

A regional and international hub of trade

New data about the harbour of Clysma/al-Qulzum

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The city and port of al-Qulzum, currently located in the modern city of Suez, was a major offloading trade point between the Mediterranean, Egypt and the Red Sea. The site is well known from papyrological documentation, but has only been excavated twice: first by the French archaeologist B. Bruyère between 1930 and 1932 – *Fouilles de Clysma-Qolzoum (Suez) 1930-1932, FIFAO 27, 1966* –, then by a mission of the Supreme Council of Antiquities between 1960 and 1962, the later excavations remaining unpublished. The study of the register book listing the objects found between 1960 and 1962, combined with the analysis of the material retrieved by Bruyère, allows the reassessment of the chronology and functions of the site. Al-Qulzum was undoubtedly a commercial and economic hub, at least from the Late Period to the first centuries of Islam. Its implication in Indian trade will be compared to the local and regional networks.

La cité portuaire d'al-Qulzum, actuellement située dans la ville de Suez, était une plaque tournante majeure du commerce entre la Méditerranée, l'Égypte et la mer Rouge. Bien appréhendé grâce à la documentation papyrologique, le site n'a cependant été fouillé qu'à deux reprises : une première fois entre 1930 et 1932 par l'archéologue français B. Bruyère – Fouilles de Clysma-Qolzoum (Suez) 1930-1932, FIFAO 27, 1966 –, et une seconde fois entre 1960 et 1962 par une mission du Conseil suprême des Antiquités, dont les fouilles n'ont pas été publiées. L'étude du registre contenant la liste des objets mis au jour entre 1960 et 1962, associée à l'analyse du matériel découvert par Bruyère, permet de réévaluer la chronologie et les fonctions du site. Al-Qulzum fut indubitablement un carrefour commercial et économique, au moins de la Basse Époque aux premiers siècles de l'islam. Pour le démontrer, son implication dans le commerce avec l'Inde sera comparé avec sa place dans les réseaux locaux et régionaux.

“Going East from Egypt, you reach the Red Sea. The city of Qolzom is located on the shore of this sea, and is thirty parasangs from Cairo. This sea is a gulf of the ocean that splits off in Aden to the north and ends at Qolzom. [...] Between Cairo and the Gulf is mountain and desert where there is neither water nor growth. Whoever wants to go to Mecca from Egypt must go east. From Qolzom there are two ways, one by land, one by sea. The land route can be traversed in fifteen days, but it is all desert and three hundred parasangs long. Most of the caravans from Egypt take that way”.¹

1. Testimony from the 11th century traveller, Naser-e Khosraw, *Book of travels* (transl. Thackston Jr. 1986).

Al-Qulzum's excavations: new investigations on the material of the site

Al-Qulzum, ancient Clysma,² was an important harbour connecting the Mediterranean Sea, Egypt and the Red Sea, located at the northern end of the Gulf of Suez. The site is well known through literary sources and papyrus,³ notably studied by Philip Mayerson⁴ and Jean Gascoü.⁵ Oddly enough, it has only been excavated twice:⁶ firstly by a French team under the direction of Bernard Bruyère, between 1930 and 1932, whose results, mostly about the urbanism and the material culture, were published in 1966.⁷ Then the site was excavated for three more seasons between 1960 and 1962 by a team from the Supreme Council of Antiquities, led by Shafik Farid.⁸ Apart from a few words in *Orientalia* at the time of the excavation,⁹ the results of this last operation remain unpublished. Mahmoud Abd el-Raziq, who was part of the Supreme Council of Antiquities excavations at the time, proposed that we study and publish these results together.

This article is the first step in the study of this unpublished data. It is based on the analysis of the excavation's register book, containing an illustrated list of 1,039 objects – most of them complete or inscribed – retrieved during the excavation. Some of them are currently exhibited in the Suez Museum. The preliminary study consisted of the dating and categorisation of the finds, through the observation of the small black-and-white pictures in the register.¹⁰ It immediately gave us a better idea of the chronology of the site (*tab. 1*). Pending direct examination of the objects in the next phase of the project, we propose to attribute the finds to a chronological period rather than giving them a specific date. The documentation available at this stage does not allow us to describe the archaeological remains either. The data available, though limited, complete what Bruyère retrieved and allow us to provide a welcome reassessment of the chronology of occupation of Clysma/al-Qulzum. It also highlights the place of the site in the economic networks at different stages of its existence, thanks to the identification of the provenance of a number of objects found on the site.

Let us first look at the nature and chronology of the material examined, before outlining the historical implications and reconsidering the importance of Clysma/al-Qulzum in local and regional trade. The site is very often described as a gateway,¹¹ but rarely as part of the local or regional market.

