



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.



© 2022 – Maison de l'Orient et de la Méditerranée – Jean Pouilloux
7 rue Raulin, F-69365 Lyon Cedex 07



European Research Council
Established by the European Commission



ISBN 978-2-35668-078-5
ISSN 2724-8933

85 €

MAISON DE L'ORIENT ET DE LA MÉDITERRANÉE – JEAN POUILLOUX

Fédération de recherche sur les sociétés anciennes

Responsable scientifique des publications : Isabelle Boehm

Coordination éditoriale : Ingrid Berthelier

Secrétariat d'édition de l'ouvrage : Christel Visée ; composition : Clarisse Lachat

Conception graphique : Catherine Cuvilly

Networked spaces: the spatiality of networks in the Red Sea and Western Indian Ocean.

Proceedings of the Red Sea Conference IX, Lyon, 2-5 July 2019

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

Lyon, Maison de l'Orient et de la Méditerranée – Jean Pouilloux, 2022

672 p., 258 ill., 30 cm

(Archéologie(s) ; 8)

Keywords :

Red Sea, Horn of Africa, Indian Ocean, Antiquity, medieval period, network, trade, port, nomad, navigation, logistics, spatiality

Mots-clés :

mer Rouge, Corne de l'Afrique, océan Indien, Antiquité, époque médiévale, réseau, commerce, port, nomade, navigation, logistique, spatialité

ISSN 2724-8933

ISBN 978-2-35668-078-5

© 2022 Maison de l'Orient et de la Méditerranée – Jean Pouilloux

7 rue Raulin, F-69365 Lyon Cedex 07

Édition numérique

OpenEdition Books : books.openedition.org/momeditions

Diffusion/distribution

FMSH-Diffusion, Paris : fms-diffusion@msh-paris.fr

Commande/facturation : cid@msh-paris.fr

Librairie en ligne : www.lcdpu.fr

NETWORKED SPACES

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

Proceedings of the Red Sea Conference IX, Lyon, 2-5 July 2019

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

Contents

Caroline Durand, Julie Marchand, Bérangère Redon, Pierre Schneider Space and networks. The Red Sea model	11
---	----

MODERN EXPLORATION OF THE RED SEA

Dejanirah Couto “All the wealth of the world will be in your hands”. A vision of the Red Sea in the early 16th century through the Letters of Afonso de Albuquerque (1513)	19
--	----

Roxani Eleni Margariti From Berlin to the Coral Sea. Sea, islands and maritime knowledge in the Red Sea expeditions of Wilhelm Hemprich and Christian Ehrenberg (1823-1825)	35
---	----

ARCHAEOLOGY OF PORTS

Claire Somaglino, Pierre Tallet Vingt années de fouille des ports pharaoniques d’Ayn Soukhna et du Ouadi el-Jarf sur la côte occidentale du Golfe de Suez (2001-2020)	55
---	----

Marek Adam Woźniak Berenike – why there? Environmental, economic and logistic conditions of the Hellenistic port/base location	73
--	----

Michał Gawlikowski Les Nabatéens à Aynouna sur la mer Rouge	97
--	----

Mahmoud Abd el-Raziq, Julie Marchand, Claire Somaglino A regional and international hub of trade. New data about the harbour of Clysma/al-Qulzum	107
---	-----

Laurence Smith, Michael Mallinson, Jacke Phillips, Shadia Taha, Colin Breen, Wes Forsythe, Ali Mohamed Abdelrahman From Gujarat to the Red Sea. The connectivity of the port of Suakin, Sudan, within the western Indian Ocean	119
---	-----

ISLANDS AND INSULARITY

Solène Marion de Procé Remarks on the organization of territory in an insular context. The case of the Farasān Islands (southern Red Sea) in Antiquity	141
--	-----

Christian Julien Robin A likely identification of “Sambrachate, and a homonymous city on the continent” (Pliny, <i>Natural history</i> , VI, 151)	163
---	-----

Mathilde Gelin, Jean-Michel Gelin, Barbara Couturaud, Jean-Baptiste Houal, Hervé Monchot
The integration of the island of Ikaros into “international” and regional networks 175

Julie Bonnéric
Why islands? Understanding the insular location of Late Sasanian and Early Islamic Christian monasteries in the Arab-Persian Gulf 193

PLACES AND POWER

Matthew Adam Cobb, Troy Wilkinson
The Roman state and Red Sea trade revenue 213

Jeremy A. Simmons
Dire straits. Safeguarding trade on the Red Sea and Gulf of Khambhat (ca 1-300 CE) 227

Pierre-Louis Gatier
Le temple de Ruwāfa dans la province romaine d'Arabie 245

David Bramoullé
Les ports du pays beja à l'époque fatimide. Un espace de la liminalité 285

Shadia Taha
Suakin, between the sea and the desert: connected landscapes 305

ARCHAEOLOGY OF CIRCULATIONS

Isabelle Goncalves
Exploiting and crossing the Egyptian Eastern Desert during the Pharaonic Era 329

Jennifer Gates-Foster
Third century BCE supply networks and Ptolemaic transport amphoras from 'Abbad and Bī'r Samut in Egypt's Eastern Desert 347

Joan Oller Guzmán
From the sea, to the river, through the desert. Some issues regarding the emerald trade network in Roman Egypt 365

Julie Marchand
Early Islamic soft-stone vessels. Production and distribution on both sides of the Red Sea 385

Fabien Lesguer
Zones de production de céramiques dans la péninsule Arabique entre le VI^e siècle av. J.-C. et le XIV^e siècle ap. J.-C. 401

Sterenn Le Maguer-Gillon
Ports of trade and other maritime structures involved in the frankincense trade between Arabia and China, 8th-14th centuries 417

ROADS AND NETWORKS

Yannis Gourdon
Des carrières au Nil. Halage des pierres et maillage territorial sur le plateau de Hatnoub (travaux préliminaires) 437

Maël Crépy, Bérange Redon
Water resources and their management in the Eastern Desert of Egypt from Antiquity to the present day. Contribution of the accounts of modern travelers and early scholars (1769-1951) 451

Julia Lougovaya Learning to write and read at Didymoi. A diachronic approach	493
Shailendra Bhandare, H��l��ne Cuvigny, Thomas Faucher An Indian coin in the Eastern Desert of Egypt	507
La��la Nehm�� Land (and maritime?) routes in and between the Egyptian and Arabian shores of the northern Red Sea in the Roman period	513
 NEW PERSPECTIVES ON THE HORN OF AFRICA	
Anne Benoist, Iwona Gajda, J��r��mie Schiettecatte, Ninon Blond, Olivier Barge, Diego Capra, Emmanuelle R��gagnon, Emmanuelle Vila Emprises et d��prises agricoles aux marges du Tigray oriental. Les r��gions de Wolwalo et Wakarida de la p��riode pr��-aksumite �� la fin de la p��riode aksumite	531
Luisa Sernicola, Chiara Zazzaro Islands, coast, lowland and highland. From the Red Sea to Aksum and beyond: the north-east/south-west network in ancient and modern times	561
Jacke Phillips Why <i>this</i> one? And why <i>here</i>?	581
Adolfo Fern��ndez Fern��ndez, Alfredo Gonz��lez-Ruibal, Jorge de Torres New evidence of long-distance trade in Somaliland in Antiquity. Imported materials from the 2018-2019 field seasons at Xiis (Heis), 1st to 3rd centuries AD	607
Jorge de Torres The archaeology of the medieval trade networks in western Somaliland	627
Julien Loiseau, Simon Dorso, Hiluf Berhe, Deresse Ayenachew, Am��lie Chekroun, Bertrand Hirsch To whom do the dead belong? Preliminary observations on the cemetery of Tsomar, eastern Tigray (<i>Inscriptiones Arabicae Aethiopiae</i> 2)	647

New evidence of long-distance trade in Somaliland in Antiquity

Imported materials from the 2018-2019 field seasons at Xiis (Heis), 1st to 3rd centuries AD

Adolfo Fernández Fernández

University of Vigo

Alfredo González-Ruibal

Spanish National Research Council, Institute of Heritage Sciences, Incipit-CSIC

Jorge de Torres

Spanish National Research Council, Institute of Heritage Sciences, Incipit-CSIC

The coast of Somaliland was the scenario of intense interactions between merchants and local pastoralists in Antiquity, as part of the Indian Ocean trade pattern. The site of Heis (Xiis in Somali) is a large necropolis, consisting of hundreds of cairns, on the coast of eastern Somaliland. It is known since the late 19th century for its remarkable evidence of trade with the Roman Empire, but it has not been the object of systematic research until 2017. In this chapter, we present new data from surveys and excavations conducted during two field seasons, focusing on imported materials (pottery and glass), mainly from the Roman and Parthian empires and South Arabia, between the 1st and 3rd centuries AD. Imported materials represent 99% of all artefacts documented in survey and excavation. This research is part of an ongoing project on long-distance trade in Somaliland.

La côte du Somaliland fut le lieu d'interactions intenses entre les marchands et les pasteurs locaux durant l'Antiquité, dans le cadre du développement du commerce dans l'océan Indien. Le site de Heis (Xiis en somali) abrite une vaste nécropole, constituée de centaines de cairns, sur la côte du Somaliland oriental. Il est connu depuis la fin du XIX^e siècle pour ses vestiges remarquables qui matérialisent l'intensité des échanges avec l'Empire romain. Mais il n'avait pas fait l'objet de recherches systématiques avant 2017. Dans cet article, nous présentons des données nouvelles provenant de prospections et de fouilles menées pendant deux saisons de terrain, en nous concentrant sur le matériel importé (céramique et verre), en provenance notamment des empires romain et parthe et d'Arabie du Sud, et daté du I^{er} et du III^e siècles ap. J.-C. Les importations représentent 99 % de tous les objets documentés lors des prospections et des fouilles. Cette recherche s'inscrit dans le cadre d'un projet en cours sur le commerce à longue distance au Somaliland.

