

■ ETHIOPIA

The IUO/BU Archaeological Expedition at Bieta Giyorgis (Aksum), 2002 Field Season: A Preliminary Report

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Introduction

In May-June 2002 archaeological excavations were conducted on Bieta Giyorgis hill, Aksum (Tigray, Ethiopia) by the Istituto Universitario Orientale, Naples (Italy) and Boston University, Boston (USA) under the direction of Prof. Rodolfo Fattovich and Prof. Kathryn Bard. Members of the expedition included Dr. Michael Diblasi, Dr. Andrea Manzo, Dr. Cinzia Perlingieri, Dr. Laurel Phillipson, Ms. Federica Sulas, and Mr. Stefano Tilia. The Authority for the Research and Conservation of the Cultural Heritage, Addis Ababa, was represented by Ato Telhaun G/Sellassie and W/o Tsahai Eshete. The Bureau for Culture and Information, Mekele, was represented by Ato Masrat Haile Sellassie. The Bureau for Culture, Information, and Tourism, Aksum, was represented by Ato Heluf Berhe. Archaeological survey of the top of Bieta Giyorgis hill, begun in 2000, was continued and some of the sites located earlier were re-examined. Excavations were conducted at six sites: Ona Nagast (ON), Ona Enda Aboi Zewgè (OAZ), Guadguad Agazien, Qalqal Asba, Tukul Emeni II, and Mai Agam. Laurel Phillipson, Cambridge, U.K., ex-

amined the collection of lithic artifacts excavated from 1993 to 2002. Mapping was continued by Stefano Tilia.

Archaeological survey

Survey of the top of Bieta Giyorgis hill was continued in 2002 by Federica Sulas, as part of research in landscape archaeology to investigate the relationship between settlement patterns and environmental resources, and to reconstruct models of ancient land exploitation. The main streams draining from the top of the hill and some features visible on aerial photographs were examined. Four streams were surveyed: Guadguad Agazien, Mai Lahlaha, Malab Dabbas and Asba. The Guadguad Agazien stream drains across the eastern slope of the hill. The upper bed of this stream cuts through land used for grazing and cultivation. Several terraces, almost perpendicular to the bed of the stream, were noted. Most of these terraces were built during the Derg years (1975-1991), but a few of them, with a different orientation and construction, may be ancient and were located with GPS. At least two steps were also recorded on the northern edge of the stream, near a basin associated with two dams, which were excavated in 2001. Several concentrations of scattered potsherds were recorded on both sides of the stream, particularly along the upper bed. The Mai Lahlaha stream drains across the western slope of the hill. The upper bed cuts terraced farm land. A previously recorded site with lithic tools, Mai Agam, at the eastern side of the stream, was more extensively investigated.

The Malab Dabbas stream drains across the southern slope of the hill. No archaeological evidence was found along this stream, except for a few scattered potsherds, which were probably washed downhill by soil erosion. The Asba stream drains across the northern side of the hill. Two sites were recorded here on the slope of the hill. Unworked blocks of chert and quartz are frequent in this area. Some previously recorded sites, at Enda Garages, Grat Sawur, and Zeban A and B, were re-examined, and artifacts on the surface of these sites were collected. A high concentration of fragments of red ware and lithic tools was found at the Enda Garages A site. The surface collection included ceramics of red and dark gray wares, some chert flakes, and one obsidian blade. The artifacts suggest an occupation of the site in Early Aksumite times (mid-1st century BC to mid-1st century AD).

The second site, Grat Sawur, is located at the confluence of the Asba and Mai Taha streams. This site is characterized by a high frequency of red potsherds and lithic tools. Some fragments of malachite were also collected on surface. At least two almost complete pots were visible in one part of the stream. Two sites, Zeban A and B, were recorded on the north-central outcrop of the hill, near the western slope. At Zeban B sherds of red and gray wares and a bronze Aksumite coin of the Christian period were found on the surface. A few other sites were also re-investigated: Daaro, Gobo Enda Nabri, Èetat, Walahu, Asba, Malab Dabbas, and Guadguad Agazien. New surface collections were made on all these sites to obtain more information about their function and dating. Several features were also recorded, although they were not directly associated with artifacts or other archaeological evidence. These data will be analyzed with the geological, hydrological, archaeological, historical, and cultural data which were collected during previous field seasons.