2. The name "Klyisma" appears for the first time during the 2nd century AD (Mayerson 1996a, p. 119), before that it was called "Arsinoe" and/or "Kleopatris" (probably two adjacent towns that became only one afterwards: Cohen 2006, pp. 308-309). This was also presented by Bruyère (1966, pp. 11-35) when dealing with the sources; this subject will not be covered by us here.
3. See the documentary sources gathered by the interdisciplinary platform Trismegistos: www.trismegistos.org/place/2794 (accessed 10/28/2020). The so-called "Suez" area or site is a very complex area, recently disturbed by the Suez Canal and the growth of urbanism during the 19th and early 20th centuries: it included several sub-sites of diverse chronologies, such as Tell al-Yahudiyya (see Grossmann, Salib, al-Hangury 2005 for the survey), Tell al-Hajji or the Cemetery Island (Brun 2016, § 95-96, summarizing Bourdon 1925).
4. Mayerson 1993; Mayerson 1995; Mayerson 1996a; Mayerson 1996b.
5. Gascoü 2018.
6. Meurice 2015.
7. Bruyère 1966.
8. After a first survey by Labib Habachi: Leclant 1961, p. 102; Leclant 1962, p. 198.
9. Leclant 1963, p. 85; Leclant 1964, p. 342. See also Bruyère 1966, p. 7, n. 1.
10. This research was supported by the French Institute of Archaeological Research in Cairo (IFAO), in the frame of the program "Defining the Egyptian margin and borders from Antiquity to the medieval period" (2016).
11. Referring to W. Facey's "a sea on the way to somewhere else", mentioning the Red Sea: Facey 2004, p. 7.

Period	Type	Quantity	Total
Pharaonic (New Kingdom)	Egyptian pottery container	1	2 (4?)
	Hieratic ostraca	1 (3?)	
Late Period	Imported pottery container	2	2
Ptolemaic	Egyptian pottery container	97	272
	Imported pottery container	6	
	Glass container	5	
	Hardstone container	1	
	Metal container	1	
	Imported stamped handle (container)	117	
	Pottery oil lamp	38	
	Terracotta figurine	4	
	Terracotta object	1	
	Plaster/gypsum (mould)	1	
	Faience bead	1	
Roman	Egyptian pottery container	19	124
	Imported pottery container	14	
	Glass container	17	
	Pottery oil lamp	65	
	Terracotta figurine	8	
	Hardstone sculpture	1	
Byzantine	Egyptian pottery container	30	96
	Imported pottery container	12	
	Terracotta figurine	4	
	Pottery oil lamp	42	
	Glass oil lamp	1	
	Glass container	1	
	Ostracon (on pottery sherd)	1	
	Object (stopper)	3	
	Wood object	1	
	Bone object	1	
Early Islamic	Egyptian pottery	17	48
	Pottery oil lamp	16	
	Soft-stone lamp	2	
	Coin	1	
	Glass container	4	
	Glass weight	3	
	Hardstone	3	
	Bone object	1	
	Wood object	1	
Ottoman	Terracotta object (pipe)	3	3
Unknown			492 (490?)
			Total artefacts: 1,039

Tab. 1 – Inventory of the artefacts and distribution according to their chronology, based on the register book of the 1960-1962 Egyptian excavations' campaigns.

Reconsidering the local and regional connections and its chronology: a preliminary study of the material culture

We were able to re-evaluate the date of the first occupation of the site, as an imposing storage jar bearing the cartouches of Ramses III (1184-1153 BC) was found during the excavations of the 1960s (*fig. 1*).¹² It belongs to the same type as three jars carrying the cartouches of Sety II (1202-1196 BC) that have been discovered in Egyptian forts in North Sinai, notably one coming from Tell Farah.¹³ This important discovery, as well as a Ramesside hieratic ostrakon,¹⁴ illustrates an occupation of the site dating back to the 20th dynasty.¹⁵ Two amphorae could then be assigned



Fig. 1 – Storage jar inscribed with the cartouches of Ramses III from al-Qulzum, exhibited in the Suez Museum (C. Somaglino).

