hay storage. These recorded structures are in contrast to those in the Mekelle area where compounds are smaller and less complex, and livestock is kept in the main courtyard overnight. Both compounds studied on Bieta Giyorgis are very similar in terms of the layout of rooms. Each has three separate structures with four or five rooms: one kitchen, two or three guest/storage rooms (at least one of which is two-storied), one current living/sleeping room. In both compounds the main courtyard area is rocky and situated on a relatively pronounced slope. Kitchens are circular in plan view with a thatched roof. Unlike those observed in the Mekelle region (D'Andrea et al. 1999), kitchens on Bieta Giyorgis have solid foundations and mortar is used in their construction. The reason for this may be that when the initial owners arrived, they lived in their kitchens while living quarters were under construction. Permanent stoves in each

kitchen consist of a *mogogo* (ceramic griddle), *mechlohachen* (metal griddle) and a *wot* pot cooker. Usually two grinding tables (*metahan*) are kept in the kitchen, however, these are used only rarely today. Considerable quantities of fuel (wood kindling and dung) are stored in the kitchen as well as ceramic water containers. This practice differs from that observed in Mekelle where farmers do not store anything in kitchens (D'Andrea et al. 1999). In both Bieta Giyorgis compounds, beehives are stored in one of the guest/vacant rooms. Except for kitchens, construction methods used for all other buildings appear to be similar to those reported in the Mekelle area (D'Andrea et al. 1999).

Inscriptions

Rock inscriptions have been recorded at sites #20, 27 and 55. The inscriptions at sites #20 and 55) were already discovered and translated (Ricci 1990:130-135). The rock inscription at site #27 was engraved on a natural rock dominating the area of Geza Agumai in the northeastern sector of the top of the hill. The occurrence of rectangular cuts in the rock suggested this was originally a stele quarry. The inscription consists of three unvocalized alphabetical signs of difficult interpretation because of their bad preservation. These signs can be tentatively read either *raqb* or *bqr*. The former reading is unknown in ancient Ethiopic, and might be related to South Arabic *raqb* (to conspire). The latter reading might be related to ancient Ethiopic *qabara* (to bury) or *qabare* (burial), and seems more consistent with the location in a stele quarry.

Conclusion

The 2000 field season provided new and more detailed data for a more careful reconstruction of the changes in the settlement pattern, and land-use and landscape history at Bieta Giyorgis in the last 2500 years. In particular, the present research approach that combines site, off-site and landscape archaeology, ethnoarchaeology, and ethnohistory, seems very promising for modeling the ancient rural landscape of the area and its transformation through the time.

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