



NETWORKED SPACES

THE SPATIALITY OF NETWORKS IN THE RED SEA AND WESTERN INDIAN OCEAN

*edited by Caroline Durand, Julie Marchand, Bérangère Redon
and Pierre Schneider*

NETWORKED SPACES: THE SPATIALITY OF NETWORKS IN THE RED SEA AND WESTERN INDIAN OCEAN

ARCHÉOLOGIE(S) // 8

The 34 articles published in this volume form the proceedings of the 9th Red Sea conference held at Lyon in July 2019, whose core topic was the “spatiality of networks in the Red Sea”, including the western Indian Ocean. In the networked space that the *Erythra Thalassa* never ceased to be, stable factors such as landscape, climate, and wind patterns have been constantly entangled with more dynamic elements, such as human activity. The contributors to this volume explored how the former were integrated into the countless networks formed by humans in the region, and how these were impacted by spatial constraints over the long course of history.

This volume offers a wide range of stimulating contributions. The first articles are devoted to medieval and modern European sources on the Red Sea and its exploration, and to the networks of knowledge dissemination about the region. They are followed by papers relating to the main nodes, the ports and islands of the Red Sea. Several articles are then focusing on the agency of hinterland populations in the networks, and the relationships between the regions bordering the Red Sea and central powers that governed them, often from distant lands. Production and consumption networks are the subject of the next articles, to assess the extent and nature of exchanges and to shed light on the archaeology of circulations. The logistics of exploration, exploitation and trade in the regions bordering the Red Sea are then examined. The last series of papers focuses on regions where archaeological work started only recently: Somaliland, Tigray, and the Horn of Africa. Thanks to all the participants, whether they have exploited new data or re-examined long-known material, the 9th edition of the “Red Sea Project” gave rise to vibrant debates, showing that the *Erythra Thalassa* remains an endless source of knowledge.

Les 34 articles publiés dans ce volume forment les actes de la 9^e édition de la « Red Sea conference » qui s'est tenue à Lyon en juillet 2019. Son thème central était la « spatialité des réseaux en mer Rouge », mais aussi dans l'océan Indien occidental. Dans l'espace connecté que l'Erythra Thalassa n'a jamais cessé d'être, des éléments stables, tels que le paysage, le climat ou le régime des vents, ont été constamment enchevêtrés avec des éléments plus dynamiques, comme l'activité humaine. Les contributeurs de ce volume ont exploré la manière dont les premiers ont été intégrés au sein des innombrables réseaux formés par les hommes dans la région, et dont ceux-ci ont été affectés par les contraintes spatiales au cours de l'histoire.

Ce volume offre un riche éventail de contributions. Les premières sont consacrées aux sources européennes médiévales et modernes relatives à la mer Rouge et à son exploration, ainsi qu'aux phénomènes de diffusion des connaissances sur la région. Elles sont suivies d'études sur les nœuds principaux que sont les ports et les îles de la mer Rouge. Plusieurs contributions sont ensuite dédiées à l'agency des populations de l'arrière-pays dans les réseaux, de même qu'aux relations entre les régions bordant la mer Rouge et les pouvoirs centraux qui les ont régis, souvent depuis des contrées éloignées. Les réseaux de production et de consommation font l'objet des textes suivants. Ils évaluent l'ampleur et la nature des échanges et mettent en lumière l'archéologie des circulations. La logistique de l'exploration, de l'exploitation et du commerce dans les zones bordant la mer Rouge est ensuite examinée. La dernière série d'articles porte sur des régions où les travaux archéologiques ont commencé très récemment : Somaliland, Tigré et Corne de l'Afrique. Grâce à tous les participants, qu'ils aient exploité de nouvelles données ou réexaminé des documents connus de longue date, la 9^e édition du « Red Sea Project » a donné lieu à des débats animés, témoignant que l'Erythra Thalassa demeure une source d'information inépuisable.



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Islands, coast, lowland and highland

From the Red Sea to Aksum and beyond: the north-east/south-west network in ancient and modern times

Luisa Sernicola
University of Naples "L'Orientale"

Chiara Zazzaro
University of Naples "L'Orientale"

The coastal and inland regions of the northern Horn of Africa have been involved for millennia in a process of continuous interaction that played a big role in the shaping of the economic, social and cultural traits of these areas through time. Such interactions developed alongside the establishment of a complex network of short- to long-distance circuits nested one into the other to form major axes with the ultimate scope of overcoming the separateness of this territory. This network did not remain consistently the same. It reorganized itself over time according to the changes in the climatic, economic and political scenario and to the shifting of major hubs and nodes. The paper aims at expanding the existing knowledge of a north-east/south-west exchange axis going from the Red Sea coast to Aksum and beyond in a chronological and spatial manner, in light of recently acquired archaeological evidence.

Les régions côtières et intérieures du nord de la Corne de l'Afrique sont impliquées depuis des millénaires dans un processus d'interaction continue qui a joué un grand rôle dans la formation des caractéristiques économiques, sociales et culturelles de ces régions au fil du temps. Ces interactions se sont développées parallèlement à la mise en place d'un réseau complexe de circuits de courte à longue distance imbriqués les uns dans les autres, formant des axes majeurs ayant pour principal objectif de surmonter la fragmentation de ce territoire. Ce réseau n'est pas resté constamment le même. Il s'est réorganisé au fil du temps en fonction de l'évolution des scénarios climatique, économique et politique et du déplacement des grands pôles et nœuds urbains. L'article vise à élargir les connaissances existantes sur l'axe d'échange nord-est/sud-ouest allant de la côte de la mer Rouge à Axoum et au-delà, de manière chronologique et spatiale, à la lumière des données archéologiques récemment acquises.

Introduction

One of the most interesting aspects of the history of the northern Horn of Africa is the intense interaction between people from the coast and people from the inland, which has been ongoing since Antiquity. The coastal areas of present-day Eritrea have always been a gateway of goods as well as of people, ideas, and knowledge. These, over time, strongly influenced the economic, social, political and religious dynamics of the internal regions, and vice versa.

“From Adulis it is a journey of three days to Koloê, an inland city that is the first trading post for ivory, and from there another five days to the metropolis itself, which is called Axômitês [Axum]; into it is brought all the ivory from beyond the Nile through what is called Kyêneion, and from there down to Adulis”.¹

This well-known paragraph reported in the *Periplus Maris Erythraei* represents a milestone contribution to the process of reconstructing the routes linking the southern Red Sea coast with the adjoining highlands and inner desertic regions, as it describes in detail the logistics of the itinerary from the sea port of Adulis (in Eritrea) to the metropolis of Aksum (located in the mountainous regions of the central Tigrean plateau, in present-day northern Ethiopia). As can be inferred from the text itself, the Adulis-Koloê-Aksum itinerary illustrated in the *Periplus* (fig. 1) was only a segment of a larger and more complex network of medium- to long-distance sea and land routes which extended “from beyond the Nile through what is called Kyêneion”. Moreover, this itinerary originates from the mid 1st century CE, a period wherein Aksum was already progressively emerging as a powerful polity and Adulis – with the establishment of the Indo-Roman maritime trade – was gaining an increasingly prominent economic role, leading to its inclusion within Aksum’s political sphere.² It is therefore evident that both Aksum and Adulis constituted major nodes within this network at that time (as well as for the following six centuries, at least).

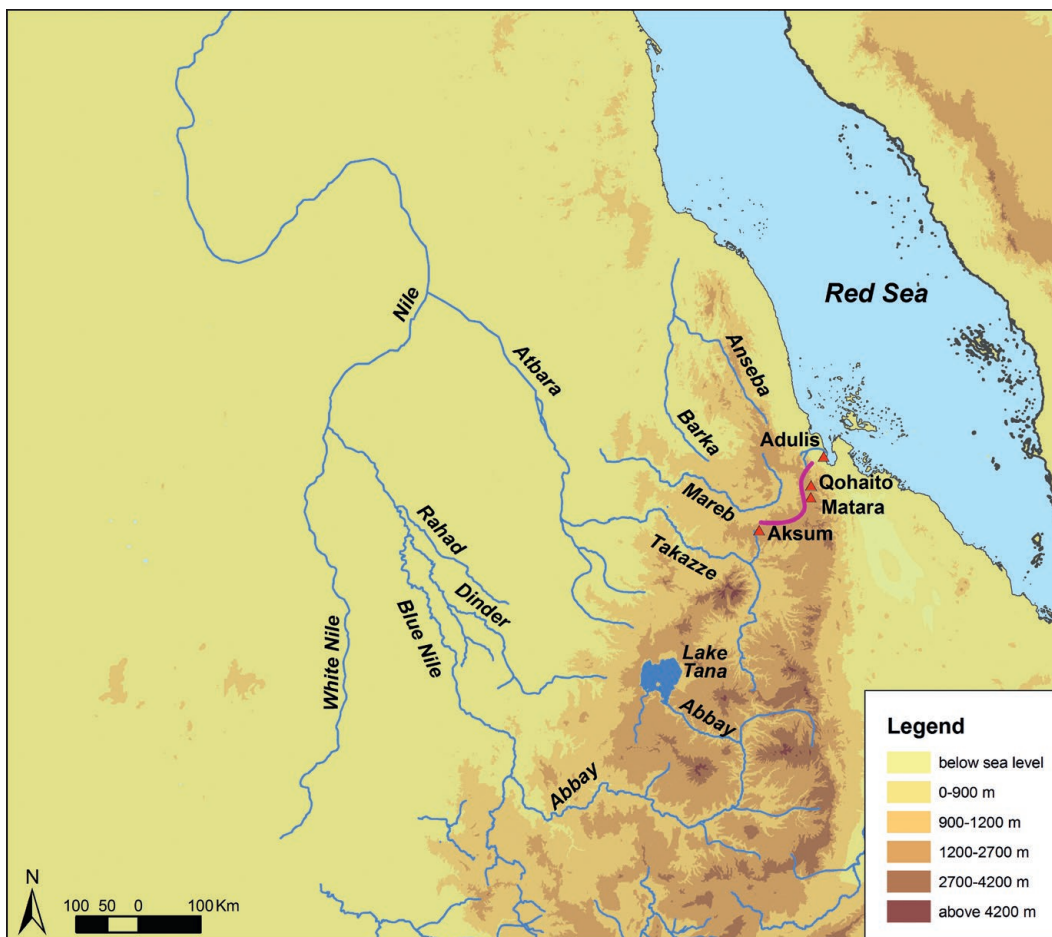


Fig. 1 – Sketch of the Adulis-Koloê-Aksum itinerary and the hydrography of Ethiopia, Eritrea and the Sudan relevant to this paper (L. Sernicola/University of Naples “L’Orientale”).