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12. Made of Nile silt. It is apparently not made of the local marl clay found in the Sinai area: for the classification, called “the Vienna System”, see Arnold, Bourriau 1993, pp. 168-182. The jar is now exhibited in the Suez Museum.
13. Gilmour, Kitchen 2012 for the stamped jars of Sety II; Aston 2004 (p. 203) for the New Kingdom pottery kilns.
14. Forthcoming. Two other ostraca, found with the first, might also bear hieratic texts. The photos on the register are too small to ascertain this fact.
15. Bruyère also mentions an amphora possibly dated to the 18th dynasty (1966, pl. XXIV, 20). While revising their article, the authors became aware of the recent publication of a study dedicated by C. von Pilgrim to the Egyptian excavation in Qulzum (more particularly on the New Kingdom remains), based on archives held at the Schweizerisches Institut für Ägyptische Bauforschung und Altertumskunde in Kairo: C. von Pilgrim, “Die Festung mit Palast von Ramses III. in Tell el-Qolzum (Suez)”, *Ägypten und Levante XXXI*, 2021, pp. 487-512.

to the Late Period: they are probably of the Chios amphora type, decorated with reddish-brown lines on the surface.¹⁶

However, the heyday of the port of Clysma really began in the Ptolemaic period. The strategic position of the site, between Egypt, Sinai Peninsula and the Levant makes it an important waypoint for any journey between Africa and the Arabian Peninsula, as well as between the Mediterranean and the Red Sea towards the Indian Ocean. The vitality of the harbour at the time seems to have been closely linked with the operation of the so-called “Canal of the Pharaohs” or “Two Seas Canal” dug first under Darius I (521-486 BC), during the first Persian domination, then again by Ptolemy II (282-246 BC).¹⁷ The material culture comprises lots of common and surely local tableware such as convex bowls, fish plates, *chytrai* (cooking pots), *unguentaria* and oil lamps, all characteristic of the 3rd to the 1st century BC.¹⁸ Meanwhile, the import of fine ware reflects connections with others regions: an attic black-glazed bowl has been identified,¹⁹ as well as a relief black-glazed bowl, which could testify to exchanges with Ionian area workshops.²⁰ Numerous stamped amphorae handles²¹ have also been found: 123 imported amphorae have been counted, while only 97 Egyptian amphorae have been identified. This large amount of wine amphorae clearly indicates regular trade within the Aegean world.²² Anecdotally, we should also mention the presence of a foreign-rider figurine,²³ which also testifies to the knowledge of other extra-regional cultures.

The prosperity of the city increased even more after the reopening of the canal under Trajan (98-117), then named “Trajan’s River”, which linked Clysma to Babylon of Egypt.²⁴ At that time, Roman pottery was characterized by the fairly significant presence of imports from North Africa (14 sigillata²⁵ and amphorae,²⁶ compared to 19 locally made vessels). The material culture also comprises many bone or ivory hairpins, oil lamps (frog and medallion types)²⁷ and a sculpted portrait of a man, made of white marble.

The commercial activity of the Byzantine emperors in the Red Sea is reflected by the significant presence in Clysma of late material from North Africa²⁸ as well as containers from the eastern Mediterranean.²⁹ Less common in the Nile valley, there are also several amphorae from Aqaba.³⁰ This series of amphorae of an eastern Byzantine type is not much known outside of the Red Sea area.³¹

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16. They were traded from the end of the 7th century to the third quarter of the 6th century BC: Masson 2007, fig. 1.1, p. 362 for a description of the type.
 17. Redmount 1995; Bresciani 1998; Aubert 2004; Cooper 2009.
 18. See also Bruyère 1966, fig. 8.3, 6, 18 for some Ptolemaic vessels.
 19. Bruyère 1966, p. 49.
 20. For Ephesus’ workshop, see Rogl 2014, p. 126; for Ionian ones: Laumonier 1977; for others: Siebert 1978.
 21. Bruyère 1966, pp. 49, 110, pl. XXIX.
 22. For studies about stamped amphorae, see G. Cankardeş-Şenol’s work such as the one in Alexandria: Cankardeş-Şenol 2017.
 23. The iconography represents a rider, from Persia or Cyprus, wearing a typical conical helmet: see Furlan 2019, pp. 95-96 for a recent account.
 24. Sijpesteijn 1963; Cooper 2014, pp. 95-99.
 25. Named ARS W (African Red Slip Ware); most of them have geometric and figured patterns stamped inside: see examples in Hayes 1972.
 26. Such as an African Amphora II A1. It is the most ancient Roman material that has been identified in the pictures (end of 2nd – beginning of 3rd century AD); see Bonifay 2004, p. 111, fig. 57.1-2.
 27. See also Bruyère 1966, pl. XXIV bottom right corner, third, fifth and sixth on the first rank (for the Roman amphorae); pl. XXX-XXXI-XXXII (for Roman lamps); fig. 7 (for the hairpins).
 28. For instance, an African Amphora III C (= Keay 25, variant 2; end 4th – mid 5th century AD) is identified: Bonifay 2004, pp. 119-122, fig. 65. There is probably another one in Bruyère 1966, pl. XXIV, fourth on first rank.
 29. Such as LRA 1 B for the latest variants: see Pieri 2005, pp. 75-76.
 30. Whitcomb 2001, pp. 298-299, fig. 2b.
 31. A number of them have been found in Berenike (C. Caputo, pers. comm., with thanks of the authors).