Ona Nagast (ON)

Excavations begun in 1998 at Ona Nagast XVI (northern sector of ON) were resumed by Kathryn Bard and Rodolfo Fattovich. This was originally a 4 m² test square, excavated to an average of 30/40 cm in order to investigate a previously unexplored area of the site. In 2002 a 10 m² unit (ON XVI) was excavated, including part of the earlier 4 m by 4 m square. Topsoil (SU 1, plow zone), ca. 10/15 cm thick, was removed from the whole surface of the square, and at ca. 10 cm below the surface the top of three walls (SU 3, SU 4, SU 5) emerged at the interface between the plow zone and the lower topsoil (SU 2). The orientation of these walls suggested that the structure stretched to the northeast, outside the northern edge of the excavation unit. Another contiguous excavation unit (ON XVII) was thus delimited to the north of ON XVI. After removing the topsoil, two more walls (SU 6, SU 23) emerged along the western and northern edge of ON XVII. Excavation was restricted to several squares in ON XVI and ON XVII in order to investigate the interiors of two possible rooms (Room 1, delimited by walls SU 3, SU 4, and SU 6; Room 2, delimited by walls SU 4, SU 5 and SU 3). Bedrock was not reached in any area of the excavation due to time constraints.

Four phases of site use were recognized: (1) The earliest phase is represented by two walls (SU

16, SU 21) and associated room fill (SU 22). These walls were mostly destroyed, with only the lower two courses remaining in situ. They were built on top of stone rubble from the collapse of an earlier wall (?). (2) The second phase is represented by a thick stratum (ca. 30–40 cm) of burned soil with many animal bones and pieces of charcoal. Two circular stone hearths (F 1, F 2) were associated with this phase. (3) The third phase is represented by a stratum of brown soil with pyroclastic inclusions beneath stone rubble of wall collapse of the latest stratum. (4) The latest phase is represented by several walls (SU 3, SU 4, SU 6, SU 23) and the soil of SU. These walls were mostly destroyed by more recent farming activity, and only the lower courses of stone were preserved. Most of these phases can be dated to Aksumite 2–3 times (ca. mid-2nd to 5th centuries AD). Only the earliest identified phase most likely dates to Aksumite 1 times (ca. mid-1st century BC to mid-1st century AD).

Finds include 37 ceramic disks of uncertain function. Most of these disks are associated with the most recent use of the site. The disks are roughly circular and were fashioned from potsherds. They range in weight from 2.39 g to 12.89 g. The most unusual find consists of two fragments of a flat ceramic plaque with incised lines. The lines divide the plaque into three sectors, within which are V-shaped incisions. The function of this artifact is uncertain, but it may have had a notational significance. A fragment of a ceramic figurine, of a horse's head, was found in SU 2.

Ona Enda Aboi Zewgè (OAZ)

Excavations at Ona Enda Aboi Zewgè were conducted under the supervision of Rodolfo Fattovich and Kathryn Bard. A tomb (Tomb 16) was found ca. 6 m to the northeast of Tomb 1, excavated in 1993 in the northern sector of the site. This tomb was cut in the pyroclastic bedrock and consists of a vertical shaft ca. 320 cm deep and a subterranean chamber opening at the bottom of the shaft. The shaft, which was filled with stones and soil, is ca. 75 cm x 55 cm at the top and ca. 75 cm x 75 cm at the bottom. The tomb chamber is ca. 2 m x 3 m in area. Most of the chamber roof had collapsed and only the western half of the chamber could be excavated. Ceramics excavated in the shaft fill and the chamber suggest an Aksumite 1 date for the tomb.