The authors would like to thank Roberta Tomber and Vittoria Buffa for their help in identifying some of the materials. We are also grateful to Carl Phillips for sharing the unpublished report of his survey of Xiis. Two anonymous reviewers provided valuable comments that have improved the text. Needless to say, all errors remain our own. Fieldwork was carried out by Jorge de Torres, Manuel Antonio Franco Fernández, Candela Martínez Barrio and Ahmed Jama Dualeh. The Department of Archaeology of the Ministry of Trade, Industry and Tourism of Somaliland provided institutional and logistical support. Funding for the project has been provided by the Ministry of Science and Innovation (PGC2018-099932-B-I00) and the Palarq Foundation.

Introduction

The study of the Indian Ocean trade in Antiquity has increased noticeably during the last few years in most regions involved in the system, from Egypt to India.¹ In comparison with other areas, the coasts of the Horn of Africa have received little attention, with the exception of the ancient port of Adulis, in Eritrea.² The Horn, however, figures prominently in the *Periplus of the Erythraean Sea*, written during the 1st century AD; several ports are mentioned along the coasts of Eritrea, Somaliland and Somalia. Previous archaeological research has revealed the great potential of the Somali coast for exploring commercial relations between African communities and the Roman and Parthian empires. Excavations in Ras Hafun, south of Cape Guardafui in the Puntland region of Somalia, revealed two important sites with a rich assemblage of imported pottery from the first half of the 1st millennium AD: Hafun West is dated to the 1st century BC-3rd century AD and Hafun Main from the 2nd to the 5th centuries AD.³ The materials came from the Roman Empire, the Gulf and South Asia. Also in Puntland, another site with Roman materials was discovered in Daamo.⁴ In Somaliland, the presence of Roman merchants is known since the late 19th century, when French explorer Georges Révoil discovered an assemblage of Roman glass and pottery in the cairns of Heis, a locality currently known in Somali as Xiis.⁵ The site was visited by Neville Chittick in 1976, who found Roman glass “of about the 4th century AD” in a small robbed cairn, and potsherds on the surface of the site that he dated between the 2nd and 5th centuries AD.⁶ G. Révoil’s glass finds were studied in 1986 and the entire collection was the subject of a monograph in 1993,⁷ but nobody did fieldwork at the site again until 2017-2018, when two surveys were conducted independently. One of them was carried out by Carl Phillips on behalf of a construction company aiming to build a new road leading to a future harbour.⁸ The other survey was conducted by our team, as part of a long-term project on long-distance trade in Somaliland, from the 1st to the 20th centuries AD.⁹ Fieldwork continued in 2019, during which we carried out excavations in four cairns,¹⁰ but was interrupted in 2020, due to tropical storm Pawan destroying the road leading to Xiis. At the moment of writing, plans are underway to resume work in 2021. The main aim of this chapter is to present the imported materials documented during recent archaeological work at the site. We will focus on our finds from the 2018 and 2019 field seasons, and will use G. Révoil’s and C. Phillips’ materials for comparison.

The site of Heis (Xiis)

The site, or rather sites, of Xiis are located on the coast of the Sanaag region, eastern Somaliland. For its location, topography and archaeological finds, Xiis has been traditionally identified with one of the “far-side ports” of the *Periplus of the Erythraean Sea*, either Mundu or Mosyllon. Most authors tend to agree that the best match would be Mundu, as the *Periplus* describes an island close to the

1. Tomber 2008; Seland 2014; Gurukkal 2016; Cobb 2018; Darley 2019.

2. Zazzaro 2013; Zazzaro, Cocca, Manzo 2014.

3. Smith, Wright 1988.

4. Chittick 1976, pp. 123-124; Chittick 1979, p. 275.

5. Révoil 1882.

6. Chittick 1979, p. 274.

7. Stern 1987; Desanges, Stern, Ballet 1993.

8. Phillips 2018.

9. González-Ruibal et al. 2017.

10. Torres et al. 2019.

coast, identical to the one existing in Xiis:¹¹ the rocky isle lies less than 200 meters off the shore. The text referring to Mundu in the *Periplus* is the following:

From Málao [Berbera] it is two runs to the port of trade of Mundu, where vessels moor fairly safely at the island that lies very near the shore. This place offers a market for the aforementioned and, similarly, from it is exported the aforementioned merchandise [myrrh, frankincense, cassia, and slaves] plus the incense called *mokrotou*. The traders who live here are rather hard bargainers.¹²

The main site is a large necropolis consisting in over 300 cairns of different shapes and dimensions and extending for 1,800 meters along the coast, between the aforementioned isle and the mouth of the wadi El Usbale (*fig. 1*). The greatest concentration of tombs lies in an area of around 800x250 meters extending between the coast and a rocky plateau 145 meters above the mean sea level and known as Ma'ajilayn. On the plateau itself, there is a second site, where a diversity of imported materials has been found, including Roman amphorae and South Arabian containers, but no structures. Some amphorae were already collected here by G. Révoil.¹³ There is a third site, located in the rocky isle mentioned above. The isle is very steep and only a small, flatter area to the south could have been used for habitation. Here, a rectangular platform of 15 meters made of coral stones was documented and two groups of stone terraces nearby, perhaps to adapt the terrain for setting up huts or tents. The place yielded plain, wheel-made and handmade pottery and amphora, but very little in the way of fine wares (two fragments of turquoise-glazed pottery) or glass (one pushed-up base in green glass). This is the only site that seems to have been visited in medieval and post-medieval times, as proved by some pottery sherds and a medieval or post-medieval polychrome glass bangle.

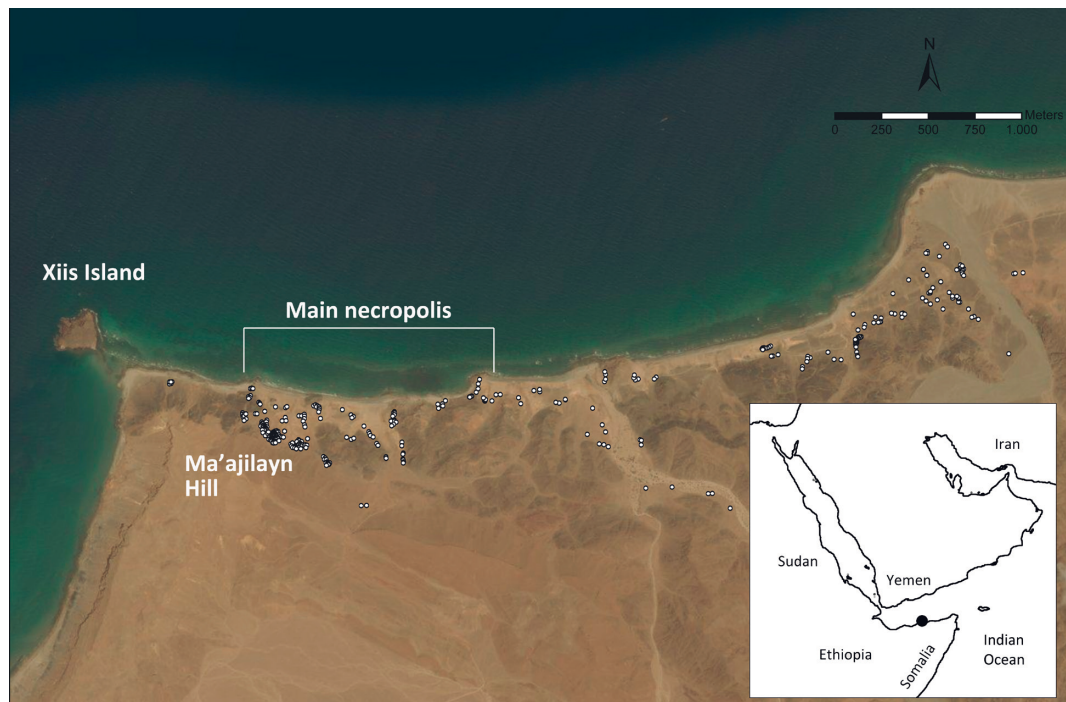


Fig. 1 – Satellite image of Xiis showing cairns documented during surveys in 2018-2019 (Bing Maps).

11. Chittick 1979, p. 274; Seland 2010, p. 40; *Periplus Maris Erythraei*, § 9, 4, 1.
12. *Periplus*, § 9 (ed. and transl. Casson 1989, p. 57).
13. Desanges 1992, p. 100.