1. *Periplus Maris Erythraei*, § 4, 4-10 (ed. and transl. Casson 1989, p. 53).

2. Zazzaro et al. 2015.

Before entering in the detail of the paper, a discussion about the possible location of Kyêneion deserves some space. While there is general agreement among scholars in accepting Bent's first identification³ of ancient Koloê with the huge Aksumite archaeological remains at Qohaito⁴ for its situation and the fitting with the *Periplus'* travel time⁵ (see fig. 2 for the location of Qohaito and the situation of all place names), Kyêneion is a toponym that has not yet been identified with any archaeological site, nor its definite geographic location has been ascertained. According to Schoff,⁶ who assumed that the anonymous author of the *Periplus* intended to refer to the river known by that name, Kyêneion has to be identified with the region of Sinnar, indeed just across the Blue Nile, some 560 km south-west of Aksum. His hypothesis is followed by several scholars including Huntingford,⁷ Hable-Selassie,⁸ Munro-Hay.⁹ On the other hand, it is widely accepted that the ancients

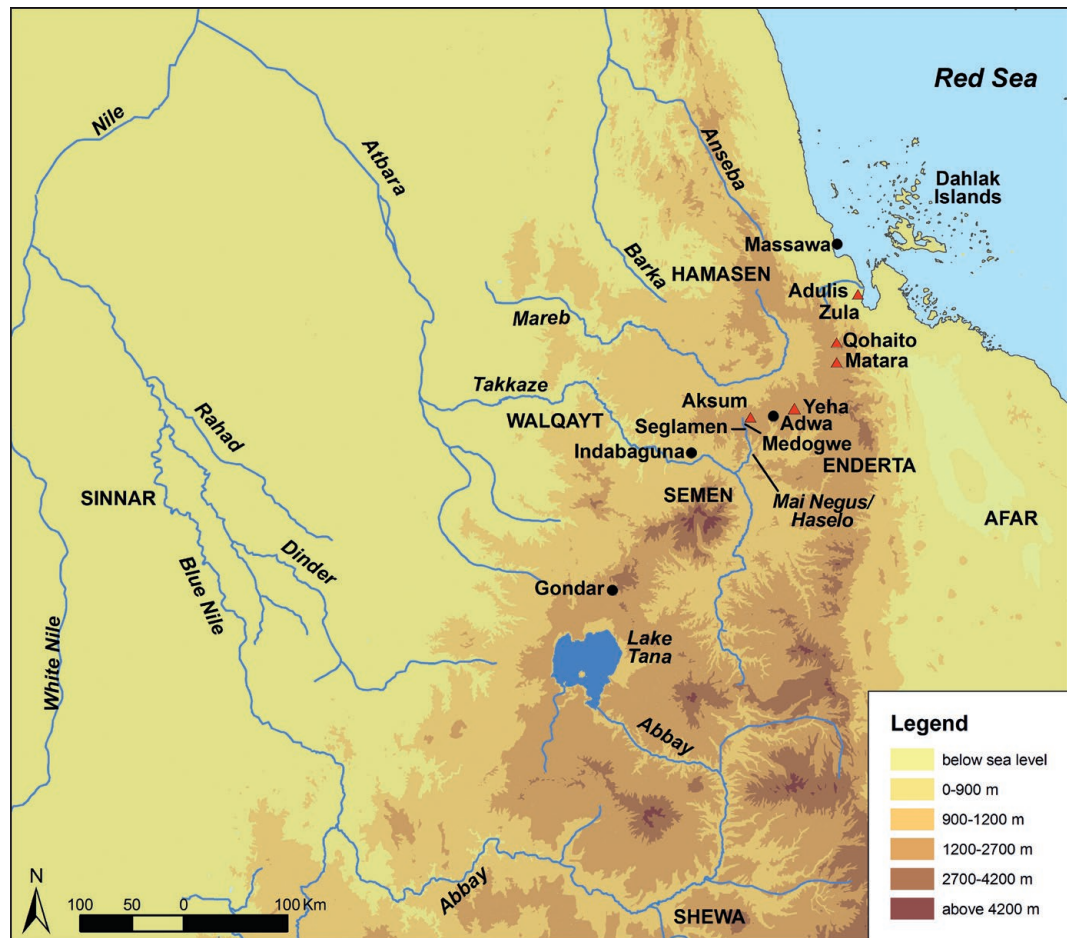


Fig. 2 – Map showing sites and localities mentioned in the paper: early 1st millennium BCE to late 1st millennium CE (L. Sernicola/University of Naples "L'Orientale").

3. Bent 1893, p. 223.
4. Curtis 2008, pp. 287-300; Krencker 1913, pp. 148-162; Wenig 1997.
5. Casson 1989, p. 106; Voigt 1999. Yet Kobishchanov 1979 equates Matara, another relevant pre- and Aksumite settlement (Anfray 1967; Anfray 1968; Anfray 1970; Anfray 1974), with Koloê, and Ptolemy (Müller 1883-1901, 4, 7, 27) puts it south of Aksum, in both cases without suiting the description from the *Periplus* (Casson 1989, p. 106).
6. Casson 1989, p. 107.
7. Huntingford 1980, p. 83.
8. Hable-Selassie 1964, p. 74.
9. Munro-Hay 1982, p. 109.

were indisputably vague and sometimes confused when describing the uppermost course and waters of the Nile, entitling various rivers in Ethiopia to be part of it. One of them is the Takkaze, the most important affluent of the Nile-tributary Atbara. Running westwards for about 608 km from the central Ethiopian highlands until it flows into the Atbara, the Takkaze is already attested in Aksumite inscriptions.¹⁰ In Ge'ez (ancient Ethiopic), the word "takkaze" means "river". Thence, since in the Bible the Nile is referred to as "the river", in Ge'ez this was rendered with "Takkaze". This reflects its original identification with the Nile, of which it is the easternmost affluent, closest to the coast and thus best known to the ancient geographers. With this same meaning it is used in Ethiopian medieval texts.¹¹ In the second and chronologically later Greek inscription of the *Monumentum Adulitanum*, the anonymous king vaunts his conquest of the territories "beyond the Nile" where snow-capped mountains rise – most likely referring to the Semen mountains, which suggests that this river was the Takkaze.¹² The same "confusion" could have been happened in the *Periplus*; if this is true, then Kyêneion could be identified with the Walqayt region, ca 120 km south-west of Aksum. As we will see in the 16th to 20th century historical sources, the old and important trade route from the Red Sea to Gondar, the Lake Tana region and the south (via Aksum) had to cross the Takkaze.

In both cases, Kyêneion has to be considered the southern limit of an axis linking the African side of the southern Red Sea coast with the Nile catchment area to the south-west of Aksum. Another possibility is that the term "Nile" of the *Periplus* refers to the Mareb, the main border river now separating the central Eritrean highlands from Ethiopia. On this basis, Conti Rossini¹³ suggests identifying Kyêneion with Cohain, the area within the loop of the Mareb. This interpretation, if correct, would bring Kyêneion even closer to Aksum (ca 40 km) and to the north rather than the south-west. This latter hypothesis seems to be less probable as the Mareb river is not strictly related with the Nile. Born in the Hamasen highlands of central Eritrea, it runs westwards in the Kunama lowlands flowing underground and then reappearing before ending its course in the Sudanese desert; only in exceptional cases an arm of this river joins the Nile-tributary Atbara.

Anyhow, whatever the location of Kyêneion itself, the archaeological and historical evidence presented in this paper demonstrates of the existence of a network of routes linking Aksum to the regions south-west of it.

This network did not remain consistently the same. Most importantly, it certainly did not begin, nor end, with Aksum or with the Indo-Roman trade: the network started significantly before Aksum's ascent and continued long after Aksum's decline. It was part of a longer process of exchange and interactions, and, like any process, was fluid and mutable over time. The network followed a relatively stable pattern of natural corridors while simultaneously readapting to the changing ecological, social, economic and political conditions that affected the nature and distribution of required goods and natural resources, as well as the importance and location of major nodes and hubs. The result was a dynamic, long-term network of local, regional and interregional circuits forming major axes and ultimately overcoming the disparate nature of this territory by connecting the sea with the innermost lands of the northern Horn.

A segment of this network linked the territories of the southern Red Sea with the regions of present-day central western Ethiopia and eastern Sudan via the Tigrean plateau, and might have constituted the south-western prolongation of the Adulis-Koloê-Aksum itinerary reported in the *Periplus*.

Later sources confirm the significance of this route. Sections 97 and 416 of Antoine d'Abbadie's 1890 *Géographie d'Éthiopie* (translation in Huntingford 1989) state that the route of the great caravan from Adwa to Gondar arrived at Mai Abeqat (in the south-western suburb of Aksum) on the second

10. See e.g. Bernand, Drewes, Schneider 1991a, p. 26 (no. 189).

11. Ritler 2010, p. 824.

12. Bernand 2000, pp. 33, 37 (no. 277).

13. Conti Rossini 1928, p. 115.

day, at the Takkaze river on the ninth day, and at Gondar on the twenty-fifth.¹⁴ The *Géographie d'Éthiopie* also includes a second traditional itinerary, which describes the distance between Adwa to Gobedra (Aksum) as requiring a day to travel across, and notes that the western edge of the Aksum conurbation was a stopping place for salt merchants. This itinerary lists the destination for the third day as Addi Gidad, which was a toll post (as at Aksum). Dambaguina (Indabaguna) is listed for the fifth day of the itinerary, and is described as a place where the traders separate, some going to Walqayt and the rest to Gondar.¹⁵ Although recorded in the 19th century, these routes – which were largely determined by the topographical features of hill slopes, river crossings and the availability of drinking water – were likely to have been in use for many centuries previously.