Guadguad Agazien (GA)

Three excavation units were opened at this site, first excavated in 2001 under the supervision of Andrea Manzo. Excavations were conducted to date and investigate the construction technique of two long walls visible on the surface, to the west of the Guadguad Agazien stream and not far from the reservoir discovered in 2001. These walls were lying on a stratum of deteriorated bedrock. The northern wall was ca. 20 m long and ca. 1.6-1.7 m thick. It was constructed with huge stone blocks and natural boulders. The southern wall was ca. 20-25 m long and ca. 1.6 m thick, and was built similarly to the northern one. A hearth, ca. 80 cm in diameter, was cut into the southern wall, and traces of Post-Aksumite occupation were found abutting it. This suggests that the massive wall had already collapsed by Post-Aksumite times, providing a *terminus ante quem* for the structure. The evidence also suggests that these walls were built in ancient times and most likely were used to direct the flow of water into the nearby reservoir.

Similar features were recorded in another area at the base of Bieta Giyorgis hill on the southeast, near an Aksumite site (Daaro). In this area there is evidence of a wall ca. 40 m long and 1.5 m thick across a stream which drains down the southeast slope of Bieta Giyorgis. The wall was probably built to prevent soil erosion, control rain water, and create a path from the Daaro site to the track to Bieta Giyorgis.

Qalqal Asba (QA)

Qalqal Asba is a site in the basin north of the central east-west crest on top of Bieta Giyorgis hill. Excavations were conducted here under the supervision of Andrea Manzo, with the assistance of Telhaun G/Selassie and Tsahai Eshete. A complete U-shaped structure (Structure A) was excavated with nine rooms and traces of at least two building phases overlapping the remains of earlier walls (Structure B). The earlier walls were discovered in the northern sector of the excavated area, where a room (Structure B Room 1) and traces of other walls were found. The walls, which were built with undressed stones, were preserved for only 2-3 courses. No entrance to Room 1 was found, but the room contained a badly preserved bench and a feature formed by four small vertical stone slabs (most likely a kind of pot stand). At least one other room, partially covered by the later

Structure A, was found to the west of Structure B Room 1. All of these structures were built on top of large boulders.

After the collapse of Structure B, a completely new structure of undressed stones was built in the area, partially on top of the earlier walls. The north-eastern corner of Structure A was reinforced with a wall abutting the southern wall of Structure B Room 1. The other rooms of Structure A were built directly on top of boulders, to the east and south of Room 1, with a central courtyard opening on the western side. At least two building phases were recognized in Structure A. Room 1 was enlarged to the west and was divided into two rooms (Rooms 1 and 2). After these changes, Structure A had nine rooms, all with access from a central courtyard except for Room 3, which could be entered from Rooms 2 and 4, and Room 5, which was intentionally filled up with stone rubble. Room 3 was a small corridor leading to a round subterranean feature 2 m deep.

The circular subterranean feature in Room 3 may have been used for storage, but probably not for water as it was plastered between the stones. A more likely use would have been to store cereals. This structure was located in the room with a floor at a higher level than that of the other rooms. On the northern side of Structure A was a monumental external façade. To the north of this façade and covering the collapsed northern walls of Structure B was a man-made clay floor with small stone chunks, similar to a paving technique already seen at Ona Nagast (e.g. the courtyard of ON IX-XIV).

The ceramics from both Structures A and B can be provisionally ascribed to the Aksumite 3 phase. At some point between AD 350 and 550 the spatial organization of the area was completely changed and a more impressive monumental structure was built. Domestic activities might have been performed in Rooms 2 and 6 of Structure A, where grinding stones, animal bones, and cauldrons blackened by fire were recovered. The pottery from Rooms 3 and 7 may have been used for storage. Future study of the materials collected in the different rooms will give a more precise idea about the use of Structure A, but the above evidence suggests that it may have been a kind of small agricultural villa, or perhaps a building for food storage and, to a certain extent, food preparation.