We conducted a systematic survey of the necropolis, in which we numbered, georeferenced and documented each cairn individually and recorded all surface finds in their surroundings. The entire necropolis was mapped using a drone and total station. Imported materials were found in association with 80 cairns, Parthian turquoise or green glazed ware being the most common find (46 of the tombs), followed by glass (N=25), amphorae (N=19) and undecorated wheel-made wares (N=15). Seven cairns yielded stone or glass beads. The rest of the site was quite devoid of materials, except from the south-central area, at the feet of Ma'ajilayn hill, where we recorded an artefact scatter with Egyptian fine ware, Roman amphorae, *millefiori* shards, and glass inlays.¹⁴ In 2019, four tombs were also excavated, two intact, one partially looted and one that had been completely looted. One of the intact tombs and the one that had been partially looted yielded no funerary goods whatsoever, only the remains of one individual each, whereas in the other intact grave we found a skeleton of a pre-adult individual with a large Roman glass bottle dated to the 3rd century AD, iron anklets and a necklace with glass and bronze beads. While we have been unable to infer the biological sex based on the osteological remains, the artefacts to which the skeleton are associated have been traditionally linked in the Horn to female individuals. Attempts to date the bones of the tombs with no associated materials were unsuccessful as none of the bones had any collagen left and their chronology remains uncertain. The looted tomb, which has been described in detail elsewhere,¹⁵ yielded a rich assemblage of artefacts from the 1st century AD, including *millefiori* glass, a Roman ribbed glass bowl, Parthian glazed pottery, terra sigillata, Egyptian fine ware, and decorated glass inlays that were part of a box (see below).

The imported materials

The collection of imported wares and glass described here comes mainly from the 2018 survey, as the finds from 2019 are still under study, so we will provide only some general comments on this latter material. The finds from 2018 come from two areas: the central sector of the necropolis and Ma'ajilayn hill. As a complement to our research, we have the materials collected by C. Phillips,¹⁶ which confirm our own data and observations. The items collected by G. Révoil, mostly glass, will be mentioned for reference. Imported materials make the immense majority of our finds. In the necropolis, we have only found a sherd of undiagnostic handmade pottery that seems to have been produced in the region. In the island, there were six sherds of handmade pottery, grey-black inside and brown-red outside, with abundant granitic temper. This represents less than 1% of the entire documented assemblage.

Amphorae

Amphorae are one of the most common imported elements in Xiis, despite their scant representation in the material gathered by G. Révoil. Both our survey and C. Phillips' delivered an important number of them.¹⁷ The most common types are Italian Dressel 2-4, mostly from Campania, with characteristic "black sand fabric" (*fig. 2: 1, 8*), but there are also other kinds of containers with slightly different fabrics, also with volcanic sand (*fig. 2: 3, 10*) and other Italian productions with coarse igneous rock

14. Torres et al. 2019, p. 31.

15. Torres et al. 2019.

16. Phillips 2018.

17. Phillips 2018.

inclusions (*fig. 2: 7*). Within the Dressel 2-4 family, we have an individual of probable Cilician origin (*fig. 2: 2*) and a rim (*fig. 2: 4*) with fabric containing quartz, mica, some limestone and a little iron oxide compatible with the Rhodian 1 fabric of Aegean Dressel 2-4.¹⁸ We have been unable to see C. Phillips' materials, but his descriptions lead us to believe that there is also a variety of provenances, including Aegean and Cilician examples.

Gaulish amphorae are represented by a rim and a handle, possibly of the Gauloise 4 type (*fig. 2: 5, 9*) with its typical calcareous fabric and whose production is to be located in southern Gaul, between Languedoc and Provence.¹⁹ Lastly, there is an important volume of undiagnostic Egyptian amphorae, whose presence in the site is corroborated by a rim of the type AE 3-1.5 (*fig. 2: 6*).²⁰ G. Révoil also recovered several fragments of amphorae,²¹ including a Campanian Dressel 2-4.²² The amphorae documented by C. Phillips in his 2017 survey coincide with ours; in his collection, Italian (mainly Campanian) amphorae prevail, along with undetermined productions of Dressel 2-4, Rhodian and

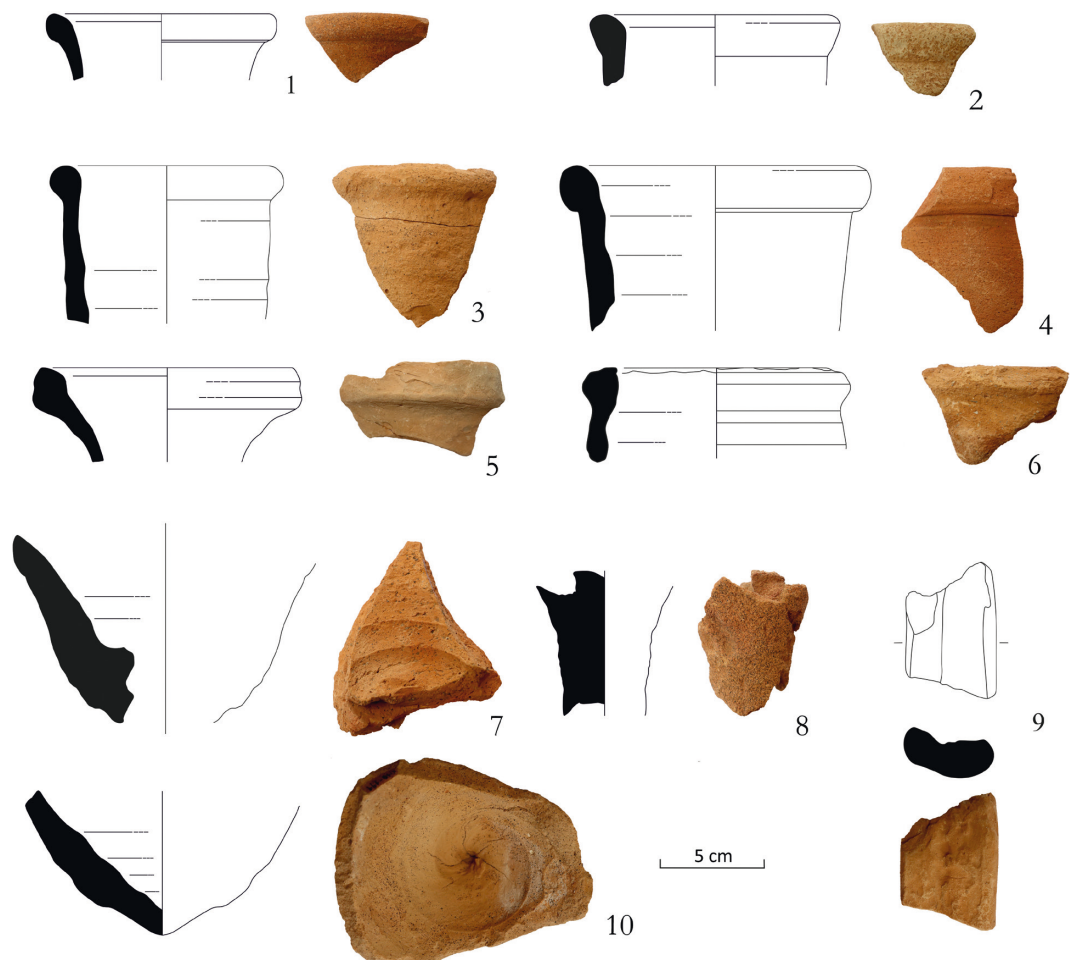


Fig. 2 – Roman amphorae found during the survey of Xiis (A. Fernández Fernández).

18. Peacock, Williams 1986, Class 9.

19. Laubenheimer 1985.

20. Dixneuf 2011, fig. 90.

21. Desanges 1992, p. 100.

22. Ballet 1993.

Gaulish amphorae.²³ The only novelty is a massive conical base of Agora M54 type,²⁴ which he documented in Ma'ajilayn.

A remarkable document is an amphora sherd with a Greek graffito in which some letters can be made out: A, Y, N. The ostrakon was made with an Aegean amphora, perhaps a Koan or Rhodian one (*fig. 3*).

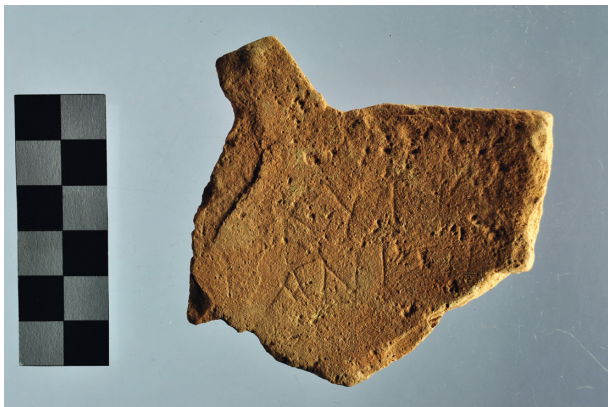


Fig. 3 – Greek graffito in a Roman amphora found during the survey of Xiis (C. Martínez Barrio).

Terra sigillata

Several sherds from the same vessel of Italian terra sigillata were found in the south-central cairn zone. The vessel (part of a small hemispheric bowl) could belong to the *Conspectus* 34.1 type, like the two pieces from the Révoil collection (*fig. 4*: 1-2),²⁵ which were also recovered in the area of the necropolis.²⁶ Maurice Picon believed that these pieces may come from Arezzo and our fragments have indeed a fabric compatible with those workshops. Another type of sigillata than has been documented is Eastern Sigillata A (ES A) from the area of Antioch (Syria). A base of a vessel was discovered during the 2018 survey at the feet of the Ma'ajilayn hill (*fig. 4*: 1-3) and two other fragments were found by G. Révoil in the necropolis.²⁷ The excavation of Tomb 153 in 2019 yielded fragments belonging to two different bowls of Italian sigillata.

Egyptian fine red slip wares

Fragments from at least two bowls with red polished surfaces (*fig. 4*: 4) were found in the necropolis, one of them in a looted grave (Tomb 153). We initially mistook them for Indian red polished ware.²⁸ The pottery has micaceous fabric with abundant inclusions of very small size, some opaque quartz and a high amount of small black inclusions. The walls are coated with burnished red to brown slip. Wheel marks are visible on the surface. Both the base and the surface treatment are compatible with an origin in an Egyptian workshop on the Nile.²⁹ Similar dishes and bowls have been found in Hafun

23. Phillips 2018.

24. For the general definition of the type: https://archaeologydataservice.ac.uk/archives/view/amphora_ahrb_2005/details.cfm?id=10.

