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Rodolfo Fattovich

From Monuments to Landscape: Archaeology at Aksum, 1905/1906–2005

INTRODUCTION

Aksum was the capital city of one of the earliest kingdoms in Africa to the south of the Sahara. This kingdom dominated the southern Red Sea region in the 1st millennium A.D., and had a very important role in the development of the trade circuit between the Mediterranean Sea and Indian Ocean, as far as the Indian subcontinent, in Roman and Byzantine times. Actually, in Late Antiquity the kingdom of Aksum was included into a network of commercial and cultural contacts stretching from the eastern Mediterranean region and Nubia to southern Arabia, and India. At the peak of its power in the 3rd century A.D. Aksum was regarded by Mani as one of the four most powerful kingdoms in the world, together with Persia, Rome, and central Asia (Monneret de Villard 1948).

Despite the relevant commercial and political role of the kingdom, the history of Aksum is scarcely documented by contemporary textual and epigraphic sources, including local inscriptions. These sources record the existence of a city at Aksum in the mid-1st century A.D., the inclusion of Yemen into the area of Aksumite political influence (and possibly dominion) in the 3rd century, raids to the Nile Valley in the late 3rd–early 4th centuries, the introduction of Christianity as a state religion in the mid 4th century, the re-occupation of Yemen in the 6th century, and the decline of the kingdom with the abandonment of the capital city in the 8th–9th centuries¹. For a long time coins dating to the late 3rd–mid-7th centuries A.D. were the main evidence to outline the chronological sequence of the Aksumite kings and major changes in kingship ideology².

Beginning in the early 20th century archaeology provided more and more significant

evidence for reconstructing the formation, consolidation and decline of the Aksumite state and outlining the development of the ancient capital city³, although her crucial contribution to Ethiopian studies has been recognized only in the last three decades⁴. At present, however, also the picture emerging from archaeological investigation is still fragmentary, as most of this research focused on Aksum in northern Tigray⁵, and three other Aksumite cities – Matara, Qohaito and Adulis – in Eritrea (see Anfray 1974; Wenig 2002).

The *Deutsche Aksum-Expedition* led by Enno Littmann in 1906 was a corner stone in Aksumite archaeology. This expedition exhaustively recorded the ancient remains at many sites in Tigray and Eritrea, and laid the foundations of historical archaeology in the northern Horn of Africa. In particular, the German expedition carefully investigated the site of the ancient capital city at Aksum, conducting some excavations and describing all ancient monuments, which were visible on the surface in the area of the traditional town (Littmann *et al.* 1913; see also Phillipson 1997).

Subsequent archaeological investigation in the region of Aksum greatly expanded the evidence DAE collected, and provided a more detailed reconstruction of the origin and development

¹ See Conti Rossini 1928; Munro-Hay 1991; Brakmann 1992.

² Munro-Hay 1984; Munro-Hay / Juel-Jensen 1995; Pedroni 1997.

³ See Anfray 1963; Brandt / Fattovich 1990; Fattovich 1992, 2001.

⁴ The first class (now chair) of "Ethiopian Archaeology" was established by Lanfranco Ricci at the Oriental Institute, Naples (Italy), in 1974.

⁵ See Anfray 1972; Munro-Hay 1989: 27–31; Phillipson 1997: 183–194; Fattovich *et al.* 2000: 29–30.

of the city and the Aksumite kingdom, with a progressive change from a descriptive and classificatory approach to a multidisciplinary one aimed at outlining the cultural and environmental history of the kingdom⁶.

In this paper the major steps in the archaeological research at Aksum during the last one hundred years, and the present state of art about the origin and development of the ancient city will be outlined.

THE ANTECEDENTS: REDISCOVERING AKSUM (16TH–19TH CENTURIES)

In medieval times, from the 8th to 16th centuries, textual sources are silent about Aksum, reflecting the substantial isolation of the northern highlands in Ethiopia and Eritrea, although Coptic and Islamic sources record the existence of a Christian kingdom in the region (see Conti Rossini 1928: 281–333; Munro-Hay 1997). Only Ethiopian sources provide us with some information about the history of the city in the late 1st to early 2nd millennia A.D. According to these sources Aksum was the residence of a kinglest and suffered from destruction because of at least two invasions by southern people in the 10th–11th centuries⁷.

Contacts with Europe were resumed in the late 14th century and culminated with the arrival of a Portuguese delegation to Ethiopia in 1520 and Jesuit missionaries in the late 16th and early 17th centuries (Conti Rossini 1928: 9–14). As a consequence of the reopening of the Christian kingdom to foreigners Aksum was again visited by travellers, who left some descriptions of the ancient monuments and suggested some interpretations of the origins of the Aksumite civilization (see Fattovich 1992: 5–9).

The earliest description was by Francisco Alvarez, who published in 1540 a detailed report of his visit to Ethiopia from 1520 to 1526 as a chaplain of the Portuguese delegation⁸. In this report Alvarez carefully described the ancient Aksumite church of Maryam Tsion, which was destroyed a few years later by Muslim invaders⁹, and recorded other monuments, such as thrones, stelae and the hypogean tombs of Kaleb and Gabra Masqal. In particular Alvarez noticed the occurrence of thrones with inscriptions along the Mai Hejja (see Monneret de Villard 1938a: 14).

In the late 16th to mid-17th centuries the Jesuit missionaries Almeida, Mendez, and Paez

recorded the ruins of the church of Maryam Tsion, the monumental stelae and the hypogean tombs of Kaleb and Gabra Masqal (see Monneret de Villard 1938a). At the end of the 17th century Charles J. Poncet (1709) described in a very cursory way the monumental stelae, and remarked that doors were carved at the base of some of them (see also Monneret de Villard 1938a: 78–79).

In 1770 the Scottish traveller James Bruce was in Aksum and described the monumental hewn stelae along the Mai Hejja (Bruce 1791, III: 143–150). Bruce identified these monuments with obelisks decorated in a Greek style, and suggested they were erected by Ptolemy III Euergetes.