The primary aim of this paper is to expand the existing knowledge of this north-east/south-west exchange axis in a chronological and spatial manner, in light of recently acquired archaeological evidence. The first part of this paper will discuss excavations and surveys conducted along the Mai Negus river valley (to the south-west of Aksum) which enabled further reconstruction of this ancient trade route. The second part of this paper will explore the identification of an archaeological port-site to the south of the Gulf of Zula (at Irafali) and its implications for our understanding of the changes in this coastal-inland connection route during the 16th-17th centuries.¹⁶

The north-east/south-west circuit in ancient times

Evidence from the early 1st millennium BCE: the site of Seglamen

The valley along the Mai Negus/Haselo river crosses the plain to the south-west of Aksum's conurbation and flows south-westwards: following the valley, it is a journey of six days on foot to the Takkaze river, the regions north of Lake Tana (where the Blue Nile originates), and the upper course of the Atbara (see *fig. 2*).

Since 2010, the Italian Archaeological Expedition at Aksum of the University of Naples "L'Orientale" and ISMEO ("Associazione Internazionale di Studisul Mediterraneo e l'Oriente") has been conducting archaeological investigations in a 100 km² transect along the Mai Negus/Haselo river valley, from the south-western periphery of Aksum to Adet. The major goals of the project are to provide a long-term reconstruction of the population history, cultural interaction dynamics, and environmental dynamics in this region; and to provide a detailed archaeological map of this area for the cultural heritage management of Central Tigray, to complement the assessment of the archaeological area of Aksum implemented between 2000 and 2008.¹⁷ The area was selected as an area of study because the Mai Negus/Haselo river valley represented an important traditional, and perhaps ancient, exchange route linking Aksum (and the northern Ethiopian highlands generally) to the Takkaze river in the south-west – and thus connecting Aksum to the internal regions of the northern Horn of Africa.

A systematic survey of the study-area and archaeological excavations at site SG 1 in the modern village of Seglamen have been conducted so far, both providing stimulating insights into the ancient cultural and economic interactions along this corridor, in addition to providing information on the emergence of the Aksumite culture.¹⁸

14. Huntingford 1989, pp. 254-255.

15. Huntingford 1989, pp. 259-260.

16. Luisa Sernicola dealt with the sources related to the inland, Chiara Zazzaro with the part referring to the coastal regions.

17. The project has been directed by Rodolfo Fattovich from 2010 to 2013, by Andrea Manzo and Luisa Sernicola from 2014 onwards. Fattovich et al. 2012, p. 112; Sernicola 2019, pp. 11-12.

18. Sernicola 2019, pp. 11-33.

The modern village of Seglamen is located on a remarkably flat terrace, about 12 km to the south-west of Aksum (*fig. 3*). SG 1 is a site dated to the first half of the 1st millennium BCE located in the easternmost sector of the modern village, at the confluence of the Mai Negus with a minor tributary. Awareness of the possibility of an archaeological site in this area dating back to this period (the so-called “pre-Aksumite” period) came about in the early 1970s. A royal inscription in monumental South-Arabic, which commemorated the re-erection or restoration of a temple dedicated to the god “HBS” (“Hawbas”), was found by a local farmer at Amda Tsion, in the south-eastern sector of modern Seglamen.¹⁹

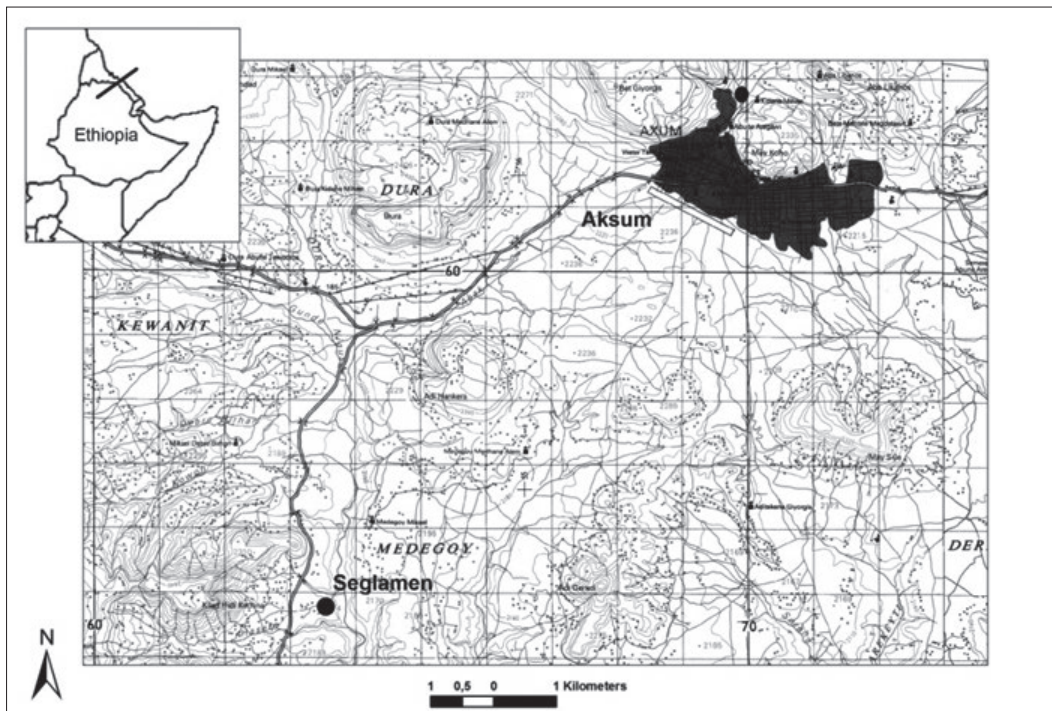


Fig. 3 – The location of Seglamen and Medogwe along the Mai Negus river valley (L. Sernicola/University of Naples “L’Orientale”).

Preliminary excavations aimed at detecting archaeological remains chronologically and culturally related to the inscription were carried out in 1974 by the University of Rome “La Sapienza”, under the direction of Lanfranco Ricci. These brought to light a large post-Aksumite (ca 800/850-1300 CE) rural house, apparently built on earlier foundations.²⁰ The actual location of the pre-Aksumite settlement was determined in 2006, during the systematic survey of Aksum and its vicinities conducted in the framework of the World Bank Ethiopian Cultural Heritage Project.²¹ This project occurred after a hiatus of more than 30 years, during which research in the area was completely abandoned. The location of the settlement was definitively confirmed in 2009.

The site extends over an area of about 7 hectares in the easternmost sector of the modern village, overlooking the river gorge. It encompasses the present-day areas of Amda Tsion, where the ancient settlement was located, and Mogareb, a gently raised terrace to the north-west of the settlement, where the remains of the ancient cemetery have been detected and investigated (*fig. 4*).

19. Bernand, Drewes, Schneider 1991a, p. 68 (no. 1); Bernand, Drewes, Schneider 1991b, pl. 1; Schneider 1976, pp. 81-89.

20. Ricci, Fattovich 1984-1986.

21. Sernicola 2019, p. 12.

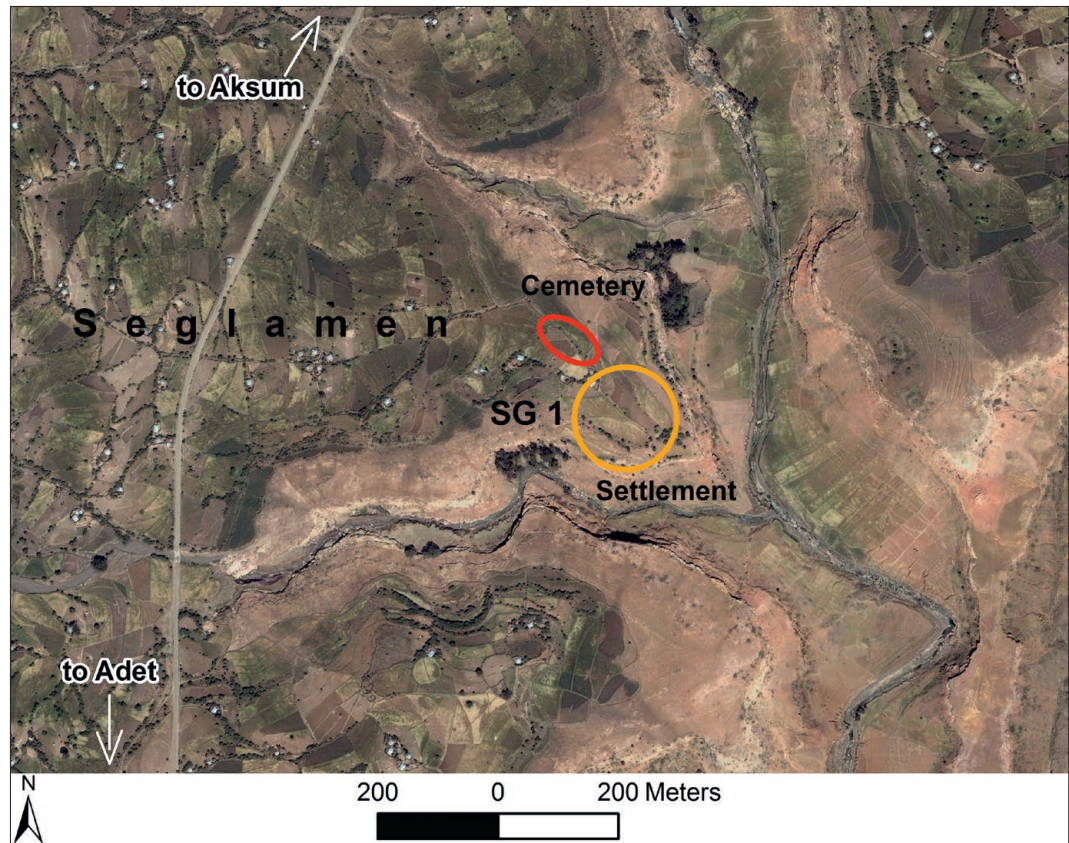


Fig. 4 – The location of site SG 1 at Seglamen with, encircled, the approximate extension of the ancient settlement and cemetery (L. Sernicola/University of Naples "L'Orientale").