The dating of Structure A to Aksumite 3 times is also supported by several coins found there (one

dates to the late 4th century AD, the others to the 5th century AD). The presence of five bronze coins and a gold coin seems to suggest a certain status for the people using the structure, which is also suggested by the number of sherds of imported amphorae associated with it. The earlier Structure B possibly dates to the beginning of the Aksumite 3 phase (second half of the 4th century AD?) and it may have been a domestic structure, based on the features of the excavated room.

Tukul Emeni II (TE II)

Tukul Emeni II, excavated by Michael DiBlasi, is situated on a low ridge that extends from Tukul Emeni I (excavated in 2000-2001). The ridge arches NE-NW and forms the upper periphery of a basin of cultivated land north of the central upland in the north-eastern sector of Bieta Giyorgis. The land on which the site is located is now used for grazing livestock.

Excavation at TE II uncovered the remains of a small stone structure consisting of three rooms. The structure measures ca. 13 m x 6 m, and is oriented NW-SE. The exterior walls of the structure are stepped, and the general method of construction is the same as that observed in other Aksumite buildings on Bieta Giyorgis. The TE II structure, however, was built directly on bedrock without the use of a foundation trench. In addition, some of the exterior walls were built up against large boulders, which added extra structural support. The walls of the structure were heavily damaged by plant roots, and extensive post-abandonment disturbance is evident inside the structure. No intact, distinct living floors could be detected in any of the rooms, but a ca. 30 cm thick occupational deposit was observed which contained moderate amounts of pottery and fragments of glass, iron, and bronze artifacts and beads. Virtually no charcoal was found in the sediments excavated inside or outside the structure. The bonding pattern of the walls suggests one phase of construction. The most interesting aspect of this structure is the circular feature found in Room 1. This feature is constructed of stone and has a maximum diameter at its top of 150 cm, and a depth of 2 m. An area of white plaster is preserved in the lower portion of the feature. Ethnographic analogy suggests that the feature was a grain storage facility.

The pottery associated with TE II indicates an Aksumite 3 date, which makes it contemporary with

TE I, ca. 85 m to the south. Both were isolated structures built on high ground overlooking extensive agricultural lands. Like TE I, the TE II structure yielded little evidence of domestic activities. This suggests that activities such as food processing and cooking must have taken place outside the structure. It is also possible that TE II was used as a storage facility rather than as a domestic building, but this requires further evidence for confirmation.

Mai Agam (MA)

This site is located on a sloping terrace area near the Mai Lahlaha stream. Excavations at this site were conducted by Federica Sulas and Telhaun G/Sellassie. A large number of lithic tools and a few scattered potsherds were visible on the surface of this site and a 6 m x 1 m trench was excavated here. Artifacts from the topsoil included small chert flakes and tools, and some obsidian pieces. Artifacts from a lower stratum (SU 2) included several chert flakes and tools, and obsidian pieces. Artifacts from the lowest stratum (SU 3) included a few chert flakes and tools. The archeological evidence collected included several lithic tools in local chert. The lithics were analyzed by Laurel Phillipson, who considered this site to be a workshop of lithic tools, specialized in arrow-point production, and dating to the Aksumite period. A few diagnostic ceramics from these strata point to an Aksumite 1 date.

Mapping

Mapping was conducted by Stefano Tilia and consisted mainly of continuing what was begun in 2001, especially mapping the area around site GA I, due to the possible presence of an ancient dam/water reservoir there. Due to lack of time, only the terrain in the immediate vicinity of the site (an area of ca. 100 m x 150 m) was covered and the elevation map of the area between GA I and the southeastern plain was completed. A surface of roughly 400 m x 300 m was surveyed for a total of ca. 1200 elevation points. The other main activity consisted in surveying all trenches and uncovered structures excavated in 2002: TE II, OAZ (Tomb 16), QA, ON XVI-XVII, and MA. Each of these sites was geo-referenced and, where necessary, a schematic representation of the structures was produced through a number of survey points. A total station was used for all surveying. For geo-referencing, a number of fixed bases (estab-

lished through differential GPS measurements in 2001) provided the correlation between the local coordinate system and UTM 37.