The presence of *dipinti* composed of three big letters (which we suppose were originally in red) on their body suggests that they belong to the same Byzantine commercial system as other amphorae of the time, so far only studied in the Mediterranean.³² We counted a total of 12 imported amphorae compared to 30 Egyptian ones for this period.³³

The centuries of the Byzantine-Islamic transition³⁴ are then marked in the excavated material by the presence of oil lamps: late frog types moulded with geometric patterns, then early glazed and nozzle lamps³⁵ from the 7th to the 10th centuries. The similarity of patterns between the clay oil lamps retrieved on the site and those from the southern Levantine coast speaks of strong regional connections.³⁶ Such lamps do not appear on the opposite side of the Delta, in the Alexandrian area for instance.

After the Arab-Muslim conquest, the caliph ‘Umar reinstated what is now referred to as the “Canal of the Commander of the Faithful” (643-644), leading to the emergence of the Islamic city of al-Qulzum.³⁷ The economic dynamism of the city is particularly evident in the soft-stone ware that probably came from the Hijaz;³⁸ while the passage of numerous pilgrims on their way to Mecca also greatly contributed to the prosperity of al-Qulzum. The material from this period also includes the first items of Egyptian glaze,³⁹ and glass containers called “molar flasks”.⁴⁰

The decline of the city and its harbour happened during the 11th century because of climatic, religious and political reasons – the Crusades among them.⁴¹ This is shown clearly by the fact that the hajj caravan no longer halted there. Very few items can be dated to the Middle Islamic period. The city was less known at that time, though it was still active. At the time of Bruyère’s study, Georges Nagel identified Ayyubid and Mamluk pottery.⁴² Then, during the Ottoman period, only a few tobacco pipes have been identified.⁴³

Al-Qulzum: a gateway to the Red Sea network?

During the Ptolemaic period, the city was flourishing. The large quantity of stamped handles, that is to say of imported amphorae (117 items, if one considers one stamp per amphora), suggests an economy geared towards the Mediterranean Sea and probably linked with a series of towns and cities located in North Sinai (Tell el-Herr, Pelusium...). The site is also mentioned during the 1st century BC by Strabo in his *Geography*.⁴⁴

32. For a presentation of the Byzantine economy according to the *dipinti*: Fournet, Pieri 2008.

33. Egyptian containers are of the LRA 7 (Bruyère 1966, pl. XXIV, second, fourth and fifth on the last rank), AE 3T (Bruyère 1966, pl. XXIV, third on the mid rank) typologies: see Dixneuf 2011 for their description.

34. Bruyère does not mention archaeological structures of this period, only artefacts (p. 46-47), but lots of lamps are dated from this period (p. 111-113, pl. XXXIII-XXXV).

35. Such as the one of Fustat: Kubiak 1970.

36. For some lamps, see Da Costa 2001, fig. 4 (Late Byzantine, Umayyad and Early Abbasid types); Daviau, Beckmann 2001; for Egyptian lamps of the Byzantine-Islamic period: Chrzanowski 2013.

37. Cooper 2014, pp. 95-99.

38. See Marchand, this volume. See also Bruyère 1966, p. 113, pl. XXIII, XXXV.

39. Glaze on kaolinitic clay: see Gayraud 2006 for the technique and the chronology.

40. Bruyère 1966, fig. 11. The type is common in the whole Early Islamic Middle East area: see Whitehouse 2010, cat. no. 103-112.

41. Cooper 2014, p. 236.

42. Personal notes of G. Nagel, IFAO archives. The authors would like to thank C. Larcher and M. Essam for helping them to consult the Qulzum archives in September 2016.

43. Bavay 2010. At his time, Bruyère made the same observation: very few items were dated to this period; probably destroyed by the modern remodelling and looting of surface ruins (Bruyère 1966, p. 44).