Excavation in the settlement area uncovered the remains of overlapping stone buildings belonging to three major architectural phases. These remains included small rectangular and circular houses and large multi-room and multi-storied palaces, all ascribable to the first half of the 1st millennium BCE on the basis of associated artifacts and radiocarbon dating. More precisely, radiocarbon dating suggests an occupation of the settlement from ca 980 to 450 BCE.²²

Excavations in the cemetery have so far exposed the remains of 37 tombs consisting of circular and roughly rectangular shafts, which can be grouped into two major types. The first type of tomb is those associated with stela – a sandstone monolith (entirely or partly carved) is erected inside the shaft. The second type is tombs without stela. Both types can be either circular or rectangular and, in both cases, human skeletal remains and grave goods are found. Two of the tombs associated with stela are pits with multiple burials, all the others, with or without stela, are single burials. Small votive deposits characterized by shallow pits are located around the graves, in the proximity of outcropping natural boulders. Associated artifacts include ornaments, zoomorphic clay figurines, and miniatures of cups and beakers.²³

Analysis of the material culture and first data from faunal remains and archaeobotany suggest that the local economy was mainly agro-pastoral. Specifically, the economy was likely based on the cultivation and processing of cereal and legumes (*Hordeum vulgare*, *Eleusine* sp., *Sorghum* sp., *Eragrostis* sp., *Linum usitatissimum*, *Vicia fava*) and the breeding and butchering of cattle, sheep, and

22. Sernicola 2019, pp. 19-25.

23. Sernicola 2019, pp. 26-27.

goats. A variety of craft, and possibly industrial activities were also performed at the site, including stone knapping, pottery making, cleaning and refining animal skins, and wood working.²⁴

Alongside the manufacturing and use of local products, a significant corpus of imported materials has been collected at both the cemetery and the settlement. Among these are ceramics from the neighboring regions,²⁵ blue glass beads from the Nile Valley, the typical South Arabian “Torpedo” amphorae or “Type 4100” jars,²⁶ and several fragments of pearly oyster (*Pinctada margaritifera*), a marine species living in the Red Sea and Indo-Pacific Ocean.²⁷ One such fragment of pearly oyster is a worked marginal fragment of an upper valve, found in a context dated between the 7th and 5th centuries BCE. The fragment measures 2.6×2.7×0.3 cm and shows an abraded edge and a polished surface, suggesting it was part of a pendant or inlay (*fig. 5*).²⁸



Fig. 5 – Fragment of *Pinctada margaritifera* with abraded edge and polished surface from excavated context at site SG 1, Seglamen (L. Phillipson).

The site was therefore likely to have been included in a medium- to long-scale interchange circuit involving the Nile Valley, the Tigrean highland, and both the African and Arabian coastal regions of the Red Sea. Its location in a prominent position overlooking the river valley leading to the south-west corroborates this evidence. The location is also reflective of a deliberate occupation pattern recurrent in this period, characterized by the situation of relatively small but affluent centers, often associated with temples, along the major river valleys linking the Tigrean plateau with the regions south of it.²⁹

In this period, the settlement pattern of the area of Aksum was characterized by sparse rural dwellings and few small villages. No traces of ceremonial complexes nor evidence of prominent elite-related structures have been found, although the existence of a certain degree of economic (and potentially social) inequality appears to be proven by the differences in architecture and in the composition of artifact assemblages resulted from the test excavations conducted at the D-site in the area of Kidane Mehret.³⁰ This pattern suggests that Aksum was a marginal centre during the first half of the 1st millennium BCE – one of several rural settlements in the Tigrean plateau with no particular relevance, while other sites (primarily Yeha, and perhaps Matara) were more significant political centres and commercial hubs.³¹

24. L. Phillipson 2012; Phillipson 2013a; Phillipson 2013b. A purple/black glass droplet has been found in one of the settlement contexts suggesting the hypothesis that some kind of glass working was performed on site at that time (Sernicola 2019, p. 28). Although intriguing, this single, isolated find is too scanty; further evidence is required to corroborate the idea of local glass manufacture in the early 1st millennium BCE on the basis of substantial archaeological indicators.

25. E.g. fragments of brown ware dishes with abundant micaceous inclusions and wavy incised decoration along their internal rims endemic of the coeval eastern Tigray ceramics tradition; see D’Andrea et al. 2008, pp. 161-165.

26. Van Beek 1969, p. 170.

27. Sernicola 2019, pp. 28-29.

28. Makonnen, Phillipson, Sernicola 2013, p. 415.

29. Contenson 1961; Contenson 1963; Sernicola 2017, p. 95; Wolf, Nowotnik 2010a; Wolf, Nowotnik 2010b.

30. Phillipson 2000, pp. 267-379.

31. Fattovich 2014; Michels 2005, pp. 55-81; Sernicola 2017, p. 95.

From the mid 1st millennium BCE to the late 1st millennium CE: the site of Medogwe and a general overview of the Aksum region

Three km north-east of Seglamen and 8 km south-west of Aksum is the site of Medogwe, situated along the uppermost course of the Mai Negus/Haselo (*fig. 2-3*). First described by de Contenson³² and Hailemariam³³ in the 1950s, the site has recently been systematically mapped and surveyed by our expedition and dated, on the basis of the exposed materials, from the mid 1st millennium BCE to the mid 1st millennium CE.³⁴ The site presents elements clearly ascribable to the proto-Aksumite culture and to the early, classic and middle phases of the Aksumite culture; scanty evidence of pre-Aksumite materials has been also noticed.

At Medogwe, like at Seglamen, local artifacts are paralleled by imported ones. Among these, fragments of black Adulitan ware dateable to a period prior to the 3rd century BCE on the basis of the stratigraphic sequence at Adulis (*fig. 6*).³⁵ These fragments suggest that the site was included in this complex trade network with the Red Sea regions from at least the mid/late 1st millennium BCE to the late 1st millennium CE.

Other literary sources possibly refer to an ancient exchange circuit between Aksum and the regions south-west of it during the kingdom of Kaleb in the 6th century CE. In particular, in his *Topographia Christiana*, Cosmas Indicopleustès mentions that the king of Aksum used to send men to trade gold with the governor of Agaw (in the region of Sasu) every two years:³⁶ this region was located to the south-west of Aksum, in the Blue Nile valley.³⁷ In this region, the Aksumites exchanged gold for salt, ox and iron. Cosmas Indicopleustès lists the goods that the kingdom of Aksum exported abroad from its sea port, including gold, ivory (from elephants and hippos), emeralds, live animals, aromatic plants, and slaves.³⁸

The Mai Negus/Haselo river valley, which was first being crossed during the 1st millennium BCE, might have still been used during the Aksumite period (1st millennium CE) to access the regions to the south-west of the Tigrean plateau, where the upper courses of the Atbara and Blue Nile are located. From Aksum, goods and merchandises reached the sea following the well-known Aksum-Koloê-Adulis route. Although still scanty, archaeological evidence of this is starting to emerge from systematic surveys and settlement pattern analysis.

A large Aksumite satellite village, dating from the early to the mid 1st millennium CE has been detected at Mai Abeqat, immediately south-west of the Aksum conurbation.³⁹ The site surface presents a great amount of imported items and clay tokens suggesting of commercial and administrative activities; it was abandoned when Aksum started its process of decline. Interestingly, this is the same



Fig. 6 – Fragments of Adulitan ceramics from surface collection at Medogwe (L. Semicola/University of Naples "L'Orientale").

32. Contenson 1961, pp. 15-23.

33. Hailemariam 1955.

34. Semicola 2014, pp. 480-481; Semicola 2015, pp. 267-268; Semicola, Phillipson, Fattovich 2016, pp. 223-224; Semicola, Phillipson, Fattovich 2017, p. 160.

35. Manzo 2010; Semicola, Phillipson, Fattovich 2017, p. 160; Zazzaro, Cocca, Manzo 2014.

36. Cosmas Indicopleustès, *Topographia Christiana*, I, 51-52 (ed. and transl. Wolska-Conus 1968-1973, vol. I, pp. 360-362).

37. McCrindle 1897.

38. Munro-Hay 1996, p. 407.

39. Semicola 2017, p. 98.

area where, according to the previously-mentioned 19th century sources, merchant caravans used to stop on their journey from Adwa to Gondar, that is, from the Tigran plateau to the Nile Valley region.⁴⁰

Moreover, recent surveys conducted along the upper course of the Mai Negus demonstrate the existence of a peculiar settlement pattern, completely different from the one found in the area of Aksum or around other major Aksumite centres. Here, remains have been found of small, isolated Aksumite buildings situated at a regular distance of about 15 km that overlook the river valley; fine wares and administrative devices, including counters and coins, form a significant component of the surface materials.⁴¹ These few, isolated buildings are situated out of the salubrious and agriculturally productive northern areas, at a lower altitude which continues to decrease as one moves southwards, and are placed on a narrow plateau flanked on both sides by steep escarpments: they seem to be outposts, placed to mark Aksum's expansion into the south-west, and to control and somehow secure this long-established natural corridor. They are part of a landscape characterized almost exclusively by large lithic sites with no traces of constructed structures nor ceramics. These were probably seasonal camps, reused over time by pastoral groups. No absolute dating evidence has been collected from any of these "lithic" sites yet. However, at least some traits of the lithic industry preliminarily dated to the 1st millennium BCE and the 1st millennium CE, on the basis of similarities with the lithic technology attested at other Aksumite sites in this region.⁴² Of course, future investigations are necessary to enable more precise interpretation, to refine the chronological attribution of these sites, and to better understand the dynamics of economic and cultural interactions that occurred at different spatial scales in ancient times.