25. Ballet 1993, p. 64.

26. Desanges 1992, p. 100.

27. Ballet 1993, pp. 64-65.

28. Torres et al. 2019, pp. 31-32.

29. David et al. 2016.

West³⁰ in Puntland, as well as in several Red Sea sites, such as Coptos and Myos Hormos,³¹ dated to the 1st century AD. However, although the Egyptian origin is beyond doubt, the vessels from Xiis are of fine and very well levigated fabric, with no vegetal temper, unlike the pieces from Hafun,³² which likely come from another workshop on the Nile.³³

Plain and cooking wares

Common and cooking pottery is also present in Xiis, although in lesser quantities than amphorae and glazed wares. Within the cooking wares, there are some bowls with polished, red-slipped interior (fig. 4: 6) and burnt traces on the outer surface. The fabric is coarse and has fine muscovite, a little of biotite, some dark mineral inclusions and shells. The presence of slip and the grey core, typical of irregular firing, makes it similar to the productions of the Nile Valley, although shells are uncommon there. Other possibilities should not be ruled out, such as the Persian Gulf, where a shell-tempered production has been documented in imitation of Indian wares.³⁴ A more certain Egyptian origin can be

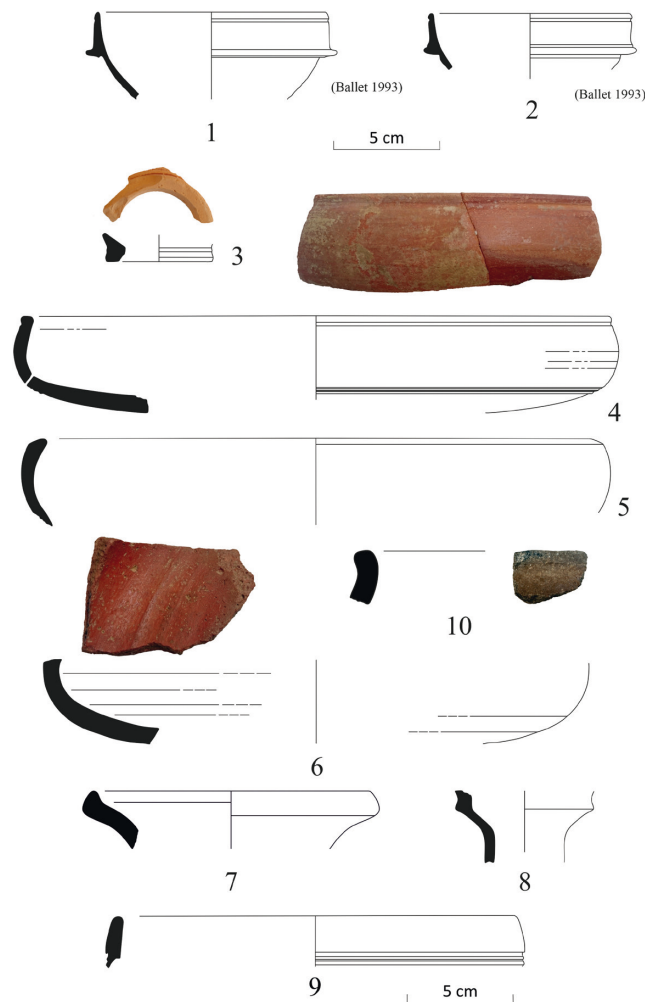


Fig. 4 – Terra sigillata and Egyptian wares found during the survey of Xiis (A. Fernández Fernández).

30. Smith, Wright 1988, p. 120.

31. Peacock, Blue 2011.

32. Smith, Wright 1988, p. 120.

33. David et al. 2016, p. 12. See also Ballet et al. 1991.

34. Reddy 2015.

assigned to another red-slipped bowl (*fig. 4: 5*). The alluvial, micaceous fabric, with microfossils and a grey core are typical of the fine cooking wares of the Theban region.³⁵ We also have two jugs or bottles with alluvial fabric, typical of Egyptian productions (*fig. 4: 7-8*). This kind of vessels travelled along the Red Sea from production centres on the Nile, as evinced by their presence in Ras Hafun³⁶ and Kanē, in Yemen.³⁷ Also from Egypt come several fragments that may be identified as kegs (*sigā* in Arabic), cylindrical containers with thin walls, red fabric and grey surfaces. These vessels have been documented in the Kharga Oasis from the Ptolemaic period onwards³⁸ and are common in contexts dated as late as the early 2nd millennium AD along the Hadramawt coast,³⁹ but their production and export has been documented. It would not be strange to find it in Xiis. We have been unable to find parallels for a wheel-made pot with fabric similar to Cilician productions and yellow slip, but we cannot rule out other possible sources, except Aegean, which it is clearly not (*fig. 4: 9*). Finally, there is a fragment from a local/regional, handmade cooking pot (*fig. 4: 10*), with granitic temper (quartz, mica and feldspar) and dark fabric. We have found this kind of pottery in indigenous contexts from the 1st millennium AD to the 13th century in the Berbera region.

Glazed ware

Mesopotamian glazed ware is very abundant in Xiis, with over a hundred sherds documented so far; during the 2019 survey, 46 cairns delivered this kind of pottery, with a proportion of 1 green to 4 turquoise/blue sherds. In the surveys of 2017 and 2018, however, the ratio was the reverse. The difference in colour is in all likelihood original and not the result of degradation. The same cannot be said of a few beige-glazed sherds that might have been either green or turquoise originally. Finds of glazed wares came mostly from artefact scatters not directly associated with specific tombs. The fabrics of green and turquoise or blue-glazed wares are very similar (*fig. 5*). Perhaps the latter have slightly fine fabrics than the green, although this might be due to an intentional selection of the clay depending on the vessel. Generally speaking, their fabrics are yellow or light brown and sandy with large quantities of very fine mineral temper (mainly quartz and small red inclusions). The origin has to be found in southern Iraq, in the region of Basra.⁴⁰ The pieces of Xiis could be the Parthian forebears of TURQ.4 (green) and TURQ.5 (blue) proposed by Derek Kennet from the medieval contexts of early medieval Ras-al-Khaimah.⁴¹ The shapes documented at Xiis are limited to middle-sized jugs or bottles represented by diagnostic fragments of rims, handles, necks and bases (*fig. 6: 1-7*). In fewer quantities, we have also documented bowls (*fig. 6: 8-9*). The most remarkable element in the assemblage is a green-glazed ovoid vessel with high footing (*fig. 6: 10*) of which we found 23 sherds. The fabric is different from the rest of the pieces from the assemblage, because alongside fine quartz sand, it has vegetal inclusions (straw), like the South Arabian ovoid jars. A similar base was documented in the necropolis in the 2017 survey. A good parallel was excavated in Berenike.⁴² In our case, the glaze covers both the interior and the exterior of the piece in an irregular way, but the original green colour can still be seen. Imports of glazed ware are common in the ports of the Gulf of Oman and the Red Sea and are present from Hellenistic to early medieval contexts.⁴³

35. David et al. 2016, pp. 11-12.

36. Smith, Wright 1988, fig. 4f.

37. Davidde, Petriaggi, Williams 2004, p. 109, fig. 8.

38. Rougeulle, Marchand 2011, p. 444; David et al. 2016, p. 16.

39. Rougeulle, Marchand 2011.

40. Kennet 2004, p. 30.

41. Kennet 2004, p. 29.

42. Tomber 2008, p. 52.

43. Kennet 2004, p. 30.

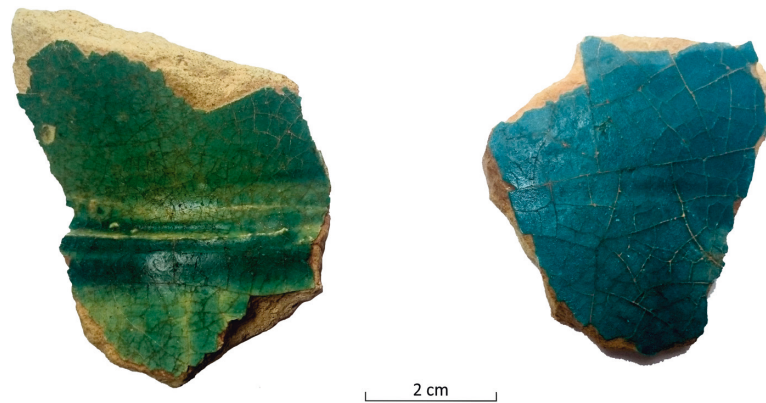


Fig. 5 – Green and blue-glazed sherds found during the survey of Xiis (C. Martínez Barrio).