In the 19th century Aksum was visited by English, German and French scholars. These travellers provided the first archaeological maps of the town and more detailed descriptions of the visible monuments (see Fattovich 1992: 11–21).

Henry Salt visited Aksum in 1805 and 1809, providing a very accurate description of the stelae, thrones and the church of Maryam Tsion, together with the first archaeological map of the town. In particular, according to Salt the monumental hewn stelae were carved by Greek workers coming from Egypt. Salt also recorded some inscriptions including the pagan one of Ezana, he correctly dated to the first half of the 4th century A.D. (ca. A.D. 327), and suggested an African origin of the ancient Aksumites (Lord Valentia 1809; Salt 1814: 404–418).

Eduard Rüppell was in Ethiopia in 1830 to 1834. He described the monuments and inscriptions at Aksum, and provided the first illustration of Aksumite coins (Rüppell 1838–1840).

Theophile Lefévre explored Ethiopia in 1839 to 1843. At Aksum the French scholar discovered the relief of a lion (or lioness) carved on the hill of Gobedra, ca. 5 km to the west of the town. Lefévre was the first

⁶ Bard 1997; Bard *et al.* 2000; Fattovich 1997.

⁷ Conti Rossini 1928: 284–290; Monneret de Villard 1938a: 21; Sergew Hable Sellassie 1972: 225–232; Tadesse Tamrat 1972: 38–41; Munro-Hay 1997: 134–138.

⁸ Alvarez 1540 (1958 ed.). A careful description of the church is also in the *Liber Axumae*, dating to the 15th century, see Monneret de Villard 1938a: 21–31.

⁹ Today only segments of the stepped platform on which the church was built are visible.

traveller to distinguish three main types of stelae: hewn monoliths, monoliths with a rounded top, and rough monoliths. According to this scholar, the Aksumite culture was largely affected by a Greek influence due to the occurrence of Greek and Byzantine settlements in northern Ethiopia. He also suggested that some monuments at Aksum showed evidence of a Ptolemaic influence (Lefébvre 1845–1854, III: 428–437).

Finally, in 1890 the ancient monuments at Aksum were carefully described by Theodore Bent. The British explorer ascribed the origins of the Aksumite civilization to South Arabian colonists who mixed with the local people and were affected by a Greek influence (Bent 1893).

With Bent the exploratory phase in Aksumite archaeology was concluded. The main result of these early explorations was the identification of the ancient Aksumite civilization, with a description of the major monuments at Aksum, such as the thrones, stelae and hypogean tombs.

THE DAE AND THE “SOUTH ARABIAN PARADIGM” (1900s–1920s)

An extensive archaeological investigation at Aksum was first conducted in the early 20th century by the *Deutsche Aksum-Expedition* (DAE), under the direction of Enno Littmann with the assistance of Daniel Krencker and Theodor von Lüpke. The aim of the expedition was to collect ethnographic, archaeological and epigraphic evidence for a better knowledge of Ethiopian culture. The main results were a careful study of ancient and traditional architecture in Eritrea and Tigray by Krencker and von Lüpke, respectively, and a very important collection of Sabaeen, Greek and Ethiopic (Ge'ez) inscriptions, which were studied by Littmann (Littmann *et al.* 1913).

The DAE conducted test excavations at different sites and mapped the most impressive monuments in the town of Aksum, recording artefacts and inscriptions and providing the first description of Aksumite pottery. The impressive investigation and publication by the DAE represented the groundwork for all subsequent archaeology conducted at Aksum (Littmann *et al.* 1913 II, IV; Phillipson 1997).

The major contribution of the expedition to archaeology was an exhaustive description of Aksumite architecture, which is especially

important now since a number of monuments is either no longer well preserved, or have disappeared during the past one hundred years as the modern town of Aksum expanded. In particular, the German expedition carefully investigated a palace at Ta'akha Maryam in the southwestern sector of the town, the northern stelae field, including the present Stelae Park, along the Mai Mejja, the hypogean tombs of Kaleb and Gabra Maskal to the north of Aksum, the Gudit stelae field and the so-called Tomb of Menelik to the west of the town, as well as the monastery of Abba Pantaleon to the east of the town, where they recorded some evidence of a pre-Aksumite building (Littmann *et al.* 1913 II; Phillipson 1997).

On the collected evidence, the German scholars were able to identify the main elements of Aksumite architecture: stepped podium and indented plan of the buildings, and the so-called monkey's head construction technique. Five types of monuments were distinguished: palaces, churches with a basilica plan, tombs, stelae, and thrones. The stelae included rough monoliths, partially shaped monoliths, round-topped stelae with a smooth surface, and hewn stelae symbolically representing a palace.

In particular, Krencker suggested a reconstruction of the Aksumite elite palaces, which has been largely accepted until now. According to this reconstruction, the palaces had an indented plan with four towers at the corners, and three or more floors sustained by a stepped podium. This reconstruction, however, is speculative, although the single elements are consistent with the archaeological evidence we have (Littmann *et al.* 1913 II: fig. 245).

The German scholars correctly identified the Aksumite stelae with funerary monuments and suggested that these monuments were a regional megalithic development of the memorial monuments (*nephesh*) widely diffused among the Semitic populations, from Syria to Yemen, since the 1st millennium B.C. (Littmann *et al.* 1913 II: 1–2, 28–30). Moreover, according to Krencker the hewn stelae represented storied buildings similar to the traditional “skyscrapers” in northern Yemen (Littmann *et al.* 1913 II: 28–30).

The DAE interpretation of the Aksumite culture was largely affected by the hypothesis of a South Arabian origin of Aksum, that dominated Ethiopian Studies from the late 19th to the mid-20th centuries (see Drewes 1962: 1–4). This hypothesis was based on the indisputable linguistic link between ancient

Ethiopic (Ge'ez), recorded since Aksumite times, and South Arabic¹⁰.

Three scholars mainly contributed to establishing these assumptions: Job Ludolf in the late 17th century, Eduard Glaser in the late 19th century, and Carlo Conti Rossini in the early 20th century¹¹.