44. Strabo, *Geography*, 16, 4, 23; 17, 1, 25 (transl. Jones 1959-1961).

At the beginning of the 2nd century AD, the main period of prosperity of Clysma occurred, and its name thus appeared in written sources. It coincides with the digging of its direct connection with the apex of the Delta, the fortress of Babylon. The western part of the so-called “Canal of Trajan” was probably found there during ARCE archaeological research and conservation work in the Roman fortress of Babylon in Old Cairo.⁴⁵ This marginal area was then directly linked with the core of the country. At this time, Clysma was endowed with public baths, as archaeology shows.⁴⁶

Evidence of material dated to the 4th and 5th centuries seems to confirm the minor presence of the Byzantine power in the Red Sea. A more substantial presence came back during the 6th century in a context of contested hegemony between Byzantine and Sassanian empires.⁴⁷ The new importance of trade is confirmed by an inscription dated from Anastasius, mentioning a *commercus* at Clysma, that is to say, a controller of foreign trade.⁴⁸ It also seems that numerous ships were present in its port, or in the vicinity, to control the Red Sea against the incursions of the Himyarite kingdom and the Axumites.⁴⁹ Late Roman and Byzantine archaeological evidence from Berenike indicates reduced contacts⁵⁰ between the Red Sea and Mediterranean region at that time: the smaller amounts of material from Clysma suggests the same.

The most vibrant phase for Clysma started after the Arab-Muslim conquest when the “Canal of the Commander of the Faithful” was opened. The site then became a waypoint for pilgrims to the hajj⁵¹ and for grain sent to Medina, via its harbour al-Jar and Jidda.⁵² The bustling naval activity of Clysma long attested in papyrus can also be seen in the numerous inscribed wooden pulleys retrieved at the site.⁵³ The city, its arsenal and pilgrimage outpost⁵⁴ then blossomed, as testified by the many contacts with other regions. The Persian geographer Ibn Khurradadhbih described al-Qulzum at that time as an offloading point: goods were transported there by camels and were loaded onto ships sailing to several harbours in the Red Sea, and then onto the Indian Ocean.⁵⁵

The Egyptian Clysma/al-Qulzum appears at that time to be the twin city of the Jordanian Aqaba/Ayla. The Red Sea was truly important within “Indian” trade routes. Hence, each harbour had, in the Arabic sources, a nickname linked to the different destinations in the Indian seas: Aqaba was called “the port on the China Sea”⁵⁶ and Qulzum “the port from India”.⁵⁷ Aden also had its importance and was

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45. Sheehan 2012. The eastern extremity was already surveyed previously by Bourdon (1925).
46. Fournet, Redon, Vanpeene 2017, cat. no. 58 (a public complex is dated from the Late Roman/Early Byzantine period); cat. no. 59 is a private bath.
47. Power 2012, pp. 61-102.
48. Sartre 1982, no. 9046, pp. 112-119.
49. Mayerson 1996a, p. 123.
50. According to S.E Sidebotham’s expression: Sidebotham 2002, pp. 231-234.
51. Sijpesteijn 2014.
52. Donner 1977, pp. 254-255.
53. Mayerson 1996a, p. 126, referring to the *Dizionario dei nomi geografici e topografici dell’Egitto* of S. Daris (Milan, 1978, vol. III/1, p. 127), lists all the mentions of Clysma’s name in written sources. See also for instance *P.Lond.* III, 1162 (dated from the 7th century) and *P.Lond.* IV, 1346 (dated 710 AD); for the ship’s materials and pulleys, see Bruyère’s excavations material (1966, pl. XXIX, 3).
54. Christian pilgrims to the Holy Land were also passing by: see Peter the Deacon’s testimony in Mayerson 1996b. The Raithu monastery was also an important destination during the Early Islamic period: Kawatoko, Shindo 2009, p. 2.
55. Cooper 2014, p. 213 for the translation of Ibn Khurradadhbih, *Masalik* (ed. De Goeje 1889), pp. 153-154.
56. Muqaddasi, *The best divisions for knowledge of the regions*, p. 161 (transl. Collins, Hamid Al-Tai 1994); Whitcomb 1988.
57. According to Peter the Deacon (ca 1137), purportedly derived from the itinerary of Egeria (ca 382): Mayerson 1996b, p. 62.

called “the vestibule” or the “corridor of al-Sin” (China).⁵⁸ These three harbours were undoubtedly important trade hubs between the Mediterranean world and the East, either far, dreamed of or exotic.⁵⁹ All factors combined, al-Qulzum’s key position between Africa and Arabia, associated with the strong will of a series of rulers, made the site a place of rest and security for caravans of traders, travellers and pilgrims, both Christians and Muslims, for centuries.⁶⁰

The periods of prosperity of al-Qulzum have often been closely related to the development of the canal linking the Red Sea to the Nilotic network,⁶¹ even if, of course, terrestrial roads existed in parallel. This success was a real challenge considering the sandy and arid area where the harbour is situated, and its location at the end of a stretch of water that was difficult to navigate because of strong winds⁶² – we can note though that these difficulties never prevented the installation of harbours in the northern Red Sea since the Pharaonic period.⁶³ These difficulties maybe explain the development of Raithu monastery, and its harbour, al-Raya, later known as al-Kilani, during Early and Middle Islamic centuries. They were located at the southern end of the Gulf of Suez, where navigation and boarding were much easier.⁶⁴ The only mentioned resource of Clysma/al-Qulzum’s hinterland was the *bi’r*, that is to say a well, of ‘Uyun Musa, that may have provided fresh water until the 19th century.⁶⁵