As Aksum started to decline in the late 7th century CE, so too did the satellite villages around Aksum's conurbation, including Mai Abeqat,⁴³ the sites along the Mai Negus,⁴⁴ and most of the largest Aksumite cities, like Matara (located along the Adulis-Koloê-Aksum route) and Adulis itself.⁴⁵ After having reached the peak of its hegemony in the southern Red Sea during the 6th century, the port city of Adulis was abandoned, as both written sources and archaeological evidence testify to.

Reassessing hegemonies and hubs: from the decline of Aksum to the 15th century

Very few historical and archaeological evidence illuminate the period immediately after the progressive decline and abandonment of Aksum as a political centre during the 7th century CE. Apparently, the focus of the Christian polity shifted in eastern Tigray, although knowledge about the late 1st millennium in this area is currently limited to a small number of ancient churches.⁴⁶

It seems that, in this period, the maritime hegemony in the southern Red Sea shifted to the Persians. Their supremacy in the Red Sea trade may have taken place from the second half of the 6th century to the first half of the 7th century, until the beginning of the Arab expansion in the Red Sea during

40. Huntingford 1989, pp. 254-255.

41. Sernicola 2019, p. 17; Sernicola, Phillipson, Fattovich 2016, p. 224; Sernicola, Phillipson, Fattovich 2017, pp. 160-161.

42. Sernicola 2019, p. 17; Sernicola, Phillipson, Fattovich 2016, p. 224; Sernicola, Phillipson, Fattovich 2017, pp. 160-161.

43. Sernicola 2017, p. 98.

44. Sernicola 2019, p. 17; Sernicola, Phillipson, Fattovich 2016, p. 224; Sernicola, Phillipson, Fattovich 2017, pp. 160-161.

45. Anfray 1974.

46. D.W. Phillipson 2012, pp. 209-223.

the 9th-10th century CE.⁴⁷ A persistence of the Persian merchants' presence in the southern Red Sea (or coexistence with Arab traders) can be seen in a series of inscribed tomb stones found at Dahlak Kebir, in Kufic characters, dating from between 1040 and 1100 CE.⁴⁸ In this period, the centre of the maritime trade in the northern Horn of Africa became the Dahlak Islands, concurrent with the emergence of a local sultanate. Archaeological evidence of this may be seen by the presence of Islamic mausoleums called "qubba" at Dahlak Kebir and on the Eritrean coast, near Massawa (see *fig. 7* for the location of all place names in this section).⁴⁹

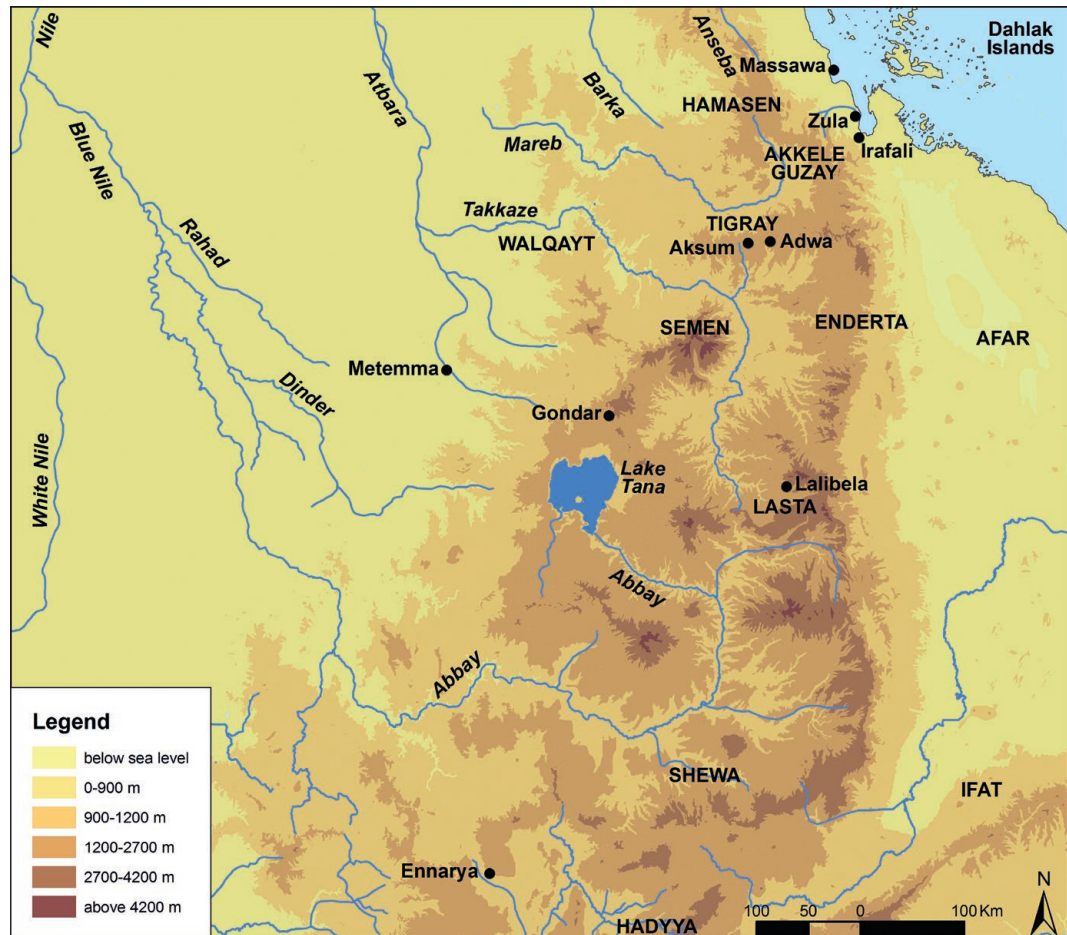


Fig. 7 – Map showing sites and localities mentioned in the paper: 16th to 20th century (L. Sernicola/University of Naples "L'Orientale").

Regardless of the causes catalyzing the Aksum polity's decline, this shift led to a reorganisation of the coastal/inland exchange network (including the north-east/south-west axis), as is apparent from Arabic sources dating to the 9th-10th centuries. In the 9th century, the Arab historian, geographer and traveler Abu al-Hasan 'Ali al-Mas'udi stated that the Ethiopian kingdom had many towns and extended until the sea, where there were the towns of Zula, Basi (perhaps Massawa) and Dahlak.⁵⁰ He

47. Zazzaro 2013, p. 30. Puglisi 1969, pp. 41-43, identifies the material evidence of the Persian presence in the southern Red Sea in a series of water storage installations traditionally attributed to the "Furs" (the Persians) on the Eritrean islands and coast.

48. Oman 1976; Schneider 1983.

49. Zazzaro 2013, pp. 24-26.

50. Tolmacheva 2015, p. 3.

also attests that these towns were inhabited by Muslims paying tribute to the Abyssinians (supposedly, the people of the inland). At the beginning of the 10th century, the Dahlak sultanate was drawn into the Yemenite/Persian orbit due to the strength of their trade contacts: the sultanate stopped paying tribute to the Abyssinian king until it became independent.⁵¹

The route connecting the coast to the inland in this period can be determined from information about the presence of Muslim traders' settlements distributed among the coast and the inland. In fact, it has been found that the Shewa region housed a sultanate (founded in 896-897 CE) during this period.⁵² In the Enderta region, Islamic stelae dating before the 10th century have been found, attesting to the presence of Islamic people in the area.⁵³

Major changes took place in about the 11th century, when a new centralized authority based further to the south in the mountainous region of Lasta was established. Its political centre was located at Adefa (a toponym mentioned both in Arabic and Ethiopic sources), near the ecclesiastical establishment called Roha – subsequently renamed Lalibela, after one of the prominent kings of this period. Archaeological evidence is still scanty and very few written Ethiopian historical records survive from this period. Even the circumstances of the coming to power of this centralized authority are still unclear and the extant information about this event is mostly fabulous and incomplete; what appears clear from the propaganda successive to its decline is that an ethnic group – presumably of Agaw descent – distinct from the one that had ruled previously, had come to power.

Traditionally known as the “Zagwe dynasty” – although others prefer to refer to it as the “Lasta period” –⁵⁴ the rulers of this period, which lasted until the third quarter of the 13th century, administered a centralized Christian realm, but apparently exerted non-direct control east of the Shewan plateau, in a territory increasingly occupied by such Muslim states as Ifat and Hadya.⁵⁵ Their main outlet to the sea seems to have been Zula, from where they got engaged in long-distance trade, although to a much lesser extent than Aksum. Unlike Aksum, the Zagwe kingdom was virtually unknown to the coeval Mediterranean powers; the few available archaeological and historical information about this period suggest relations with Egypt and the Holy Land.⁵⁶ As documented in the repeated correspondence with the patriarchs of Alexandria as well as the sultans of Egypt,⁵⁷ Ethiopian delegations were recurrently sent to Egypt to ask for a Metropolitan with gifts from the Ethiopian kings to the sultans. Ethiopian/Egyptian relations in this period are attested by the presence of Ethiopian monks in Coptic monasteries and are also observable in the monuments:⁵⁸ the painting and decorations of medieval Lasta churches provide many examples of encounters between Ethiopians and other Oriental Christians – mostly Coptic and perhaps Byzantines.⁵⁹ Recently acquired evidence of imported cedar woods and painting minerals such as lapis lazuli – presumably via Egypt – at the Church of Yimrhana Kristos gives insights on the nature of some of the goods brought from abroad.⁶⁰ Finally, Ethiopian pilgrims and communities are attested in the Holy Land,⁶¹ also during the Crusades period, when Ethiopian kings, mainly for economic and political reasons, preferred to maintain their relations with

51. Tedeschi 1969.

52. Cerulli 1971, pp. 207-208.

53. Pansera 1945.

54. Gobezie Worku 2018, pp. 20-25.

55. Fiaccadori 2014.

56. Meinardus 1970, p. 117.

57. Atiya, ‘Abd al-Masih, Burmester 1948; Evetts 1895.

58. Blid et al. 2016, pp. 207-208; Bolman 2002, pp. 189-190; Meinardus 1970, p. 429; el-Antony, Blid, Butts 2016; Gobezie Worku 2018, p. 38.