Conti Rossini, in particular, suggested that a few South Arabian tribes, including the Habashat, migrated to Africa in late prehistoric times and subjugated the local people, establishing the earliest hierarchical societies on the plateau. These Afro-Arabian tribes were later included into the Kingdom of Saba as a consequence of a Sabaeen colonization of Eritrea and Tigray in the mid-1st millennium B.C. Eventually, after the Sabaeen kingdom declined in the 4th–3rd centuries B.C., the Habashat maintained an independent state on the plateau and originated the "Kingdom of Aksum" in the early 1st millennium A.D. (Conti Rossini 1928).

Conti Rossini's reconstruction was later modified by E. Cerulli (1960), who suggested that the single South Arabian tribes established petty kingdoms, which were progressively dominated by the Habashat.

THE ITALIAN OCCUPATION (1936–1941)

No investigation was conducted at Aksum in the 1910s and 1920s, and archaeology received a new stimulus only in the late 1930s, immediately after the Italian occupation of Ethiopia.

In 1937, Ugo Monneret de Villard (1938) updated the topographic information collected by the DAE, and conducted test excavations in the area of Aksum's ancient town. Monneret de Villard also conducted the first geo-archaeological investigation in the town, and distinguished two major periods of soil accumulation, most likely due to intense soil erosion (Monneret de Villard 1938a: 7–8). The earlier one pre-dated the erection of the huge carved stelae along the Mai Hejja. The later one post-dated the decline of the ancient settlement in the late 1st–early 2nd millennia A.D. The Italian scholar also suggested that the accumulation of soil in the last centuries modified the landscape at the edge of the Aksumite plain. He remarked that there was no significant accumulation of soil in the area of the cemetery along the Mai Hejja since the stelae were erected in the early 1st millennium A.D. On the contrary, over 4 m of sediment covered the palaces in the southwestern sector of Aksum, suggesting

that the ancient town was built on a steeper slope than the present one.

In 1939 Salvatore M. Puglisi (1941, 1946) directed the first Italian Archaeological Expedition at Aksum. The long term aim of the expedition was to open the whole archaeological area in order to emphasize the richness of the archaeological heritage in the new colony, but the project had to be suspended because of the break out of World War II. Salvatore Puglisi excavated a residential "palace" in the area of Addi Kilte, to the west of the modern town, and carried out a preliminary archaeological survey in the Aksum region. At Addi Kilte Puglisi conducted the first stratigraphic excavation in Aksumite archaeology and distinguished two main phases of occupation, dating to pre-Christian and Christian times respectively. Puglisi (1941: 149–151) also found evidence of other buildings in some test excavations in the same area.

A relevant contribution of Puglisi was the identification of a lithic industry with big blades and Levalloisian-like flakes in the surroundings of Aksum, suggesting that the region was already inhabited in prehistoric times. The Italian scholar was also the first one to record and to describe a peculiar type of Aksumite scrapers, the so-called Gudit scrapers (see Phillipson 1977), and to demonstrate the survival of a late prehistoric technological tradition in Aksumite times.

Test excavations by Puglisi in the area of the market, moreover, revealed a sterile sediment, 3 m to 4 m thick, covering the archaeological remains (Puglisi 1941: 105). This confirmed that buildings were buried under meters of sediment, without any evidence on the surface¹².

During the Italian occupation in 1936–1937 the archaeological area was seriously damaged when one hewn funerary stele was removed and sent to Rome, and other monuments were destroyed to build the road to Semen and a road along the Mai Hejja (Monneret de Villard 1938a: 4, 6). The greatest damage to

¹⁰ See Ullendorf 1955; Hetzron 1972; Garbini 1984.

¹¹ Ludolf 1682; Glaser 1895; Conti Rossini 1906, 1921, 1928; see also Kammerer 1926; Coulbeaux 1929.

¹² The *Liber Axumae* (15th century) quotes two areas, 'Ahorò to the south of Mai Qoho and Farhaba, in the area of present old airport, where no evidence of an earlier occupation has been recorded. These areas might be quarters of the ancient capital city that are presently buried under meters of sediments; see Monneret de Villard 1938a: 15.

the heritage in this period indisputably was the removal of the storied stele (DAE 2, the "Obelisk of Rome") from the Stelae Park. The stele was originally located to the southwest of the so-called Standing Obelisk and lay broken on the ground. The stele was re-erected in Rome in the Piazza di Porta Capena, in front of the former *Ministero delle Colonie*, where the Food and Agriculture Organization of the United Nations is located today. In 1997 the Italian Government officially agreed to return the monument to Ethiopia, in conformity with 1947 Peace Treaty, and the monolith has been sent back to Aksum in April 2005 (see Fantusati 2004).

Despite its great ideological and emotional impact, however, this was only an episode in a process of progressive degrade of the archaeological heritage at Aksum, which started in the late 1st millennium A.D., when the ancient capital city and the surrounding area were largely deserted, as a consequence of the southward shift of the kingdom beginning in the 8th century A.D. (Monneret de Villard 1938a: 13; Michels 1990, 1994). According to local traditions, some monuments were destroyed in the 10th–11th centuries A.D., when Aksum may have suffered repeated destruction, as historical sources point to at least two invasions of the region (Monneret de Villard 1938a: 21; Munro-Hay 1997: 134–138).

Some remains of ancient palaces and/or churches to the west of Maryam Tsion, as well as inscriptions and thrones along the Mai Malahsò, were visible in the 15th– early 16th centuries, and the church of Maryam Tsion was well preserved in the early 16th century (Monneret de Villard 1938a: 14, 21–22, 34).

The town suffered from new destruction in the 16th century mainly from the invasion of the Grañ and the later Oromo invasion. Maryam Tsion was also heavily damaged by a fire at the time of Lebna Dengel (1535). However, huge remains of the ancient foundations have survived up to the present (Monneret de Villard 1938a: 21–31).