Lithics

Examination of the flaked stone tools and associated artifacts recovered from 1993 onward from a variety of excavated contexts and surface sites on Bieta Giyorgis hill, confirms their significance in Aksumite material culture of all periods. Preliminary results provide information which amplifies our understanding of Pre- and Early Aksumite technical and economic practices, and more detailed analyses will hopefully provide significant observations concerning changing patterns in the social organization of labor. The Bieta Giyorgis lithic material is particularly significant, as much of it was recovered from dated contexts encompassing the Pre- and Proto-Aksumite periods, as well as the earlier Aksumite periods. Preliminary analysis indicates that this material represents a single, though not necessarily simple, developmental sequence whose later phases are represented by published material from sites at the foot of Bieta Giyorgis hill (eastern, southern and western sides): Kidane Mehret, Maleka Aksum, the Guditi Stela Field, and in the vicinity of Dungur. It is anticipated that a unified study of the lithic materials from the IUO/BU and BIEA archaeological projects at Aksum may provide a new series of chronological indicators paralleling and supplementing those provided by the ceramics and by coins.

Equally important, the recovery of lithic artifacts from a variety of dated contexts, including from non-specialized and specialized tool production sites, specialized tool utilization sites, deliberate placements as grave goods in burials, and as components of the general detritus recovered from domestic and other sites, permits a unique understanding of the adaptation of lithic tool production and use to meet changing economic and social needs. At Aksum we have a detailed, dated record of evolving lithic tool production and use spanning a period which witnessed the incorporation of a pre-existing Late Stone Age industry or industries into a complex urban economy and its development over a period of approximately one thousand years.

At present, knowledge of the Aksumite lithics sequence is based almost entirely on industrial assemblages: a Pre- or Proto-Aksumite quarry, and a

generalized, eclectic tool production site at ON II; Aksumite 1 production of flake tools (including small tanged points) at ON II and Mai Agam; Aksumite 2, apparently exclusive specialization in the production of flake points at Mai Agam; perhaps later exclusive production of some (unknown) flake tool type at two sites (ON 31a and ON 31b) where surface collections were made; late Aksumite specialized production of convex scrapers near Dungur at the foot of Bieta Giyorgis hill; and utilization of Guditi scrapers at a nearby site also at the foot of Bieta Giyorgis.

Lithic artifacts recovered from the excavation of a small rock shelter, Baati Asba, on the northern slope of Bieta Giyorgis hill, do not appear to be part of this Aksumite sequence, which they most likely predate, and from which they differ in raw material and in technology. The Baati Asba material is a small-blade based industry like those recovered at similar sites, Baati Nebait, Anqer Baahti and Gobedra Rockshelter. The use of lithic artifacts did not cease at the end of the Aksumite period. A small sample from the Post-Aksumite site of Daaro contains miscellaneous fragments of no particular significance. Some casual use of flaked stone tools for wood-working continued well into the 20th century.

Of the lithic material recovered from non-industrial sites, the beautifully fashioned chalcedony crescents from several OAZ mortuary contexts are of special interest. The distinctively fine, uniform translucent chalcedony of which these crescents were made was apparently worked locally. Flakes and debitage of this material are included in the ON XIII assemblages. Other chalcedony crescents, recovered from domestic and/or miscellaneous contexts, show a pattern of use wear along the distal portion of their sharp edge without heavy wear on the distal point nor on the backing, indicative of their having served as arrow barbs.

A general difference between the lithic material recovered from some Bieta Giyorgis contexts and that from all "downtown" Aksum sites is the greater use of chalcedony relative to chert at the former. It is not yet clear whether this may be correlated with factors of time difference or raw material accessibility, or perhaps attributed to tool-specific use. The patterning of lithic resource procurement and distribution is one of a number of topics for future investigation.