59. Balicka-Witakowska, Gervers 2001; Balicka-Witakowska, Gervers 2011; Thiessen 2010.

60. Gobezie Worku 2018, pp. 83-145.

61. Cerulli 1943; Pedersen 1983.

the Islam-dominated Middle East; monasteries, plots of land and other important places in Jerusalem were donated to Ethiopians.⁶² In 1270 the Zagwe dynasty came to an end, and the political power was transferred back to “semitic-speaking” people. This represented a further stage in the continuing southward shift of the power centre.

Apart from some of the tomb stones found at Dahlak Kebir, archaeological evidence on the maritime networks for the period from the 10th-11th centuries to the 16th century seem to be very limited in the maritime space of the northern Horn of Africa. Despite that, textual evidence suggests that there was an active maritime trade network and relationships among Egypt and the southern Red Sea which involved both Egyptian, Arab and Jews merchants. Some aspects of this period commercial interactions in the Red Sea, and the role of the Dahlak Archipelago, have been outlined by Bramoullé⁶³ and Margariti⁶⁴ on the basis of textual evidence.

A phase of network fluidity, among the coast, lowland and highland, in the northern Horn of Africa, is suggested for this period, with areas subject to “semitic-speaking” authorities being in a state of constant flux and no evidence of a permanent capital city until the 16th century, when Gondar progressively emerged as a commercial hub and political centre.

Changing network routes: the 16th and 17th centuries

After a long period of hiatus in the archaeological evidence, it seems that the connections among the coast and the inland through the south-western route were revived in the 16th and 17th centuries, probably in part as a consequence of the Portuguese and Ottoman presence in the Red Sea and the related revival of the trading routes towards the eastern Indian Ocean.

Starting from 1506-1507, in order to close off the Mameluke sultanate from the trade to and from the Indian Ocean, a Portuguese fleet under the command of Tristão da Cunha and Afonso de Albuquerque aimed at blocking the entrance to the Red Sea. The armada set sail to Cape Guardafui, went to Socotra, and then proceeded to Aden. After an unsuccessful attempt to seize the town, Albuquerque sailed towards the Red Sea, the fleet set sail and went to some islands near Kamaran, and then to Dahlak Kebir and Massawa. The aim of the Portuguese to control the Red Sea entrance through Dahlak and Massawa was accomplished in 1520 but it ended in 1557 with the Ottoman conquest of Massawa. Towards the end of the 16th century, the Portuguese opened the maritime route around the Cape of Good Hope, thus enabling the Portuguese empire’s expansion into South and Southeast Asia. This event led to the contraction of the trade routes along the Red Sea route.⁶⁵

Gondar

In this period, Gondar became the new capital and trade centre for a long period of time (and with a strong Portuguese influence) after many centuries of Ethiopia lacking a permanent capital city. Geographically, Gondar was located at the center of commercial activity: situated about 35 km north of Lake Tana, Gondar was on, or close to, the point at which the main caravan track going from Metemma to Tana joined the route from Ennarya to the Red Sea (*fig. 7*).

Since at least the 14th century, Gondar acted as a trading center along this route, and was subsequently designated as a small market town inhabited by Muslim traders. In the 17th century, Muslim traders

62. Abir 1980, p. 15; Cerulli 1943, pp. 33-37; Erlich 1994, p. 23; Tamrat 1977, p. 114; Trimmingham 1965, p. 56.

63. Bramoullé 2012.

64. Margariti 2010.

65. See Couto, this volume.

made Gondar the major emporium of northern Ethiopia, importing foreign wares in exchange for civet, coffee, gold, hides and slaves. Salt bars served as the medium of exchange. Trade and commerce were the economic mainstays of the city, underpinning the caravan trade going north to the Red Sea coast, west to Metemma, and south to Ennarya. Later on, in the 17th century, King Fasilidas selected Gondar as his capital city, with the indubitable intention of directly supervising customs collection on the Red Sea, Tana, and Ennarya trade routes.

Irafali

In 2014, a team from the Massawa Museum identified a coastal site in the south of the Gulf of Zula (4 km to the north of the present-day village of Irafali and 14 km to the south of Adulis).⁶⁶ The site extends ca 1,000×500 m west-east from the Massawa-Assab road to the coastline, in the Bay of Irafali, in the southern part of the Gulf of Zula (*fig. 7*). This is an open bay enclosed by coral reef, and is marked by the presence of the Dola Vulcan. The area is rich in hot water sources and there are many nearby wells (*fig. 8*).⁶⁷ On the opposite side of the road, a long and extended stone wall runs perpendicular to the modern road. Several large rectangular stone structures are visible on the site surface; a large circular structure is close to the road, has white pebbles or quartz on top of it, and is likely a burial site (*fig. 9a, 9b*).



Fig. 8 – The site of Irafali in the Gulf of Zula, extending ca 1,000×500 m (C. Zazzaro/University of Naples “L’Orientale”).

66. In the second half of the 19th century, Giuseppe Sapeto recorded the remains of fence enclosures and a large wall, ca 3 m long, in a place called Gobetti. According to Sapeto, local people considered this evidence as ancient (Sapeto 1871). It may be possible that this large wall is part of the site that has been identified by the team of the Massawa Museum.

67. *Red Sea and Gulf of Aden pilot*, p. 231.



Fig. 9a – The site of Irafali, a circular structure with quartz (C. Zazzaro/University of Naples “L’Orientale”).



Fig. 9b – The site of Irafali, squared stone structures (C. Zazzaro/University of Naples “L’Orientale”).

Several potsherds were observed on the surface, as well as colored opaque glass bracelets and semi-precious gems. The pottery assemblage included a large variety of local and imported wares, including green underglaze potsherds from Iran and Chinese porcelain. Preliminary pottery analysis dates to the 16th century, suggesting the site may correspond to the ancient settlement of Irafali (*fig. 10a, 10b*).



Fig. 10a – The surface pottery collection from Irafali, Chinese porcelain (C. Zazzaro/University of Naples "L'Orientale").



Fig. 10b – The surface pottery collection from Irafali, Iranian glassware (C. Zazzaro/University of Naples "L'Orientale").

The name of this port was recorded in maps since the 15th century and in literary sources since the 17th century. According to historical sources, Irafali was an important trade center that was linked to the inland by two main caravan routes, one going to the Afar lands and the other to the Akkele Guzai and to Tigray. The main trade goods were salt, grain, cattle, and luxurious goods (such as tobacco, sugar and textiles). Between 1635 and 1638, Jesuit missionaries hid at and around Irafali.⁶⁸ It seems that the port lost its importance in the 19th century, and was replaced by other commercial centers like Zula, Massawa, and other Afar ports along the Red Sea coast.

Conclusions

Investigations along the Mai Negus/Haselo valley, south-west of Aksum, demonstrate that the involvement of various sites in the trade network linking the coastal regions of present-day Eritrea with the internal areas of the northern Horn of Africa predates both the ascent of Adulis as a commercial hub and the rise of the Indo-Roman trade. Similarly, recent researches and observations indicate that a coastal, lowland and highland network resumed long after Aksum's decline, reorganizing itself in response to the fluctuating importance of the involved centres, e.g. Gondar and Irafali in the 17th century.

Although archaeological evidence is still scanty, for the period after Aksum's decline until the modern period, the combination – when possible – of material evidence and literary sources is providing new and stimulating insights in the reconstruction and analysis of this dynamic network. Based on a pattern of natural corridors through the coast, lowland and highland, this network continuously readapted to changing ecological, social, economic and political conditions. These affected the nature and distribution of required goods and natural resources as well as the weight and location of major nodes and hubs. The archaeological record, for its part, helps illuminating those periods for which historical sources are not available, making it possible to investigate the inherent fluidity of this network in a "longue durée" perspective. Future research in this direction will contribute to a better understanding of this complex historical dynamic.

68. Abdulkader 2007, p. 182.

Bibliography

Abbreviations

AAR: *African Archaeological Review* (Cambridge).

MittSAG: *Der Antike Sudan. Mitteilungen der Sudanarchäologischen Gesellschaft zu Berlin e.V.* (Berlin).