Many ancient buildings were most likely progressively destroyed in the 17th– early 19th centuries, when the town expanded from 150–200 houses to about 600 houses, as missionaries and travellers who visited the town recorded the same monuments visible today. Some ruins, however, were still visible several hundred meters to the west of Stelae Park in the early 19th century (Monneret de Villard 1938a: 14, 41).

Further damage occurred in the 19th century, when inscriptions and thrones originally located along the Mai Malahsò were removed (and sometimes probably destroyed) by the local people (Monneret de Villard 1938a: 34–36). In the second half of the 19th century the area of Malake Aksum, from Mai Malahsò to Mai Lahlaha, was occupied by houses with the resulting disturbance of the archaeological area (Monneret de Villard 1938a: 14).

Finally, in the early 20th century, the modern settlement occupied the entire area of the traditional town (see Fattovich *et al.* 2000), covering the remains of some palaces to the west of Maryam Tsion, and in the 1910s–1920s it expanded along the base of Mai Qoho hill to the east of Mai Hejja. Most likely, in these years some thrones in the Southern Stele Field were removed and possibly destroyed (Monneret de Villard 1938: 14).

THE ETHIOPIAN INSTITUTE OF ARCHAEOLOGY AND THE CHALLENGE TO THE "SOUTH ARABIAN PARADIGM" (1950s – 1960s)

In the 1950s and 1960s excavations at Aksum were conducted by French scholars for the Ethiopian Institute of Archaeology (now called the Authority for the Research and Conservation of the Cultural Heritage, A. R. C. C. H.), which was established in 1952.

In 1954 Jean Doresse (1956) excavated tombs in the so-called Bazen cemetery at the base of Mai Qoho hill, and started to investigate the royal cemetery along the Mai Hejja, where the largest Aksumite stelae are found. Excavations were continued in the royal cemetery in 1955–1956 by Jean Leclant (1959a) and in 1957–1958 by Henri de Contenson (1959, 1963b), who extended the excavations in the royal cemetery along the Mai Hejja and conducted excavations near the church of Maryam Tsion. Excavations near Maryam Tsion were continued by Francis Anfray (1965: 4–5) in 1962. These excavations, though limited in area, provided stratigraphic sequences covering the whole history of the ancient city from early Aksumite to post-Aksumite times.

In the 1960s Francis Anfray excavated an elite residence at Dungur, to the west of modern Aksum¹³. This was the second Aksumite

¹³ Anfray 1972. Unfortunately, the final report of this excavation has not yet been published.

palace extensively excavated at Aksum so far. The excavation confirmed that these palaces were square or rectangular in plan, and consisted of a central building, surrounded by open courtyards and enclosed by a range of rooms¹⁴. Anfray also recorded the occurrence of other buildings in the same area.

In the late 1950s Leclant and de Contenson investigated the plains surrounding Aksum where they recorded both Aksumite and pre-Aksumite sites, such as Ouchatei Golo, Hawlti and Melazo (Anfray 1972: 68–70). This evidence demonstrated that Aksum was not an isolated city, but was part of a larger urban territory and was preceded by pre-Aksumite settlements and ceremonial centres.

In the 1960s large scale excavations were conducted by Anfray in other two major sites, Yeha in Tigray and Matara in Akelè Guzay (Eritrea). These excavations provided more detailed evidence about the development of the ancient Ethiopian state and culture (see Anfray 1966, 1990).

On the basis of the results of all these investigations de Contenson (1961a, 1963b) and later Anfray (1964, 1967, 1969) suggested a new cultural sequence for the early historical period in northern Ethiopia and central Eritrea.

Two or three phases of Aksumite cultural development were distinguished:

- 1) Early Aksumite (pre-Christian) phase, ca. 1st–4th centuries A.D.;
- 2) Middle Aksumite (Christian) phase, ca. 5th/6th–7th centuries A.D.; and possibly
- 3) Late Aksumite phase, ca. 8th–9th centuries A.D. An earlier (pre-Aksumite) period, dating to the 1st millennium B.C., when an Ethio-Sabaeen State arose on the highlands, was also identified in the archaeological and epigraphic record.

De Contenson divided the cultural sequence in northern Ethiopia into three periods:

- 1) Proto-Aksumite or Sabaeen Period, ca. 5th century B.C. to 1st century A.D.
- 2) Pre-Christian Aksumite Period, ca. 1st to 4th century A.D.
- 3) Christian Aksumite Period, ca. mid-4th to 9th century A.D.

Anfray suggested a division into two main cultural phases:

- 1) Pre-Aksumite Period, ca. 5th century B.C. to 1st century A.D., with two phases: a) Ethio-Sabaeen, ca. 5th–4th centuries B.C. b) Intermediate, ca. 3rd century B.C. to 1st

century A.D., characterized by the emergence of a local culture derived from the earlier one.

- 2) Aksumite Period, ca. 1st–9th centuries A.D., characterized by a new cultural pattern maintaining some pre-Aksumite features, with two phases: a) Aksumite 1, ca. 1st–4th centuries A.D., corresponding to the rise of the kingdom of Aksum. b) Aksumite 2, ca. 6th–8th centuries A.D., corresponding to the peak of the Aksumite kingdom in Christian times.

The identification of the Pre-Aksumite Culture was a major result of the French investigations in the 1960s¹⁵. The occurrence of large public buildings (mainly temples), a sophisticated art, an elaborate craft of stone-carving (altars and offering tables), and bronze seals, together with the use of writing and a clearly cut site hierarchy demonstrated that a very complex society, most likely at a state scale, arose in central Eritrea and northern Tigray in the mid-1st millennium B.C. In turn, the epigraphic evidence confirmed this picture suggesting that a kingdom (the Kingdom of Da'amat) arose in northern Ethiopia in the first half of the 1st millennium B.C. A few inscriptions also suggested that some Sabaeans were living on the Tigrean Plateau¹⁶.