The *bi’r* was productive enough to meet day-to-day water needs – even though the water is described as brackish – and to be a resource for a pottery workshop.⁶⁶ The noticeable production of Late Roman amphorae types indicates the presence of wine processing in the area during Early Islamic centuries.⁶⁷ Even if, as Mayerson says, “there is a noticeable absence of citations from the papyrological documents that would indicate some kind of economic activity connecting Egypt with the site at the head of the Gulf of Suez”, archaeology proves the opposite.⁶⁸

Conclusion

This preliminary study of the 1960-1962 excavations in al-Qulzum, together with a new interpretation of Bruyère’s work will undoubtedly provide a much more accurate picture of the chronology and nature of the occupation of the port and the city, as well as new indications about the Red Sea network trade in the “longue durée”.

Firstly, the very dynamic economy of the harbour during the Ptolemaic period reflects its links with the Mediterranean centres of activities and production. While little has been said of its use under the Ptolemies, probably because no extensive excavations have been done in the field, one can indeed wonder about the link between Clysma, Myos Hormos and Berenike for example. These last two

58. Muqaddasi, *The best divisions for knowledge of the regions*, pp. 82-83.

59. Tomber 2008; Mayerson 1993.

60. It was in competition with other harbours of the Red Sea such as Myos Hormos or Berenike.

61. Cooper 2014.

62. Mayerson 1996a, p. 119.

63. See Somaglino, Tallet, this volume for Ayn Sukhna harbour.

64. Ibn Hawqal, *Kitab Surat al-Ard*, p. 11 (transl. Kramers, Wiet 1964): see Kawatoko, Shindo 2009, p. 2.

65. Monge 1809.

66. Boddy 1901, after the description of Monge of the *Expédition d’Égypte*.

67. Ballet 2001: the workshop produced *zir* and *sāqia* pots to store and manage water, and three types of amphorae, likely for local wine. The *zir* was still produced in the 19th century: Monge 1809. No evidence is known for Graeco-Roman period workshops.

68. Mayerson 1996a, p. 122.

harbours clearly looked towards Africa, Arabia, and India, even if our knowledge of their economy is not as clear as in the Roman period. The full study of the material, allowing to establish a precise chronology, may then enlighten us about the role of Clysma at that time.

Secondly, the economic importance of Clysma during the Roman domination – said to have been minor – and the Early Islamic centuries, has to be reconsidered in the light of the archaeological data newly available, as well as the economic link between Egypt and the Arabian Peninsula. Despite its arid environment, the city of Clysma/al-Qulzum was consistently associated with dynamic networks, as attested by the many goods coming either from the Nile Valley, the Mediterranean or the Indian worlds identified in the archaeological material retrieved during the excavations. There is no doubt that the study of the objects themselves, as well as the undergoing analysis of the photographs from the 1960s' excavations, will give even more insights into the importance of the site.

Bibliography

Abbreviations

BSGE: *Bulletin de la Société de géographie d'Égypte* (Cairo).

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

Ancient sources

Ibn Hawqal, *Kitab Surat al-Ard*, transl. J.H. Kramers, G. Wiet, Paris, Maisonneuve & Larose, 1964.

Ibn Khurradadhbih, *Kitâb al-Masâlik wa'l-Mamâlik Auctore Abu'IKâsm Obaidallad ibn Abdallaah Ibn Khordâdhheh accident excerpta e Kitab al-Kharâj Auctore Kodâma ibn Dja'far*, ed. M.J. De Goeje, Leiden, Brill, 1889.

Muqaddasi, *The best divisions for knowledge of the regions*, transl. B.A. Collins, M. Hamid Al-Tai, Reading, Garnet Publishing Limited, 1994.

Naser-e Khosraw, *Naser-e Khosraw's Book of travels*, transl. W.M. Thackston Jr., New York, SUNY Press, 1986.

Strabo, *The Geography of Strabo*, vol. VII-VIII, transl. H.L. Jones, London/Harvard, W. Heinemann/Harvard University Press, 1959-1961.

Modern sources

Arnold, Bourriau 1993: D. Arnold, J. Bourriau (ed.), *An introduction to Ancient Egyptian pottery*, Mainz, Philipp von Zabern, 1993.