Works cited

- Abdulkader 2007: S. Abdulkader, “Irāfālo”, in S. Uhlig (ed.), *Encyclopaedia Aethiopica* III. *He-N*, Wiesbaden, Harrassowitz, 2007, pp. 181-182.
- Abir 1980: M. Abir, *Ethiopia and the Red Sea*, London, Frank Cass, 1980.
- Anfray 1967: F. Anfray, “Matara”, *Annales d’Éthiopie* 7, 1967, pp. 33-88, https://www.persee.fr/doc/ethio_0066-2127_1967_num_7_1_865 (accessed 20/01/2021).
- Anfray 1968: F. Anfray, “La poterie de Matara”, *Rassegna di Studi Etiopici* 22, 1968, pp. 5-74.
- Anfray 1970: F. Anfray, “Matara”, *Travaux de la Recherche Coopérative sur Programme* 230. *Documents pour servir à l’histoire des civilisations éthiopiennes* 1, 1970, pp. 53-60.
- Anfray 1974: F. Anfray, “Deux villes axoumites: Adoulis et Matara”, in *Atti del IV Congresso Internazionale di Studi Etiopici*, Rome, Accademia Nazionale dei Lincei, 1974, pp. 747-765.
- el-Antony, Blid, Butts 2016: M. el-Antony, J. Blid, A.M. Butts, “An early Ethiopic manuscript fragment (twelfth-thirteenth century) from the monastery of St. Antony (Egypt)”, *Aethiopica* 19, 2016, pp. 27-51, <https://journals.sub.uni-hamburg.de/aethiopica/article/view/969/1028> (accessed 20/01/2021).
- Atiya, ‘Abd al-Masih, Burmester 1948: Sawirus ibn-al-Mukaffā, *History of the patriarchs of the Egyptian Church, known as the History of the Holy Church*, transl. A.S. Atiya, Y. ‘Abd al-Masih, O.H.E. Burmester, Cairo, Société d’archéologie copte, 1948.
- Balicka-Witakowska, Gervers 2001: E. Balicka-Witakowska, M. Gervers, “The church of Yəmrrāhannā Krəstos and its wall-paintings: a preliminary report”, *African Bulletin* 49, 2001, pp. 9-48.
- Balicka-Witakowska, Gervers 2011: E. Balicka-Witakowska, M. Gervers, *The church of Yemrehannā Krestos*, Milan, Skira, 2011.
- Bent 1893: J.T. Bent, *The sacred city of the Ethiopians, being a record of travel and research in Abyssinia in 1893*, London/New York, Longmans, Green & Co, 1893.
- Bernand 2000: É. Bernand, *Recueil des inscriptions de l’Éthiopie des périodes pré-axoumite et axoumite* III. *Traductions et commentaires*, Paris, De Boccard, 2000.
- Bernand, Drewes, Schneider 1991a: É. Bernand, A.J. Drewes, R. Schneider, *Recueil des inscriptions de l’Éthiopie des périodes pré-axoumite et axoumite* I. *Les documents*, Paris, Académie des inscriptions et belles lettres, 1991.
- Bernand, Drewes, Schneider 1991b: É. Bernand, A.J. Drewes, R. Schneider, *Recueil des inscriptions de l’Éthiopie des périodes pré-axoumite et axoumite* II. *Les planches*, Paris, Académie des inscriptions et belles lettres, 1991.
- Blid et al. 2016: J. Blid, M. el-Antony, H. Lundhaug, J. Zaborowski, M. Polliack, M. Gobezie Worku, S. Rubenson, “Excavations at the monastery of St. Anthony at the Red Sea”, *Opuscula* 9, 2016, pp. 133-215.
- Bolman 2002: E.S. Bolman (ed.), *Monastic visions: wall paintings in the monastery of St. Antony at the Red Sea*, Cairo/New Haven/London, American Research Center in Egypt/Yale University Press, 2002.
- Bramoullé 2012: D. Bramoullé, “The Fatimids and the Red Sea (969-1171)”, in D.A. Agius, J.P. Cooper, A. Trakadas, C. Zazzaro (ed.), *Navigated spaces, connected places. Proceedings of Red Sea Project V held at the University of Exeter, 16-19 September 2010*, Oxford, Archaeopress, 2012, pp. 127-136.
- Casson 1989: *Periplus Maris Erythraei*, ed. and transl. L. Casson, Princeton, Princeton University Press, 1989.

- Cerulli 1943: E. Cerulli, *Etiopi in Palestina. Storia della Comunità Etiopica di Gerusalemme I*, Rome, Liveria dello Stato, 1943.
- Cerulli 1971: E. Cerulli, *L'islam di ieri e di oggi*, Rome, Istituto per l'Oriente, 1971.
- Contenson 1961: H. de Contenson, "Trouvailles fortuites aux environs d'Axoum (1957-1959)", *Annales d'Éthiopie* 4, 1961, pp. 15-38, https://www.persee.fr/doc/ethio_0066-2127_1961_num_4_1_1117 (accessed 20/01/2021).
- Contenson 1963: H. de Contenson, "Les fouilles à Haoulti en 1959. Rapport préliminaire", *Annales d'Éthiopie* 5, 1963, pp. 41-52, https://www.persee.fr/doc/ethio_0066-2127_1963_num_5_1_1331 (accessed 20/01/2021).
- Conti Rossini 1928: C. Conti Rossini, *Storia d'Etiopia 1. Dalla origini all'avvento della dinastia Salomonide*, Bergamo, Istituto Italiano d'Arti Grafiche, 1928.
- Curtis 2008: M.C. Curtis, "Qohaito: an ancient highland urban center", in P. Schmidt, M.C. Curtis, Z. Teka (ed.), *The archaeology of ancient Eritrea*, Trenton/Asmara, The Red Sea Press, 2008, pp. 287-300.
- D'Andrea et al. 2008: A.C. D'Andrea, A. Manzo, M.J. Harrower, A.L. Hawkins, "The pre-Aksumite and Aksumite settlement of NE Tigray, Ethiopia", *JFA* 33/2, 2008, pp. 151-176.
- Erlich 1994: H. Erlich, *Ethiopia and the Middle East*, Boulder, Lynne Rienner Publishers, 1994.
- Evetts 1895: [Abu al-Makārim], *The churches and monasteries of Egypt and some neighboring countries attributed to Abu Salih, the Armenian*, ed. and transl. B.T.A. Evetts, Oxford, Clarendon Press, 1895.
- Fattovich 2014: R. Fattovich, "The architecture of power in Tigray (northern Ethiopia) and Eritrea in the 1st millennium BCE-1st millennium CE", in A. Lohwasser, P. Wolf (ed.), *Ein Forscherleben zwischen den Welten. Zum 80. Geburtstag von Steffen Wenig*, published in *MittSAG Special Issue*, 2014, pp. 95-110, <https://www.sag-online.de/alle-sonderausgaben/inhalt-sonderheft-ein-forscherleben-zwischen-den-welten-2014> (accessed 20/01/2021).
- Fattovich et al. 2012: R. Fattovich, H. Berhe, L. Phillison, L. Sernicola, "Archaeological expedition at Aksum (Ethiopia) of the Università degli Studi di Napoli 'L'Orientale' (2010 field season: Seglamen)", *Newsletter di Archeologia CISA* 3, 2012, pp. 111-228, [https://www.unior.it/userfiles/workarea_231/file/NewsletterArcheologia_numero_3/3_Fattovichetalii\(1\).pdf](https://www.unior.it/userfiles/workarea_231/file/NewsletterArcheologia_numero_3/3_Fattovichetalii(1).pdf) (accessed 05/03/2020).
- Fiaccadori 2014: G. Fiaccadori, "Zagwe", in A. Bausi (ed.), *Encyclopaedia Aethiopica, V.Y-Z*, Wiesbaden, Harrassowitz, 2014, pp. 107-114 (in cooperation with S. Uhlig).
- Gobezie Worku 2018: M. Gobezie Worku, *The church of Yimrhane Kristos. An archaeological investigation*, Lund, Lund University, 2018.
- Hable-Selassie 1964: S. Hable-Selassie, *Beziehungen Äthopiens zur griechisch-römischen Welt*, Bonn, Habelt, 1964.
- Hailemariam 1955: G. Hailemariam, "Objects found in the neighborhood of Aksum", *Annales d'Éthiopie* 1, 1955, pp. 50-51, https://www.persee.fr/doc/ethio_0066-2127_1955_num_1_1_1229 (accessed 20/01/2021).
- Huntingford 1980: *The Periplus of the Erythraean Sea, by an unknown author; with some extracts from Agatharkhidēs "On the Erythraean Sea"*, ed. and transl. G.W.B. Huntingford, London, Hakluyt Society, 1980.
- Huntingford 1989: G.W.B. Huntingford, *The historical geography of Ethiopia. From the first century AD to 1704*, Oxford, Oxford University Press, 1989.
- Kobishchanov 1979: Y.M. Kobishchanov, *Axum*, University Park/London, Pennsylvania State University Press, 1979 (transl. L.T. Kapitanoff).
- Krencker 1913: S. Krencker, *Die Deutsche Aksum-Expedition II. Ältere Denkmäler Nordabessiniens*, 2 vol., Berlin, Georg Reimer, 1913, <https://archive.org/details/alteredenkmalern00kren/page/n1/mode/2up> (accessed 21/01/2021).
- Makonnen, Phillipson, Sernicola 2013: H. Makonnen, L. Phillipson, L. Sernicola, "Archaeological expedition at Aksum (Ethiopia) of the Università degli Studi di Napoli 'L'Orientale' – 2011 field season: Seglamen", *Newsletter di Archeologia CISA* 4, 2013, pp. 393-439, https://www.unior.it/userfiles/workarea_231/file/NL4/Articoli/09_Sernicola_et_alii.pdf (accessed 05/03/2020).
- Manzo 2010: A. Manzo, "Adulis before Aksum? Possible 2nd and 1st millenium BC evidence from the site of the ancient port", *Annali* 70, 2010, pp. 29-42.