Despite many indisputable similarities of the Pre-Aksumite Culture to the pre-Islamic South Arabian one in northern Yemen, apparently supporting a Sabaeen origin of the former culture, the occurrence of incongruities in the archaeological, epigraphic and linguistic evidence pointed to a local origin of the pre-Aksumite state. Some scholars, such as A.-J. Drewes, R. Schneider, F. Anfray and later R. Fattovich, thus rejected the hypothesis of a Sabaeen colonization as a crucial factor in the process of state formation in northern Ethiopia and Eritrea. They suggested that the pre-Aksumite state originated from an earlier indigenous Afro-Arab complex society, which was affected by the South Arabian culture, and the rise of the Aksumite state and culture represented the

¹⁴ See Anfray 1972. The "Dungur" palace, dating to the 6th–7th centuries A.D., is presently indicated to the tourists as the "Palace of the Queen of Sheba", but this is a modern fictitious name dating to the 1980s.

¹⁵ See de Contenson 1981; Anfray 1990; Fattovich 1990.

¹⁶ See Drewes 1962; Schneider 1973, 1976; Marrassini 1985; Bernard *et al.* 1991.

re-emerging of local (African) traditions after the decline of Da'amat¹⁷.

FROM CULTURE HISTORY TO PROCESSUAL ARCHAEOLOGY (1970s – 1980s)

In the early 1970s excavations were conducted at Aksum by British and Italian expeditions, and an archaeological survey was carried out by an American team in the Aksum-Yeha region.

In 1973–1974 Neville Chittick directed large-scale excavations in the royal cemetery along the Mai Hejja, and test excavations were done in the Gudit stelae field to the west of the modern town and in other areas of Aksum (Chittick 1975; Munro-Hay 1989). As part of Chittick's team, Karl Butzer conducted a geo-archaeological investigation at Aksum (Butzer 1981, 1982), and David Phillipson carried out a test excavation at Gobedra, to the south of Aksum (Phillipson 1977).

Also in 1974, Lanfranco Ricci excavated two Aksumite churches on the southeastern side of Bieta Giyorgis hill, and recorded two ancient sites on top of the hill, Ela Nagast/Ona Nagast and Ona Enda Aboi Zewgè¹⁸.

Joseph Michels systematically surveyed the transect between Aksum and Yeha in 1974 and recorded over 250 sites dating to pre-Aksumite, Aksumite and post-Aksumite times (Michels 1988, 1990, 1994).

These investigations largely expanded the knowledge of the development of the Aksumite kingdom in its environmental context, and provided new evidence about the chronology of the kingdom.

Butzer provided the first reconstruction of the environmental changes in the region of Aksum during the last two millennia. The American scholar identified four major episodes with increasing soil erosion due to heavier rains and/or more intense human disturbance. The first phase (ca. A.D. 100–350) was probably due to heavy rainfall with strong periodic floods, on a landscape already partially deforested and degraded because of intense land-use¹⁹. The second phase (ca. A.D. 650–800) represented a period of deep soil erosion due to very intense land-use and very heavy periodic rains combined with a progressive abandonment of settlement. The third phase (late 1st millennium A.D.?) was apparently a further period of soil erosion due to a late abandonment or to eventual destruction of the settlement. The

fourth phase (19th–20th centuries) corresponded to a recent and much better documented period of soil erosion due to a more intense land use on a greatly denuded landscape.

In turn, Michels and Munro-Hay suggested a more detailed chronology for the pre-Aksumite and Aksumite periods.

Michels (1994) distinguished six cultural phases, based on pottery seriation and obsidian-hydratation dating:

- 1) Early Pre-Aksumite (ca. 7th–4th centuries B.C.), characterized by the emergence of South Arabian colonial settlements overlying an indigenous settlement pattern.
- 2) Middle Pre-Aksumite (ca. 4th to mid-2nd centuries B.C.), corresponding to the development of a South Arabian state.
- 3) Late Pre-Aksumite (ca. mid-2nd century B.C. to mid-2nd century A.D.), marked by the collapse of the South Arabian state.
- 4) Early Aksumite (ca. mid-2nd to mid-5th centuries A.D.), characterized by the emergence of petty polities, possibly incorporated into a state with a capital at Aksum.
- 5) Middle Aksumite (ca. mid-5th to 8th centuries A.D.), corresponding to the peak of the Aksumite kingdom.
- 6) Late Aksumite (ca. 8th–10th centuries A.D.), corresponding to the decline of the kingdom.

Munro-Hay distinguished six phases of development of the Aksumite kingdom, based on dating of the coinage, mainly from Chittick's excavations (see Munro-Hay 1989, 1991):

- 1) Formative period of the state, ca. A.D. 0–200.
- 2) Initial expansion of the kingdom and introduction of coinage, ca. A.D. 200–270.
- 3) Early evidence of coins up to the introduction of Christianity, ca. A.D. 270–330.
- 4) Peak of the kingdom, ca. A.D. 330–520.
- 5) Late period of coinage, ca. A.D. 330–520.
- 6) Post-coinage period and decline of the kingdom, after ca. A.D. 630.

Michels' investigations were particularly important as the American scholar introduced a settlement archaeological approach into

¹⁷ Drewes 1962; Anfray 1969, 1970, 1990; Schneider 1973, 1976; Fattovich 1977.

¹⁸ Ricci 1974, 1990; Ricci / Fattovich 1988.

¹⁹ The datings suggested in Butzer 1981 must be now reconsidered in the light of the radiocarbon datings from Bieta Giyorgis.

Aksumite archaeology, and thus stimulated a processual analysis of the pre-Aksumite and Aksumite cultural development (Michels 1988, 1994; see also Fattovich 1990).

According to Michels the pre-Aksumite settlement pattern in northern Tigray was initially characterized by regularly spaced villages (ca. 1–3 ha in size) and hamlets (less than 1 ha in size), about 2 to 3 km apart, dominated by a major town at Yeha, and a few minor ceremonial centres at Hawlti, Adi Atero and Seglamien. In late pre-Aksumite times the settlement pattern was characterized by scattered regularly spaced hamlets and villages.

The early Aksumite settlement pattern was characterized by at least three towns at Aksum, Adi Asaso and Misfad Meru. They were surrounded by small villages and isolated elite residences. In middle Aksumite time villages and isolated hamlets were scattered over the whole territory of Aksum. In late Aksumite time Aksum was apparently a large village with a few elite residences, surrounded by smaller villages and hamlets.