Aston 2004: D.A. Aston, "Amphorae in New Kingdom Egypt", *Ägypten und Levante/Egypt and the Levant* 14, 2004, pp. 175-213.

Aubert 2004: J.-J. Aubert, "Aux origines du canal de Suez? le canal du Nil à la mer Rouge revisité", in M. Clavel-Lévêque, E. Hermon (ed.), *Espaces intégrés et ressources naturelles dans l'Empire romain. Actes du colloque de l'Université de Laval – Québec (5-8 mars 2003)*, Besançon, Institut des sciences et techniques de l'Antiquité, 2004, pp. 219-252, https://www.persee.fr/doc/ista_0000-0000_2004_act_939_1_2107 (accessed 26/01/2021).

Ballet 2001: P. Ballet, "Un atelier aux 'Sources de Moïse' (Uyun Musa)", in J.-M. Mouton (ed.), *Le Sinaï, de la conquête arabe à nos jours*, Cairo, IFAO, 2001, pp. 37-50.

Bavay 2010: L. Bavay, "Fumer comme un Turc. Les pipes ottomanes provenant de la TT29 à Cheikh Abd el Gourna", in E. Warmenbol, V. Angenot (ed.), *Thèbes aux 101 portes. Mélanges à la mémoire de Roland Tefnin*, Turnhout, Brepols, 2010, pp. 27-48.

Boddy 1901: A.A. Boddy, "Les sources de Moïse", *BSGE* V^e série 10, 1901, pp. 619-625.

- Bonifay 2004: M. Bonifay, *Études sur la céramique romaine tardive d'Afrique*, Oxford, Archaeopress, 2004.
- Bourdon 1925: C. Bourdon, *Anciens canaux, anciens sites et ports de Suez*, Cairo, Société royale de géographie d'Égypte, 1925.
- Bresciani 1998: E. Bresciani, "L'égitto achéménide: Dario I e il canale del mar Rosso", *Transeuphratène* 14, 1998, pp. 103-111.
- Brun 2016: J.-P. Brun, "Techniques et économies de la Méditerranée antique", *L'annuaire du Collège de France* 115, 2016, pp. 471-502, <http://journals.openedition.org/annuaire-cdf/12709> (accessed 30/11/2020).
- Bruyère 1966: B. Bruyère, *Fouilles de Clysmā-Qolzoum (Suez) 1930-1932*, Cairo, IFAO, 1966, <https://archive.org/details/FIFA027> (accessed 25/01/2021).
- Cankardeş-Şenol 2017: C. Cankardeş-Şenol, "Imported stamped amphorae handles found in the excavations of the Majestic cinema, Alexandria", in J.-Y. Empereur (ed.), *Alexandrie, Césaréum: les fouilles du cinéma Majestic. La consommation céramique en milieu urbain à la fin de l'époque hellénistique*, Alexandria, Centre d'études alexandrines, 2017, pp. 321-342.
- Chrzanowski 2013: L. Chrzanowski, "La transition technologique byzantino-arabe en Égypte et au Proche-Orient: lampes coptes et musulmanes de la collection Bouvie", *PEUCE. Serie Nouă IX*, 2013, pp. 177-228, <http://revistapeuce.icemtl.ro/wp-content/uploads/Arhiva-Peuce-Serie-noua/10-Peuce-SN-XI-2013/06-Chrzanowski-Peuce-13-2013.pdf> (accessed 26/01/2021).
- Cohen 2006: G.M. Cohen, *The Hellenistic settlements in Syria, the Red Sea basin, and North Africa*, Berkeley/Los Angeles/London, University of California Press, 2006.
- Cooper 2009: J.P. Cooper, "Egypt's Nile – Red Sea Canals: chronology, location, seasonality and function", in L.K. Blue, J.P. Cooper, R. Thomas, J. Whitwright (ed.), *Connected hinterlands. Proceedings of Red Sea Project IV held at the University of Southampton, September 2008*, Oxford, Archaeopress, 2009, pp. 195-209.
- Cooper 2014: J.P. Cooper, *The medieval Nile: route, navigation, and landscape in Islamic Egypt*, Cairo, The American University in Cairo Press, 2014.
- Da Costa 2001: K. Da Costa, "Byzantine and Early Islamic lamps: typology and distribution", in E. Villeneuve, P. Watson (ed.), *La céramique byzantine et proto-islamique en Syrie-Jordanie (IV^e-VIII^e siècles apr. J.-C.). Actes du colloque tenu à Amman les 3, 4 et 5 décembre 1994*, Beirut, IFPO, 2001, pp. 241-257.
- Daviau, Beckmann 2001: M. Daviau, M. Beckmann, "Umayyad painted pottery and Abbasid period lamps at Tell Jawa: a chronological dilemma", in E. Villeneuve, P. Watson (ed.), *La céramique byzantine et proto-islamique en Syrie-Jordanie (IV^e-VIII^e siècles apr. J.-C.). Actes du colloque tenu à Amman les 3, 4 et 5 décembre 1994*, Beirut, IFPO, 2001, pp. 259-274.
- Dixneuf 2011: D. Dixneuf, *Amphores égyptiennes. Production, typologie, contenus et diffusion (III^e siècle avant J.-C. - IX^e siècle après J.-C.)*, Alexandria, Centre d'études alexandrines, 2011.
- Donner 1977: F.M. Donner, "Mecca's food supplies and Muhammad's boycott", *JESHO* 20/3, 1977, pp. 249-266.
- Facey 2004: W. Facey, "The Red Sea: the wind regime and location of ports", in P. Lunde, A. Porter (ed.), *Trade and travel in the Red Sea region. Proceedings of Red Sea Project 1 held in the British Museum, October 2002*, Oxford, Archaeopress, 2004, pp. 7-18.
- Fournet, Pieri 2008: J.-L. Fournet, D. Pieri, "Les *dipinti* amphoriques d'Antinoopolis", in R. Pintaudi (ed.), *Antinoopolis I*, Florence, Istituto Papirologico "G. Vitelli", 2008, pp. 175-216.
- Fournet, Redon, Vanpeene 2017: T. Fournet, B. Redon, M. Vanpeene, "Catalogue of the Roman and Byzantine baths of Egypt", in B. Redon (ed.), *Collective baths in Egypt 2. New discoveries and perspectives: balaneia, thermae, ḥammāmāt*, Cairo, IFAO, 2017, pp. 451-523.
- Furlan 2019: U. Furlan, "The finds from the house of the horses", in M. Kenawi (ed.), *Kom al-Ahmer – Kom Wasit I. Excavations in the Metelite Nome, Egypt, ca 700 BC-AD 1000*, Oxford, Archaeopress, 2019, pp. 95-98.
- Gascou 2018: J. Gascou, "Nouveautés documentaires et littéraires sur Clysmā", in J.-P. Brun, T. Faucher, B. Redon, S.E. Sidebotham (ed.), *Le désert Oriental d'Égypte durant la période gréco-romaine: bilans archéologiques*, Paris, Collège de France, 2018, <https://books.openedition.org/cdf/5183> (accessed 23/11/2019).