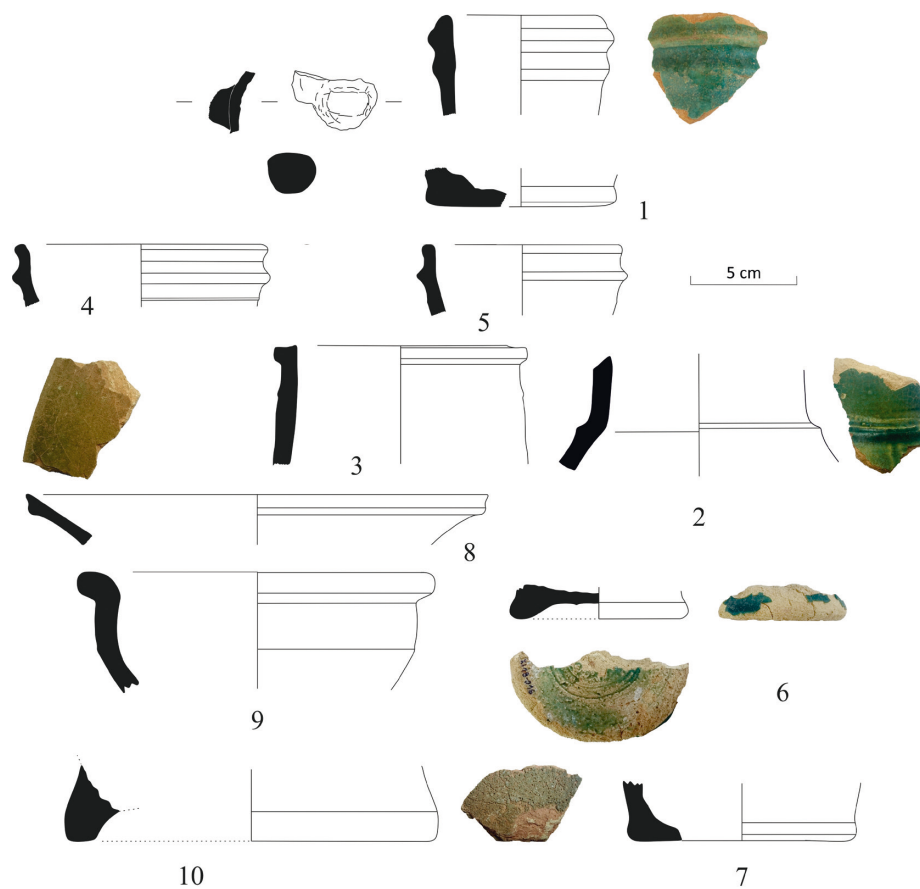


Fig. 6 - Mesopotamian glazed ware found during the survey of Xiis (A. Fernández Fernández).

South Arabian storage jars

An important quantity of South Arabian organic storage jars have been found.⁴⁴ These elongated, ovoid containers are very common throughout the Red Sea, the Arabian coast and India, where they have been recently detected in Pattanam.⁴⁵ Different kinds of fabrics have been described, belonging

44. Tomber 2008, p. 51.

45. Buffa 2014; Buffa 2015.

to different production areas, all of them probably in South Arabia⁴⁶ and sharing straw as the main type of temper. The two most common fabrics, based on data from the coastal sites of Kanē (Yemen) and Sumhram (Oman) are light red – compact, pinkish and with lighter colour outside –⁴⁷ and yellow-greenish, which is more porous than the other.⁴⁸ In Xiis we have identified several individuals with these fabrics; light red (*fig. 7: 1-2*) being more common than yellow-greenish, of which we only have two individuals. We have also recovered organic storage jars of two other types. One of them is beige and has a very porous, micaceous fabric, with abundant straw (*fig. 7: 3-5*), probably a variant of the yellow fabric, but more micaceous. This type of fabric probably comes from South Arabia as well and it has been documented (marginally in comparison with more common fabrics) in Sumhram, Pattanam and Kanē.⁴⁹ Two high footings have also been documented in a totally different fabric, with inclusions of igneous rock alongside the typical organic temper (*fig. 7: 6-7*). This temper has not been documented, as far as we can tell, in other sites of the Red Sea. Based on the morphology of the bases, it seems that the vessels were also elongated and ovoid. The presence of igneous temper

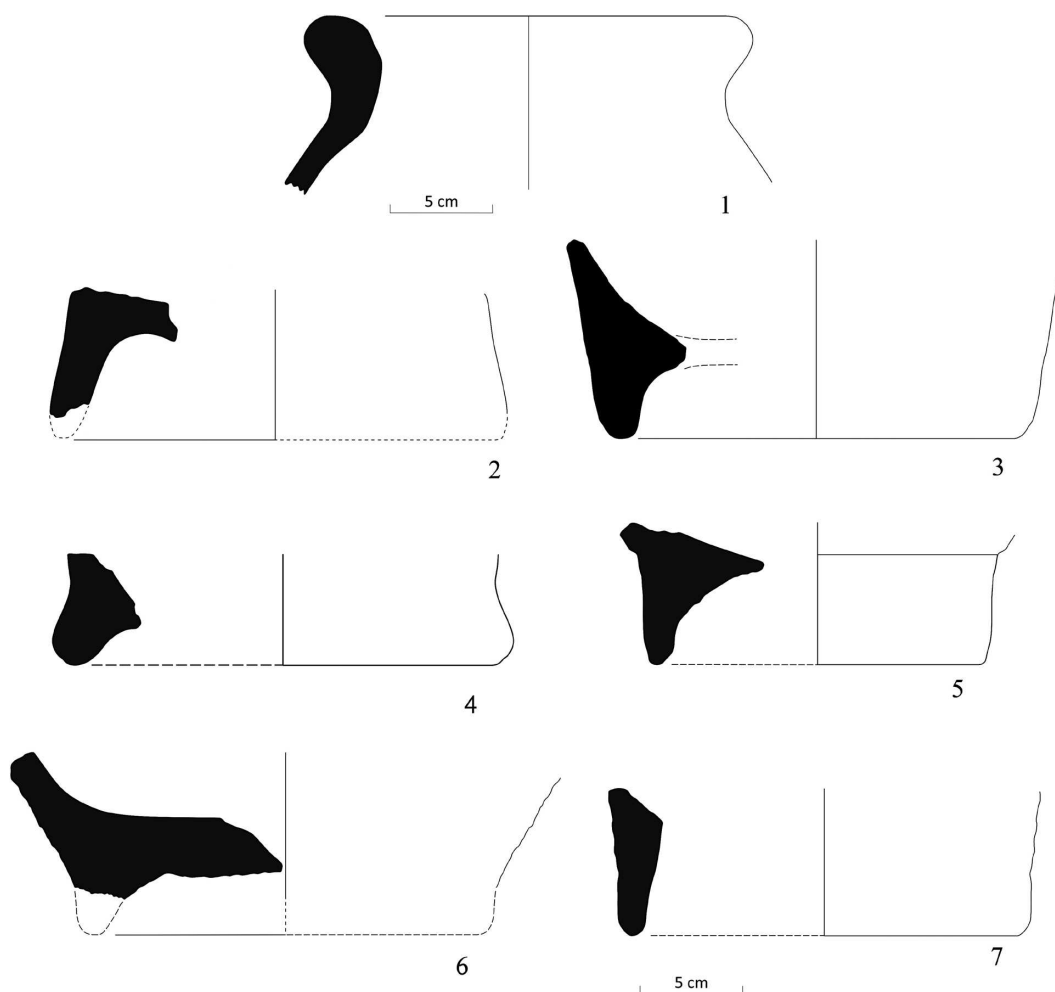


Fig. 7 – Organic storage jars from South Arabia found during the survey of Xiis (A. Fernández Fernández).

46. Buffa 2015.

47. Buffa 2014; Buffa 2015.

48. Buffa 2015, p. 55.

49. Dr Vittoria Buffa (Sumhram and Pattanam) and Prof. Alexander Sedov (Kanē), pers. comm.

may indicate an origin in southern Yemen or Oman, where basalt deposits are common.⁵⁰ The only rim that we have been able to locate (*fig. 7: 1*) is of the light red type and probably Variant A of the typology proposed by Vittoria Buffa.⁵¹

Alabaster vessel

A small fragment of a rim from a white alabaster vessel was found, which is the second to be found in Xiis (*fig. 8: 1*). G. Révoil collected the base of an amphora-shaped *unguentarium*.⁵² The rim diameter (ca 8 cm) of our piece, however, indicates that it does not belong to this kind of vessel. In any case, the thin walls and the everted rim (forming a mushroom-shaped mouth) suggest that it was probably also a perfume container, of larger size and globular shape. It likely came from Egypt, where the majority of alabaster workshops are found, although another origin cannot be completely ruled out.

Glass

Glass is very abundant at Xiis, particularly in the necropolis, where it was part of the funerary offerings of the tombs. Glass was found in the surveys of 2018 and 2019, but also during excavations of the latter field season and therefore in context. Glass makes the greater part of the Révoil collection.⁵³ Its provenance is the workshops of Alexandria, which exported it throughout the eastern Mediterranean and the Red Sea. It was transported first by river to Coptos, then overland to Myos Hormos (or Berenike) and finally by sea toward sub-Saharan Africa, Arabia and India.⁵⁴ However, other origins in the Mediterranean are also possible, including Rome itself, or even in the Red Sea: the *Periplus* mentions Muza as a place of production of polychrome glass.⁵⁵ We can divide the assemblage into three groups: monochrome and mosaic vessels; inlays, plaques and tiles; and glass beads. The assemblage is extremely similar to G. Révoil's, as all these groups are present in his collection.⁵⁶

Monochrome and mosaic vessels

Several glass vessels have been found during survey and excavation. The most remarkable piece is a complete flagon with ribbed handle in green glass (*fig. 8: 2*) coming from Tomb 120 and associated, as mentioned above, to the remains of a pre-adult individual. Glass bottles have been found in Early Roman contexts in Egypt, like Myos Hormos,⁵⁷ but quadrangular shapes are much more common.⁵⁸ An identical parallel, however, comes from the Royal Ontario Museum. John W. Hayes proposes a chronology of the 3rd century AD and an origin in Syria or Cyprus.⁵⁹ Apart from the complete piece,

50. Tomber 2008, pp. 50-51.

51. Buffa 2015, p. 49.

52. Ballet 1993, pp. 69-71.

53. Stern 1987; Stern 1993.

54. Meyer 1992.

55. *Periplus*, § 16, 6, 10-13.