From 1974 to 1993 no major archaeological work was conducted at Aksum because of political instability in Ethiopia, except for a limited rescue excavation on a hill next to the royal cemetery, where the new Yeha Hotel is now located, by Richard Wilding and Eric Godet in the mid-1970s, but the results were never published.

During this long interval archaeological research was intensified in the surrounding regions of the Eastern Sudan and Yemen, mainly by Italian expeditions²⁰. The results of these investigations provided new evidence for a more detailed reconstruction of the social, economic and cultural development along the southern Red Sea and a better understanding of the process of state formation in the northern Horn of Africa since the late Prehistory (see e.g. Munro-Hay 1993; Fattovich 1990a, 1999).

These results demonstrated that 1) the rise of Aksum was a crucial stage in a process of state development in the northern Horn of Africa, which begun in the 3rd millennium B.C. and continued up to modern times; and 2) the formation of the state was largely affected by the progressive inclusion of the northern Horn into the interchange circuit along land and sea routes between the Mediterranean and Indian Ocean regions.

In the early 1990s three main phases in this process were recognized (Fattovich 1999, 2000):

The rise of chiefdoms in the western lowlands (Gash Group, ca. 2500–1500/1400 B.C.; Jebel Mokram Group, ca. 1400–1000/900 B.C.) and possibly on the plateau in Eritrea (Ona Culture, ca. 1200–600/500 B.C.) in the 3rd–2nd millennia B.C. Long distance trade with Egypt and Nubia apparently was a major factor stimulating the formation of these chiefdoms.

The rise of an Ethio-Sabaean state (D'aamat, ca. 800/700–300/400 B.C.) on the plateau in northern Ethiopia and Eritrea in the mid-1st millennium B.C., as a consequence of the South Arab economic and political expansion.

The development of the Aksumite state in the late 1st millennium B.C. – 1st millennium A.D., when the Tigrean Plateau was included in the Roman and Byzantine interchange circuit of the Red Sea and Indian Ocean.

RESUMING ARCHAEOLOGY AT AKSUM (1990s–2000s)

Archaeological investigations at Aksum were resumed in 1993, by the Istituto Universitario Orientale (IUO), Naples, and Boston University (BU), Boston, and the British Institute in Eastern Africa (BIEA).

From 1993 to 2005 archaeological investigations were conducted on Bieta Giyorgis hill, Aksum, by the Istituto Universitario Orientale and Boston University under the direction of Rodolfo Fattovich (IUO) and Kathryn Bard (BU). An important goal of this project was to investigate the origins and development of Aksum within its environmental setting²¹. The project included research in archaeology, history, ethnoarchaeology, paleoethnobotany, palynology, zooarchaeology, geomorphology, geology, and hydrology, as well as conservation and systematic topographic mapping²². Beginning in 2000, advanced digital technologies, such as Remote Sensing and Geographic Information Systems (GIS), were applied for a detailed territorial analysis, and interpretation

²⁰ See de Maigret 1988, 1990; de Maigret / Robin 1989; Fattovich 1989, 1990b, 1991.

²¹ Fattovich 1997; Bard *et al.* 2000; Bard *et al.* 2003.

²² In 1996 the University of Cagliari (Italy) conducted a preliminary geophysical survey on Bieta Giorgis hill under the direction of Roberto Balia and Antonio Vernier. Balia / Vernier 1997.

and presentation of the results through virtual reality and visual information systems²³.

As a result of the archaeological excavations on Bieta Giyorgis hill, four main culture periods were identified:

- 1) Pre-Aksumite Period, ca. 700–400 B.C.;
 - 2) Proto-Aksumite Period, ca. 400–150 B.C.;
 - 3) Aksumite Period, ca. 150 B.C. to A.D. 700;
 - 4) Post-Aksumite Period, ca. A.D. 700 onward.
- The Aksumite Period has been further divided into four phases: Aksumite 1 (Early Aksumite), Aksumite 2 (Classic Aksumite), Aksumite 3 (Middle Aksumite), and Aksumite 4 (Late Aksumite).

The BIEA expedition resumed Chittick's large-scale excavations in the royal cemetery along the Mai Hejja, and in the Guditi stelae field, under the direction of David Phillipson. Test excavations were conducted in an area of ancient settlement, in the valley between the hills of Bieta Giyorgis and Mai Qoho. An archaeological survey to the north, east and west of Aksum was also conducted by the BIEA (Phillipson 2000).

The results of the BIEA expedition confirmed that the region of Aksum was occupied during the whole Holocene. The discovery of a Pre-Aksumite domestic site suggested that the urban development of Aksum began in the mid-1st millennium B.C. In turn, the analysis of carved furniture and a female figurine made of ivory suggested a local manufacture of ivory artifacts. The study of the lithic industry demonstrated that stone tools were made and used at Aksum until recent times.

From 2000 to 2003 a German Expedition conducted small scale fieldwork in the valley between Mai Qoho and Bieta Giyorgis, as well as near the church of Maryam Tsion and in the area of Addi Kilte at Aksum, under the direction of Helmut Ziegert. The expedition did not provide any relevant result, except the evidence of an area for copper-working at Berik Audi to the north of Aksum²⁴.

Finally, in 2000 the Ethiopian archaeologist Tekle Hagos (2001) conducted a survey in the region of Aksum, and recorded some sites with possible megalithic monuments.