- Margariti 2010: R. Margariti, “Thieves or sultans? Dahlak and the rulers and merchants of Indian Ocean port cities, 11th-13th centuries”, in L.K. Blue, J.P. Cooper, R. Thomas, J. Whitewright (ed.), *Connected hinterlands. Proceedings of Red Sea Project IV, held at the University of Southampton, September 2008*, Oxford, Archaeopress, 2010, pp. 155-163.
- McCrimdell 1897: Cosmas Indicopleustès, *Christian topography*, ed. and transl. J.W. McCrimdell, London, Hakluyt society, 1897.
- Meinardus 1970: O.F.A. Meinardus, *Christian Egypt faith and life*, Cairo, The American University in Cairo Press, 1970.
- Michels 2005: J.W. Michels, *Changing settlement patterns in the Aksum-Yeha region of Ethiopia: 700 BC-AD 850*, Oxford, Archaeopress, 2005.
- Müller 1883-1901: K. Müller, *Klaudiou Ptolemaiou Geographikê hyphêgêsis: Claudi i Ptolemaei Geographia*, 2 vol., Paris, Firmin Didot, 1883-1901.
- Munro-Hay 1982: S.C. Munro-Hay, “The foreign trade of the Aksumite port of Adulis”, *Azania* 17/1, 1982, pp. 107-125.
- Munro-Hay 1996: S.C.H. Munro-Hay, “Aksumite overseas interests”, in J.E. Reade (ed.), *The Indian Ocean in Antiquity*, London/New York, Kegan Paul International, 1996, pp. 403-416.
- Oman 1976: G. Oman (ed.), *La necropoli islamica di Dahlak Kebir (Mar Rosso)*, Naples, Istituto Universitario Orientale, 1976.
- Pansera 1945: C. Pansera, “Quattro stele musulmane presso Uogher Hariba nell’Endertà”, in C. Conti Rossini (ed.), *Studi Etiopici*, Rome, Istituto per l’Oriente, 1945, pp. 3-6.
- Pedersen 1983: K. Pedersen, *The history of the Ethiopian community in the Holy Land from the time of Emperor Tewodros II till 1974*, Jerusalem, Ecumenical Institute for Theological Research-Tantur, 1983.
- Phillipson 2000: D.W. Phillipson, *Archaeology at Aksum, Ethiopia 1993-7*, 2 vol., London, The British Institute in Eastern Africa/The Society of Antiquaries of London, 2000.
- Phillipson 2012: D.W. Phillipson, *Foundations of an African civilisation. Aksum and the northern Horn, 1000 BC-AD 1300*, Woodbridge/Rochester, James Currey, 2012.
- Phillipson 2012: L. Phillipson, “Grindstones and related artefacts from pre-Aksumite Seglamen, northern Ethiopia and their wider implications”, *Azania* 47/4, 2012, pp. 509-530.
- Phillipson 2013a: L. Phillipson, “Lithic tools used in the manufacture of pre-Aksumite ceramics”, *Azania* 48/3, 2013, pp. 380-402.
- Phillipson 2013b: L. Phillipson, “Parchment production in the first millennium BC at Seglamen, northern Ethiopia”, *AAR* 30/3, 2013, pp. 283-303.
- Puglisi 1969: G. Puglisi, “Alcune vestigial dell’isola Dahlac Chebire la leggenda dei Furs”, in *Proceedings of the third international congress of Ethiopian studies I*, Addis Abeba, Institute of Ethiopian Studies, Haile Selassie I University, 1969, pp. 35-47.
- Red Sea and Gulf of Aden pilot*, London, printed for the Hydrographic Office Admiralty by Eyre & Spottiswoode, 1909 (6th ed.).
- Ricci, Fattovich 1984-1986: L. Ricci, R. Fattovich, “Scavi archeologici nella zona di Aksum. A. Seglamen”, *Rassegna di Studi Etiopici* 30, 1984-1986, pp. 117-169.
- Ritler 2010: A. Ritler, “Täkkäze”, in S. Uhlig (ed.), *Encyclopaedia Aethiopica IV, O-X*, Wiesbaden, Harrassowitz, 2010, pp. 823-825.
- Sapeto 1871: G. Sapeto, “Ambasciata mandata nel 1869 dal Governo francese al Negussié Degiazmate del Tigrè e del Samièn”, *Bollettino della Società Geografica Italiana* 6, 1871, pp. 22-71.
- Schneider 1976: R. Schneider, “Documents épigraphiques de l’Éthiopie – V”, *Annales d’Éthiopie* 10, 1976, pp. 81-93, https://www.persee.fr/doc/ethio_0066-2127_1976_num_10_1_1162 (accessed 20/01/2021).
- Schneider 1983: M. Schneider, *Stèles funéraires musulmanes des îles Dahlak (mer Rouge)*, Le Caire, IFAO, 1983.
- Sernicola 2014: L. Sernicola, “Archaeological expedition at Aksum of the Università degli Studi di Napoli ‘L’Orientale’ – 2012 field season: Seglamen”, *Newsletter di Archeologia CISA* 5, 2014, pp. 479-506, [https://www.unior.it/userfiles/workarea_231/file/NL5/Testi PDF/Sernicolartalii\(1\).pdf](https://www.unior.it/userfiles/workarea_231/file/NL5/Testi PDF/Sernicolartalii(1).pdf) (accessed 05/03/2020).

- Sernicola 2015: L. Sernicola, "Archaeological expedition at Aksum (Ethiopia) of the University of Naples 'L'Orientale' – 2013 field season: Seglamen", *Newsletter di Archeologia CISA* 6, 2015, pp. 267-279, [https://www.unior.it/userfiles/workarea_231/file/NL6/Notiziario2014/020_Sernicolaetali\(2\).pdf](https://www.unior.it/userfiles/workarea_231/file/NL6/Notiziario2014/020_Sernicolaetali(2).pdf) (accessed 05/03/2020).
- Sernicola 2017: L. Sernicola, *Ancient settlement patterns in the area of Aksum (Tigray, northern Ethiopia) – ca. 900 BCE-800/850 CE*, Oxford, BAR Publishing, 2017.
- Sernicola 2019: L. Sernicola, "Archaeological excavations in the area of Aksum: Seglamen", *Rassegna di Studi Etiopici (3a Serie)* 3, 2019, pp. 11-38.
- Sernicola, Phillipson, Fattovich 2016: L. Sernicola, L. Phillipson, R. Fattovich, "Archaeological expedition at Aksum (Ethiopia) of the University of Naples 'L'Orientale' – 2014 field season: Seglamen", *Newsletter di Archeologia CISA* 7, 2016, pp. 223-241, [https://www.unior.it/userfiles/workarea_231/file/NL7/Notiziario2015/007_Sernicola\(2\).pdf](https://www.unior.it/userfiles/workarea_231/file/NL7/Notiziario2015/007_Sernicola(2).pdf) (accessed 05/03/2020).
- Sernicola, Phillipson, Fattovich 2017: L. Sernicola, L. Phillipson, R. Fattovich, "Archaeological expedition at Aksum (Ethiopia) of the Università degli Studi di Napoli 'L'Orientale' – 2015 and 2016 field seasons: Seglamen", *Newsletter di Archeologia CISA* 8, 2017, pp. 159-171, https://www.unior.it/userfiles/workarea_231/file/NL8/Notiziario2016/Sernicola.pdf (accessed 05/03/2020).
- Tamrat 1977: T. Tamrat, "Ethiopia, the Red Sea and the Horn", in J.D. Fage, R. Oliver (ed.), *The Cambridge history of Africa* 3. *From c. 1050-to c. 1600*, Cambridge/London/New York, Cambridge University Press, 1977, pp. 98-172.
- Tedeschi 1969: S. Tedeschi, "Note storiche sulle isole Dahlak", *Proceedings of the Third International Conference of Ethiopian Studies (1966)*, Addis Abeba, Institute of Ethiopian Studies, Haile Selassie I University, 1969, pp. 49-74.
- Thiessen 2010: Z. Thiessen, *Yemrehannä Krestos church: documenting cultural heritage in Ethiopia*, Stockholm, Cultural Heritage without Borders (CHWB), 2010.
- Tolmacheva 2015: M.A. Tolmacheva, "The Indian Ocean in Arab geography: transmission of knowledge between formal and informal geographical traditions", *Terra Brasilis* 6, 2015, <https://journals.openedition.org/terrabrasilis/1585> (accessed 05/03/2020).
- Trimingham 1965: J.S. Trimingham, *Islam in Ethiopia*, London, Frank Cass and Co, 1965.
- Van Beek 1969: G.W. Van Beek, *Hajarbin Humeid. Investigations at a pre-Islamic site in South Arabia*, Baltimore, Johns Hopkins Press, 1969.
- Voigt 1999: R. Voigt, "Kolón und Kohaito ('Auf-/Ausblick'): studien zur äthiopischen Toponomastik 1", *Aethiopica* 2, 1999, pp. 90-102, <https://journals.sub.uni-hamburg.de/aethiopica/article/view/535/539> (accessed 20/01/2021).
- Wenig 1997: S. Wenig, "German fieldwork in Eritrea", *Nyame Akuma* 48, 1997, pp. 20-21, <https://www.africanistarchaeology.net/1997-1> (accessed 20/01/2021).
- Wolf, Nowotnik 2010a: P. Wolf, U. Nowotnik, "The Almaqah temple of Meqaber Ga'ewa near Wuqro (Tigray, Ethiopia)", *Proceedings of the Seminar for Arabian Studies* 40, 2010, pp. 367-380.
- Wolf, Nowotnik 2010b: P. Wolf, U. Nowotnik, "Das Heiligtum des Almaqah von Meqaber Ga'ewa in Tigray/Äthiopien", *ZorA* 3, 2010, pp. 164-213 (mit Beiträgen von C. Holf, M. Daszkiewicz, G. Schneider, E. Bobryk, A. Porter).
- Wolska-Conus 1968-1973: Cosmas Indicopleustès, *Topographie chrétienne* I-III, 3 vol., ed. and transl. W. Wolska-Conus, Paris, Éditions du Cerf, 1968-1973.
- Zazzaro 2013: C. Zazzaro, *The ancient Red Sea port of Adulis and the Eritrean coastal region. Previous investigations and museum collections*, Oxford, BAR Publishing, 2013.
- Zazzaro, Cocca, Manzo 2014: C. Zazzaro, E. Cocca, A. Manzo, "Towards a chronology of the Eritrean Red Sea port of Adulis (1st-early 7th century AD)", *Journal of African Archaeology* 12/1, 2014, pp. 43-73.
- Zazzaro et al. 2015: C. Zazzaro, A. Carannante, F. Clément, C. Morhange, "Adulis in its regional maritime context. A preliminary report of the 2015 field season", *Newsletter di Archeologia CISA* 6, 2015, pp. 279-294, [https://www.unior.it/userfiles/workarea_231/file/NL6/Notiziario2014/021_Zazzaroetali\(1\).pdf](https://www.unior.it/userfiles/workarea_231/file/NL6/Notiziario2014/021_Zazzaroetali(1).pdf) (accessed 07/03/2020).