56. Stern 1993.

57. Peacock 2011, p. 70.

58. Meyer 1992, pp. 31-32.

59. Hayes 1975, p. 61, no. 160.

the neck of another, smaller one was found, also in green colour (*fig. 8: 4*) and comparable to a vessel recovered by G. Révoil.⁶⁰

Open monochrome vessels include a pillar moulded bowl in translucent blue-green glass (*fig. 8: 3*), similar to one recovered by G. Révoil.⁶¹ This is doubtless the most popular of the glass vessels in the Red Sea during the first half of the 1st century AD.⁶² It has been documented in the Omani coast, in Khor Rori,⁶³ and as far away as Afghanistan and India.⁶⁴



Fig. 8 – Glass and alabaster found during the survey of Xiis (A. Fernández Fernández).

60. Stern 1993, p. 56.

61. Stern 1993, pp. 52-53.

62. Meyer 1992, p. 17; Peacock 2011, pp. 61-63.

63. Lombardi, Buffa, Pavan 2008, pp. 404-407.

64. Meyer 1992, pp. 17-19.

During the survey of the necropolis, a bowl in olive green glass was found with a flagon-like glass appliqué (*fig. 8: 5*), the rim of a jug in green glass (*fig. 8: 6*), with parallels in Myos Hormos,⁶⁵ a plain base in blue glass, probably from a bottle (*fig. 8: 7*), and a base with kick-up and rolled ring footing in clear glass (*fig. 8: 8*). All these vessels can be generally dated during the 1st century AD, particularly in the first half. The dating was already suggested for the materials from the Révoil collection by E. Marianne Stern,⁶⁶ who also noted that some pieces had a later chronology (2nd century AD).

Finally, the necropolis also yielded some shards of mosaic glass. These include several fragments from an *unguentarium* in dark blue opaque glass with trailed on marvered yellow threads (*fig. 8: 9*) and several fragments of *millefiori* (*fig. 8: 10-11*) with good parallels in the Révoil collection⁶⁷ and other Red Sea sites, such as Myos Hormos.⁶⁸ The *unguentarium*, with marvered and dragged decoration, has to be dated at the beginning of the 1st century AD, as it is a typically Hellenistic decoration that disappears during that century.⁶⁹

Inlays and tiles

Also, very common in Xiis, and always in association with tombs, are the inlays, plaques and tiles in glass, which were embedded in other objects, probably wooden boxes. This kind of inlays represents an important part of the materials gathered by G. Révoil, many of which are identical to those retrieved by us in 2018 and 2019. The most important lot comes from Tomb 153, which includes several fragments decorated with a classical palmette and acanthus chain (*fig. 8: 14-16*), two opaque white strips (*fig. 8: 20-21*), an inlay of glossy opaque red glass (*fig. 8: 19*) and two polychrome inlays – red and black (*fig. 8: 17-18*). From this same grave come two fragments of glass tile, one of them decorated with serpentine patterns in opaque glass (*fig. 8: 13*) and another one with wheel rosettes (*fig. 8: 12*). The best parallels for these pieces outside Somaliland come from the royal tombs of Meroe, where identical inlays have been found in contexts dated to the mid-1st century AD, a chronology that is consistent with the rest of the glass assemblage.⁷⁰ The same chronology can be assigned to the fragment of pillar moulded bowl from the same tomb. Both inlays and tiles recovered during our fieldwork have direct parallels in the Révoil collection,⁷¹ where the over-representation of glass confirms that the materials came from tombs.

Glass and faience beads

A necklace containing several faience beads, probably from Egypt, was found in Tomb 120. Elsewhere in North-East Africa, this kind of beads has been found in funerary contexts, as in the Nubian necropolis of Sedeinga.⁷² There are different types: the most common are melon-shaped, like those from Tomb 120, disc-shaped and cylindrical like those found in the 2018 survey. Less common are glass beads in different colours and shapes, such as the yellow and green melon-shaped beads from Cairn 58 and the blue one from the necklace of Tomb 120 (*fig. 9*). Some of these beads are akin to so-called Indo-Pacific models.

65. Peacock 2011, pp. 70-74.

66. Stern 1993, p. 22.

67. Stern 1993.

68. Peacock 2011, p. 62.

69. Meyer 1992, pp. 34-35.

70. Torres et al. 2019, p. 34.

71. Stern 1987; Stern 1993.

72. Then-Obluska 2015.

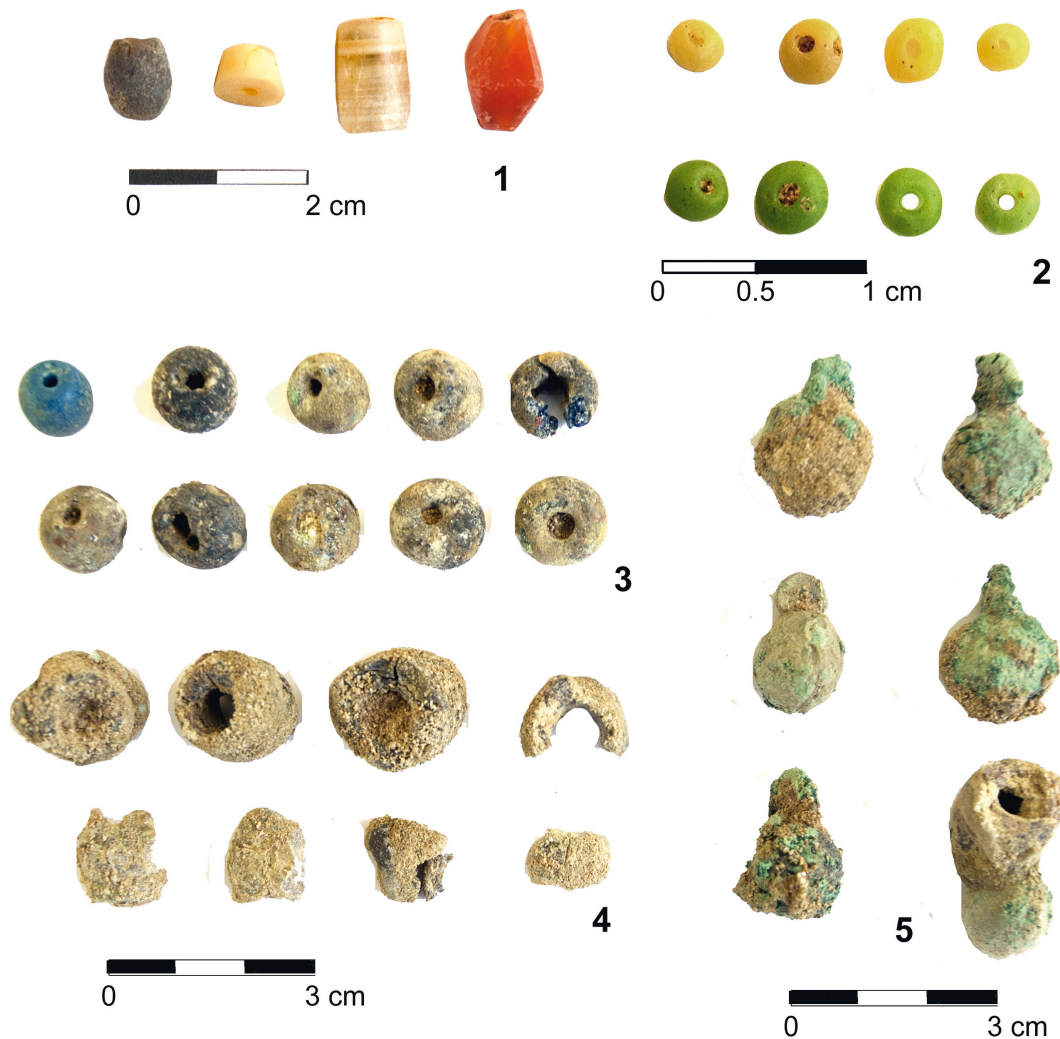


Fig. 9 – 1: stone beads, including carnelian and agate, from Cairn 14, survey; 2: glass beads from Cairn 58, survey; 3-5: faience and copper beads from Tomb 120, excavation (A. Fernández Fernández).

Other beads

Non-glass beads have also been found at Xiis, including the bronze beads from the necklace of Tomb 120, which appeared in combination with faience and stone beads. Carnelian and agate beads are among the most typical and widespread elements in Indo-Roman trade. Although they are traditionally believed to come from India, Egyptian products have also been detected.⁷³ Whatever their origin, carnelian beads are present in virtually all sites along the Red Sea. In Xiis we have some barrel and globular-shaped examples and one with truncated-cone shape found in Tomb 14, along with two cylindrical agate beads. Beads made of shells have also been attested, although they are not as common in Xiis as in other necropolises of North-East Africa.⁷⁴ Mollusk shell beads associated with tombs have been found in both the 2018 and 2019 surveys. None exists in the Révoil collection, probably because they were not deemed worth keeping.