As a result of these investigations a more detailed picture of social, economic and cultural development in the region of Aksum from pre-Aksumite to post-Aksumite times has been outlined²⁵. The main aspects of this process were:

1. In pre-Aksumite time the region of Aksum was part of the Ethio-Sabaeen state. In proto-Aksumite time a polity emerged at Aksum. In early Aksumite time a petty kingdom consolidated in the region. In classic to late Aksumite times Aksum became the capital city of a large territorial state. In post-Aksumite time the town was no more a capital, but remained the main religious center of Christian Ethiopia.
2. Ox plough agriculture was already established in late pre-Aksumite time and remained since then the subsistence base of the kingdom. Free-threshing wheat, bread wheat, emmer, barley, and legumes were the main crops. Apparently the consumption of *tef* increased from early to post-Aksumite times. Millets were cultivated since early Aksumite time. Grape was cultivated in early to late Aksumite time. Sorghum was cultivated in late Aksumite time. Cattle and sheep/goats were the main livestock. Sheep/goats progressively decreased since proto-Aksumite time, with a major drop in middle Aksumite time, and practically disappeared in late Aksumite time. Agricultural terraces were surely constructed in middle Aksumite time, but may have been already in use at an earlier time. An articulated system for water management was constructed at Bieta Giyorgis between the 5th century B.C. and 5th century A.D., most likely in middle Aksumite time as well.
3. The number of settlements in the region of Aksum increased from proto-Aksumite to middle Aksumite times, and sharply declined in late Aksumite and post-Aksumite times, perhaps as a consequence of fluctuations in the demographic density.
4. Social hierarchy progressively increased since proto-Aksumite time with a peak in middle Aksumite time. The wealth (and possibly authority) of the elite reached a peak in late classic and middle Aksumite time, and apparently declined in late Aksumite time.

²³ Forte *et al.* 2001; Bard *et al.* 2003; Focillo *et al.* 2003; Forte 2003; Manzo / Perlingieri 2003; Fattovich 2003.

²⁴ See Ziegert 2001, 2003; Wendowski / Ziegert 2003a, 2003b.

²⁵ Fattovich 1997, 2003; Fattovich *et al.* 1998, 2000; Bard *et al.* 2000, 2002; Manzo 1998a, 1998b, 1999; Phillipson 1998; 2000.

5. Specialized crafts increased in early to classic/middle Aksumite times, when most likely palatine handicrafts (e.g., the ivory working) existed. They declined in late Aksumite time, and disappeared in post-Aksumite time.
6. Long distance trade was a crucial aspect of the economy since proto-Aksumite time. This trade apparently reached a peak in classic to middle Aksumite time, and decreased in late Aksumite time. Long distance trade disappeared in post-Aksumite time.
7. In proto-Aksumite to classic Aksumite times the redistribution of exotic goods and luxury artifacts was apparently limited to the elite. In middle Aksumite time also the lower strata of the population were included into this system. In late Aksumite time this was again limited only to the elite. There is no evidence of a redistribution of goods in post-Aksumite time.
8. An indigenous ideology emerged in proto-Aksumite time and survived up to late classic-middle Aksumite times. This pattern was characterized by open air cult places and funerary cult of the elite with the construction of stone platforms associated with stelae, as well as the adoption of symbols of the elite power similar to the Nubian ones. In classic Aksumite time a distinctive figure of the king emerged, and the elite adopted some Mediterranean rituals and symbols of power. A Christian ideological and cultural pattern emerged in middle Aksumite time, and was firmly established in late Aksumite time. This was characterized by the construction of churches as cult places and the adoption of the cross as symbol of kingship. In late Aksumite time the kings and the elite most likely adopted the Byzantine religious and royal symbols.

PRESENT APPROACHES TO THE ARCHAEOLOGY OF AKSUM

At present, the main role of archaeology at Aksum is to contribute to the cultural heritage management of the area, providing local authorities with basic information about type, location and state of preservation of the ancient remains. Actually, despite one hundred years of fieldwork most of the region of Aksum is not explored and a systematic site inventory has not yet been conducted²⁶.

In 2000 the IUO/BU expedition provided a preliminary assessment of this heritage, suggesting that the archaeological area of Aksum includes the town, the hills of Bieta Giyorgis and Mai Qoho, as well as the surrounding plains within a radius of about 5 km. This area has been divided into a core zone, peripheral zone, and marginal zone (see Fattovich *et al.* 2000).

The core zone encompasses the traditional town of Aksum, the hills of Bieta Giyorgis and Mai Qoho, the plain along the piedmont of Bieta Giyorgis to the west of Mai Lahlah, the piedmont of Mai Qoho to the east, and the plateau of Abba Liqanos to the northwest. The peripheral zone corresponds to the sloping plain to the south and north of Aksum. The marginal zone corresponds to the hills which surround the plain of Aksum and delimit the territory of the ancient capital city.

A total of over 320 sites, including isolated monuments, were recorded in the archaeological area of Aksum, to date. Most of them are located in the core zone where extensive excavations have been also conducted in the 20th century. They include residential and cult buildings (palaces and churches), funerary superstructures (man-made platforms and stelae), tombs (pit-graves, shaft-tombs, and hypogean tombs), and thrones. Over 90 inscriptions have been recorded as well.

Man-made landscape features are an important component of the archaeological area of Aksum. They include agricultural terraces and fields, cisterns, dams and barrages, draining channels, roads, tracks and paths. These features are the connective tissue linking together the whole area in one man-made system, and may reflect temporal changes in social organization and land use patterns in the region. To date, the investigation of this evidence has been neglected in Aksumite archaeology. Only the Mai Shum cistern, near the Old Town in Aksum, has been carefully recorded and described²⁷.

In 1997 the IUO/BU expedition started a systematic investigation of the off-site features visible on the top of Bieta Giyorgis hill, in order to generate a model of the ancient pattern

²⁶ A systematic site inventory of the archaeological area of Aksum is in progress as part of a World Bank project.

²⁷ Littmann *et al.* 1913, II: 70–73; Monneret de Villard 1938a: 8–11; Phillipson 1997: 156–160.

of land use pattern, to be tested in the field. So far, this survey provided evidence of ancient massive walls, possible dams associated with a terrace wall, and a reservoir ('Ela Nagast).

Ancient massive walls to sustain fields were recorded along the northern and eastern slopes of Bieta Giyorgis. Their age is uncertain, but some associated ceramics suggest that they are not earlier than Middle Aksumite times (ca. A.D. 400–550). Two possible dams, associated with three walls, were found along the Guadguad Agazien, where they delimited a small basin on the northern edge of the hill. A man-made terrace wall was also built along the northeastern side of the basin. These structures can be dated between the mid-1st millennium B.C. and mid-1st millennium A.D., but a dating to Aksumite times is more probable (Fattovich / Bard 2002). Two long walls dating to Aksumite times occur to the west of the Guadguad Agazien, and walls were most likely used to direct the flow of water into the nearby reservoir. A similar massive wall, most likely dating to Aksumite times, is visible along the southeastern slope of Bieta Giyorgis, near the Aksumite site (Daaro), and was probably built to prevent soil erosion, control rain water, and create a path from Daaro to Bieta Giyorgis. Most likely, a large reservoir ('Ela Nagast) was built to the west of Ona Nagast in Aksumite times, as potsherds dating from proto-Aksumite to Late Aksumite times were mixed in the fill (Fattovich *et al.* 2000: 42).

Finally, in 2000 the IUO/BU project at Bieta Giyorgis adopted a landscape archaeology approach in order to better understand the dynamics of human-environment interaction in the region of Aksum during the last three thousand years (see Fattovich 2003; Bard *et al.* 2003). This investigation was aimed at describing the archaeological landscape of Bieta Giyorgis, outlining the sequence of ancient landscapes that characterized the region through time, and reconstructing the processes that generated the changes in the landscape of the region through time. The application of Remote Sensing analyses of aerial photos and satellite images and GIS to generate archaeological maps and predictive models of site distribution at Bieta Giyorgis, in the context of the Aksum archaeological area, also provided the background to a more sophisticated "digital" project aimed at generating a "virtual model" of the ancient landscape at Bieta Giyorgis and the Aksum area (see Forte *et al.* 2001; Forte 2003).

In such a way, combining the archaeological evidence with the ethnographical one, the following main changes in the general landscape of the region have been tentatively outlined:

In late prehistoric times (3rd/2nd– early 1st millennia B.C.) the region was scarcely populated. Lithic workshops were initially located close to streams at the base of the hills and later some rock-shelters were occupied at the edge of the top, along the slopes and at the base of the hills. At present there is no evidence of a human manipulation of the landscape at this time. The vegetal cover is still unknown in the absence of paleobotanical and palynological evidence. The large quantity of bovinds in the rock-shelter at Baahti Nebait on the western slope of Bieta Giyorgis may point to the occurrence of vast open grazing areas in the plain (see Phillipson 2000: 17–26).

In Pre-Aksumite times (mid-1st millennium B.C.) the landscape began to be more intensely manipulated by human intervention with extensive cultivated and grazing areas. There is not yet any direct evidence of the vegetal cover. The distribution of Pre-Aksumites sites suggests that the marginal zone of the Aksum region was more densely occupied at this time, while very few settlements were located in the core one. The plain around Aksum was apparently almost completely not inhabited. Settlements were mainly small villages and hamlets, which were located along the flanks of the hills. A (cult?) building was located at Ona Enda Aboi Zewgè (OAZ I) on the top of Bieta Giyorgis hill, and a temple was erected in a dominant position on the top of the hill of Abba Panatalewon²⁸.

In Proto-Aksumite and Aksumite times (late 1st millennium B.C. to late 1st millennium A.D.) the landscape was largely manipulated by human intervention. The pollen data suggest that the general vegetation pattern in these periods was similar to the present one, and was characterized by a predominance of grasses and shrubs with only a few isolated trees near structures, in gorges along seasonal streams, and on rocky slopes. Cultivated fields and grazing areas occupied most of the region, and the slopes of the hills were terraced. Cisterns and wells were located close to or within the settlements, although the direct

²⁸ Michels 1994; Fattovich *et al.* 2000; Phillipson 2000.

evidence is very scarce. Dams were probably constructed on the slopes of the hills, along some rivers. Settlements were surely scattered over the whole regions. Towns and larger villages were located mainly at the base or on the top of the hills (for defence and protection from malaria). Small villages and hamlets were located also in the plain. Compounds occurred both in the plain and on the slopes and top of the hills. Lithic workshops were located at the base and the top of the hills. Roads and paths connected all settlements in a well organized network. Elite residential palaces were clustered mainly around the capital city, but they could also be isolated complexes in the plain or on the top of hills, such as Bieta Giyorgis. Stelae fields were located mainly around Aksum, both at the base and on the top of hills. Cult places were mostly located on the edge and slopes of hills or on the top of higher hills. In Christian times the church of Maryiam Tsion became the symbolic focus of the whole landscape.

CONCLUSION

The development of archaeological research at Aksum in the last one hundred years clearly reflected the general trend of theoretical and methodological changes in archaeology in the same period.

The *Deutsche Aksum-Expedition* was still operating within the descriptive and classificatory frame of historical archaeology of the late 19th–early 20th centuries, with a major

focus on the analytical description of the monuments. From the late 1930s to the early 1970s a culture historical approach was dominant, and the research was mainly oriented to outline the chronological phases of Aksumite history from the 1st millennium B.C. to the late 1st millennium A.D. In the early 1970s a processual approach was introduced into Aksumite archaeology, and an increasing attention was paid to the investigation of the process of state formation in the northern Horn of Africa. In the 1990s a processual approach was maintained, although with an opening to post-processual areas of research such as landscape archaeology. Today a human ecological approach, focussing mainly on environmental archaeology, is progressively emerging to understand the dynamics of Man-Environment interaction in the region through time.

So far, an historical approach has been the dominant aspect of the research, and archaeology has been always strictly integrated with the analysis of epigraphic and textual evidence. The use of ethnohistorical sources has been another relevant component in the interpretation of the archaeological evidence.

Finally, the origin of Aksum has been one of the crucial problems archaeologists have investigated. For a long time the hypothesis of a South Arabian origin of the kingdom was the most widely accepted explanation of this event. In the last thirty years, however, archaeological research in northern Ethiopia and surrounding regions has indisputably demonstrated that Aksum had a local origin, most likely related to cultural traditions of western lowlands.

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