73. Francis 2007.

74. Then-Obluska 2015, pp. 29-32.

Discussion

Materials from fieldwork in Xiis between 2017 and 2019 provide a chronology situated between the early 1st century and the 3rd century AD. Campanian Dressel 2-4 amphorae with black sand fabric should be dated mainly during the 1st century AD.⁷⁵ The Egyptian AE 3-1.5 is dated to the 2nd century AD and could attain the 3rd.⁷⁶ The remaining Italian Dressel 2-4, the Cilician and Rhodian amphorae and the Gaulish 4 can be dated between the end of the 1st century BC and the 3rd century AD. Similar assemblages, with a comparable chronology, have been found in the Red Sea region, including Myos Hormos, Berenike, Kanē, Sumhuram and Ras Hafun. The Italian terra sigillata has a 1st century AD chronology. The three Cons. 34.1 cups retrieved by G. Révoil are dated between the reigns of Tiberius and Claudius,⁷⁷ that is, during the first half of the 1st century AD. As for the Egyptian plain and red-slipped wares, they have been found in contexts of the 1st-2nd centuries AD, such as Hafun, Coptos and Myos Hormos.⁷⁸ Other materials providing dates are the organic storage jars, whose chronology has been established between the 2nd century BC and the 4th-5th centuries AD.⁷⁹ Nevertheless, the excavations of Kanē and Sumhuram have offered a more precise chronology, with the light red fabric dated to the second half of the 1st century BC to late 1st century AD and the yellow-green fabric during the 2nd-5th centuries AD, although both can appear in small proportions in other periods.⁸⁰ Both types are present in Xiis, but the former is much more common, again corroborating the 1st century AD as the apex in long-distance trade at the site.

Finally, both the glass from the Révoil collection and from our own fieldwork can be dated between the 1st and 3rd centuries AD, with the earlier materials being far more common. Thus, pillar moulded bowls are very common from the 1st century BC to the late 1st century AD and a similar chronology is furnished by the abundant glass inlays. The cylindrical bottle from Tomb 120, instead, is best dated around the 3rd century AD, which evinces the continuation of trade in Xiis at a later date. Instead, there is a total absence of materials dated from the 4th century onwards, meaning that, unless other evidence is retrieved in new excavations of intact tombs, long-distance trade in Xiis came to an end at some point around the 3rd century AD. This is similar to the situation in Myos Hormos, but different from most other Red Sea ports, such as Berenike, Kanē or Adulis,⁸¹ which continue active until the 7th century. The lack of infrastructure or permanent settlement associated with the ports of the Somali coast may explain that they shifted easily, a situation that we have documented for the Middle Ages. The absence of Axumite materials may be also related to the end of Xiis around the 3rd century AD, as the involvement of Axum in the Red Sea increased from the 3rd century onwards.

The fact that the assemblage of Xiis is similar to other Red Sea sites that were active during the first phase of the Indo-Roman trade⁸² is proof of the strong integration of Somaliland in the system and the participation of its communities in transregional consumption trends. This includes the use of wine, which plays an important role in long-distance trade not only in the Mediterranean, but also in South Arabia and Mesopotamia, as evinced by the abundance of amphorae. Containers produced in South Arabia (such as the organic storage jars) and Mesopotamia (like one of our glazed jars) may have also been used to transport wine; Muza, according to the *Periplus*, produced “wheat in

75. Williams, Peacock 2005.

76. Dixneuf 2011, p. 109.

77. Ettlinger et al. 1990.

78. Smith, Wright 1988, p. 120.

79. Tomber 2008, p. 50.

80. Buffa 2015, pp. 55-56.

81. Sidebotham 2011; Zazzaro 2013; Zazzaro, Cocca, Manzo 2014.

82. Tomber 2008.

moderate quantity and wine in greater⁸³ and some of the storage jars have traces of bitumen. At the same time, there are some dissonances with other Red Sea sites. Although contacts with India are attested through carnelian and agate beads, whose most likely provenance is South Asia, we have been unable to find Indian pottery so far, which is common in other Red Sea sites, including Hafun in Somalia and Kanē and Sumhuran in South Arabia. This is perhaps related to the fact that most of our finds come from a necropolis.

Our fieldwork has also enabled a better understanding of the spatial organization of the site of Xiis. Glass, glazed wares and fine pottery are in most cases associated with tombs, which means that they were part of the funerary offerings; this was certainly the case in two of the graves that we excavated, with glass in situ (Tomb 153 and Tomb 120). In Ma'ajilayn hill the finds are less diverse; there are many South Arabian organic storage jars and cooking pottery, but few glazed wares and no other fine wares or glass was recorded. The hilltop was probably a temporary settlement area, perhaps the place where the indigenous people awaited the arrival of the foreign merchants. The extraordinary visibility from the hill would support this interpretation. The nomads would live there during the period in which they resided near the coast. As for the island, there is some handmade pottery and plain wheel-made wares, but few amphorae or fine wares, which means that the place was not used for unloading goods. It might have been a temporary settlement area, perhaps for the merchants. Many of the finds that are not directly associated with tombs come from a specific area at the feet of Ma'ajilayn hill. Here we found glass, glazed wares, terra sigillata, Egyptian wares and amphorae. Possible interpretations are a temporary settlement, a meeting place between merchants and locals, or a space for rituals conducted in relation to the tombs. Banquets, pilgrimages and other rituals related to funerary spaces are historically known among the pastoralists of the Horn.⁸⁴ The interpretation of all three non-funerary sites as temporary is based on the lack of permanent structures, the scarcity of artefacts associated with daily life (such as grinding stones and domestic pottery) and the absence of drinkable water. If there was a permanent presence of merchants in Xiis we have failed to find convincing evidence of their existence thus far.

Our knowledge of the people buried in Xiis is still limited. We can assert with certainty that they were nomads, as they were buried in the same kind of graves that appear along the routes leading to the interior of Somaliland and that are still used today by transhumant pastoralists. The absence of local handmade pottery is also indicative of their nomadism, as they were probably using baskets and gourds – as most mobile pastoralists until recently. In addition, no permanent settlements from this period have been found either in the coast or the interior of Somaliland. The elusive nature of nomadic populations in Antiquity makes them a difficult, though fascinating, topic of study.⁸⁵

Conclusions

Recent fieldwork in Xiis has expanded our knowledge of this site and the role of Somaliland in long-distance trade in Antiquity more generally. Systematic surveys have provided an accurate view of the size of the necropolis and discovered other non-funerary spaces, in which evidence of contact with foreign sailors has been documented. The greater variety of imports indicates that there was an important bias in Révoil's collection, with an over-representation of glass. Until now, however, interpretations of the role of Xiis in Indo-Roman trade had to rely almost solely on those finds. We have found that amphorae and glazed wares were as abundant as glass – if not more. It has been assumed hitherto that local nomads were basically acquiring fine glass vessels to deposit them as

83. *Periplus*, § 16, 6, 10-13 (ed. and transl. Casson 1989, p. 65).

84. González-Ruibal, Torres 2018.

85. Barnard 2009.

funerary offerings in their burials, but the new categories of artefacts indicate that the assemblage that they were acquiring was not substantially different from other participants in the Indo-Roman network and therefore that Xiis was deeply integrated in the Red Sea trading system and its consumption patterns. The 2017-2019 fieldwork has also increased our knowledge on the range of regions with which Xiis had commercial relations. Whereas G. Révoil's materials were mainly from Roman Egypt and the Mediterranean, our surveys have evinced the great relevance of Parthia – as represented by Mesopotamian glazed ware – and South Arabia – organic storage jars. We now have empirical confirmation that the spectacular trade goods documented by G. Révoil were not an oddity, but a common occurrence throughout the site, which means that commercial exchanges were regularly carried out in Xiis with foreign merchants. Finally, the chronology of our materials is very consistent with the Révoil collection, although some of our finds expand the chronology to the 3rd century AD. It is clear, however, that **the heyday of the site was the 1st century AD**. The apparent interruption during the 3rd century still requires confirmation; trade might have moved to areas further east or west of the main site or to altogether different places along the Somali coast. **Xiis remains to date as the only site to have yielded Roman materials from the 1st to 3rd centuries AD in Somaliland**. We will have to extend our research to other regions in the country, both on the coast and inland, to better understand how long-distance trade was articulated during the early 1st millennium AD.

Bibliography

Abbreviation

CCE: *Cahiers de la céramique égyptienne* (Cairo).

Ancient source

Periplus Maris Erythraei, ed. and transl. L. Casson, New Haven, Princeton University Press, 1989.

Modern sources

Ballet 1993: P. Ballet, “Céramiques, faïences et vases en pierre de la collection Révoil”, in J. Desanges, E.M. Stern, P. Ballet, *Sur les routes antiques de l’Azanie et de l’Inde. Le fonds Révoil du Musée de l’Homme (Heïis et Damo, en Somalie)*, Paris, Impr. F. Paillart, 1993, pp. 63-72.

Ballet et al. 1991: P. Ballet, F. Mahmoud, M. Vichy, M. Picon, “Artisanat de la céramique dans l’Égypte romaine tardive et byzantine. Prospections d’ateliers de potiers de Minia à Assouan”, *CCE* 2, 1991, pp. 129-143.

Barnard 2009: H. Barnard, “The archaeology of the pastoral nomads between the Nile and the Red Sea”, in J. Szuchman (ed.), *Nomads, tribes, and the state in the Ancient Near East: cross-disciplinary perspectives*, Chicago, Oriental Institute of the University of Chicago, 2009, pp. 15-41.

Buffa 2014: V. Buffa, “Report on pottery of South Arabian origin at Pattanam site”, in P.J. Cherian (ed.), *Pattanam excavations: interim report of the eighth season*, Thiruvananthapuram, Kerala Council for Historical Research, 2014, pp. 47-51.

Buffa 2015: V. Buffa, “Shape versus ware – the South Arabian straw tempered ovoid storage jars 3rd cent. BC-5th cent. AD”, in I. Gerlach (ed.), *South Arabia and its neighbours. Phenomena of intercultural contacts*, published in *Archäologische Berichte aus dem Yemen* 14, 2015, pp. 47-61.

Chittick 1976: N. Chittick, “An archaeological reconnaissance in the Horn: the British-Somali expedition, 1975”, *Azania* 11/1, 1976, pp. 117-133.

Chittick 1979: N. Chittick, “Early ports in the Horn of Africa”, *IJNA* 8/4, 1979, pp. 273-277.

Cobb 2018: M.A. Cobb, *Rome and the Indian Ocean trade from Augustus to the early third century CE*, Leiden/Boston, Brill, 2018.

- Darley 2019: R. Darley, “The island frontier: Socotra, Sri Lanka and the shape of commerce in the late antique western Indian Ocean”, *Al-Masāq* 31/2, 2019, pp. 223-241.
- David et al. 2016: R. David, M. Naguib Reda, Z. Barahona-Mendieta, A. Consonni, G. Lecuyot, N. Licitra, A. Marangou, S. Marchand, A. Masson, G. Schreiber, A. Simony, “Theban ceramics in Ptolemaic context – fabrics classification”, in R. David (ed.), *Céramiques ptolémaïques de la région thébaine. Actes de la table ronde de Karnak les 28 et 29 septembre 2015*, published in *CCE* 10, 2016, pp. 11-22.
- Davidde, Petriaggi, Williams 2004: B. Davidde, R. Petriaggi, D.F. Williams, “New data on the commercial trade of the harbour of Kanē through the typological and petrographic study of the pottery”, *Proceedings of the Seminar for Arabian Studies* 34, 2004, pp. 85-100.
- Desanges 1992: J. Desanges, “Le fonds Révoil du Musée de l’Homme (Heïis, Somalie, 1881). Aperçus préliminaires”, *Revue des Études Anciennes* 94/1-2, 1992, pp. 99-105, https://www.persee.fr/doc/rea_0035-2004_1992_num_94_1_4485 (accessed 22/01/2021).
- Desanges, Stern, Ballet 1993: J. Desanges, E.M. Stern, P. Ballet, *Sur les routes antiques de l’Azanie et de l’Inde. Le fonds Révoil du Musée de l’Homme (Heïis et Damo, en Somalie)*, Paris, Impr. F. Paillart, 1993.
- Dixneuf 2011: D. Dixneuf, *Amphores égyptiennes. Production, typologie, contenu et diffusion (III^e siècle avant J.-C.-IX^e siècle après J.-C.)*, Cairo, Centre d’études alexandrines, 2011.
- Ettlinger et al. 1990: E. Ettlinger, B. Hedinger, B. Hoffman, P.M. Kenrick, G. Pucci, K. Roth-Rubi, G. Schneider, S. Von Schnurbein, C.M. Wells, S. Zabelhicky-Scheffenegger, *Conspectus Formarum Terrae Sigillatae Italico Modo Confectae*, Bonn, Rudolf Habelt, 1990.
- Francis 2007: P. Francis Jr, “Personal adornments”, in S.E. Sidebotham, W. Wendrich (ed.), *Berenike 1999/2000. Report on the excavations at Berenike, including excavations in Wadi Kalalat and Siket, and the survey of the Mons Smaragdus region*, Los Angeles, The Cotsen Institute of Archaeology, University of California, 2007, pp. 251-257.
- González-Ruibal et al. 2017: A. González-Ruibal, J. de Torres, M.A. Franco, A.M. Ali, A. Shabelle, C. Martínez Barrio, K. Aideded, “Exploring long distance trade in Somaliland (AD 1000-1900): preliminary results from the 2015-2016 field seasons”, *Azania* 52/2, 2017, pp. 135-172.
- González-Ruibal, Torres 2018: A. González-Ruibal, J. de Torres, “The fair and the sanctuary: gathering places in a nomadic landscape (Somaliland, 1000-1850 AD)”, *World Archaeology* 50/1, 2018, pp. 23-40.
- Gurukkal 2016: R. Gurukkal, *Rethinking classical Indo-Roman trade: political economy of eastern Mediterranean exchange relations*, New Delhi, Oxford University Press, 2016.
- Hayes 1975: J.W. Hayes, *Roman and pre-Roman glass in the Royal Ontario Museum. A catalogue*, Toronto, Royal Ontario Museum, 1975.
- Kennet 2004: D. Kennet, *Sasanian and Islamic pottery from Ras al-Khaimah. Classification, chronology and analysis of trade in the western Indian Ocean*, Oxford, Archaeopress, 2004 (e-book version).
- Laubenheimer 1985: F. Laubenheimer, *La production des amphores en Gaule narbonnaise*, Paris, Les Belles Lettres, 1985.
- Lombardi, Buffa, Pavan 2008: A. Lombardi, V. Buffa, A. Pavan, “Small finds”, in A. Avanzini (ed.), *Khor Rori report 2. A port in Arabia between Rome and the Indian Ocean (3rd c. BC-5th c. AD)*, Rome, “L’Erma” di Bretschneider, 2008, pp. 317-476.
- Meyer 1992: C. Meyer, *Glass from Quseir al-Qadim and the Indian Ocean trade*, Chicago, Oriental Institute of the University of Chicago, 1992.
- Peacock 2011: D.P.S. Peacock, “Glass”, in D.P.S. Peacock, L.K. Blue (ed.), *Myos Hormos – Quseir al-Qadim. Roman and Islamic ports on the Red Sea*, Oxford, Archaeopress, 2011, pp. 57-78.
- Peacock, Blue 2011: D.P.S. Peacock, L.K. Blue (ed.), *Myos Hormos – Quseir al-Qadim. Roman and Islamic ports on the Red Sea*, Oxford, Archaeopress, 2011.
- Peacock, Williams 1986: D.P.S. Peacock, D.F. Williams, *Amphorae and the Roman economy. An introductory guide*, London, Longman, 1986.
- Phillips 2018: C. Phillips, *Heis harbour project. Report of preliminary archaeological survey of May*, 2018 (unpublished report).

- Reddy 2015: A. Reddy, "Sourcing Indian ceramics in Arabia: actual imports and local imitations", *Proceedings of the Seminar for Arabian Studies* 45, 2015, pp. 253-271.
- Révoil 1882: G. Révoil, *La Vallée du Darror. Voyage au Pays Çomalis (Afrique orientale)*, Paris, Challamel Ainé, 1882.
- Rougeulle, Marchand 2011: A. Rougeulle, S. Marchand, "Des *sigla* sur la côte du Hadramawt (Yémen), témoins d'une attaque navale?", *CCE* 9, 2011, pp. 437-460.
- Seland 2010: E.H. Seland, *Ports and political power in the Periplus: complex societies and maritime trade on the Indian Ocean in the first century AD*, Oxford, Archaeopress, 2010.
- Seland 2014: E.H. Seland, "Archaeology of trade in the western Indian Ocean, 300 BC-AD 700", *Journal of Archaeological Research* 22/4, 2014, pp. 367-402.
- Sidebotham 2011: S.E. Sidebotham, *Berenike and the ancient maritime spice route*, Berkeley/Los Angeles/London, University of California Press, 2011.
- Smith, Wright 1988: M.C. Smith, H.T. Wright, "The ceramics from Ras Hafun in Somalia: notes on a classical maritime site", *Azania* 23/1, 1988, pp. 115-141.
- Stern 1987: E.M. Stern, "Early Roman glass from Heis on the north Somali coast", in *Annales du 10^e congrès de l'Association internationale pour l'histoire du verre, Madrid-Segovie, 23-28 septembre 1985*, Amsterdam, Association internationale pour l'histoire du verre, 1987, pp. 23-39.
- Stern 1993: E.M. Stern, "The glass from Heis", in J. Desanges, E.M. Stern, P. Ballet, *Sur les routes antiques de l'Azanie et de l'Inde. Le fonds Révoil du Musée de l'Homme (Heis et Damo, en Somalie)*, Paris, Impr. F. Paillart, 1993, pp. 21-61.
- Then-Obluska 2015: J. Then-Obluska, "Beads and pendants from Sedeinga, Nubia", *BEADS: Journal of the Society of Bead Researchers* 27, 2015, pp. 29-45, <https://surface.syr.edu/beads/vol27/iss1/7> (accessed 22/01/2021).
- Tomber 2008: R. Tomber, *Indo-Roman trade. From pots to pepper*, London, Gerald Duckworth and Co, 2008.
- Torres et al. 2019: J. de Torres, A. González-Ruibal, C. Kleinitz, M.A. Franco Rodríguez, C. Martínez Barrio, A.D. Jama, "Excavation of a first century AD tomb in Heis (Somaliland): evincing long-distance trade contacts", *Nyame Akuma* 91, 2019, pp. 30-35, <https://digital.csic.es/handle/10261/216276> (accessed 22/01/2021).
- Williams, Peacock 2005: D.F. Williams, D.P.S. Peacock, "The eruption of Vesuvius and Campanian Dressel 2-4 amphorae", in J. Pollini (ed.), *Terra Marique: studies in art history and marine archaeology in honor of Anna Marguerite McCann on the receipt of the gold medal of the Archaeological Institute of America*, Oxford, Oxbow Books, 2005, pp. 140-148.
- Zazzaro 2013: C. Zazzaro, *The ancient Red Sea port of Adulis and the Eritrean coastal region. Previous investigations and museum collections*, Oxford, Archaeopress, 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.