- Gayraud 2006: R.-P. Gayraud, “La réapparition des céramiques à glaçure en Égypte”, in B. Mathieu, D. Meeks, M. Wissa (ed.), *L'apport de l'Égypte à l'histoire des techniques. Méthodes, chronologie et comparaisons*, Cairo, IFAO, 2006, pp. 101-116.
- Gilmour, Kitchen 2012: G. Gilmour, K.A. Kitchen, “Pharaoh Sety II and Egyptian political relations with Canaan at the end of the Late Bronze Age”, *IEJ* 62/1, 2012, pp. 1-21.
- Grossmann, Salib, al-Hangury 2005: P. Grossmann, M.S. Salib, M.S. al-Hangury, “Survey of an Early Christian burial chapel at Tall al-Yuhudiyya-Suez”, *Bulletin de la Société d'archéologie copte* 44, 2005, pp. 45-53.
- Hayes 1972: J.W. Hayes, *Late Roman pottery*, London, The British School at Rome, 1972.
- Kawatoko, Shindo 2009: M. Kawatoko, Y. Shindo (ed.), *Artifacts of the Islamic Period excavated in the Rāya/al-Ṭūr Area, South Sinai, Egypt: ceramics, glass, painted plaster*, Tokyo, Joint Usage/Research Center for Islamic Area Studies, Organization for Islamic Area Studies, Waseda University, 2009.
- Kubiak 1970: W.B. Kubiak, “Medieval ceramic oil Lamps from Fustāṭ”, *Ars Orientalis* 8, 1970, pp. 1-18.
- Laumonier 1977: A. Laumonier, *La céramique hellénistique à reliefs 1. Ateliers « ioniens »*, Athens, École française d'Athènes, 1977.
- Leclant 1961: J. Leclant, “Fouilles et travaux en Égypte, 1957-1960 (première partie)”, *Orientalia* 30/1, 1961, pp. 91-110.
- Leclant 1962: J. Leclant, “Fouilles et travaux en Égypte et au Soudan, 1960-1961 I. Fouilles en Égypte”, *Orientalia* 31/2, 1962, pp. 197-222.
- Leclant 1963: J. Leclant, “Fouilles et travaux en Égypte et au Soudan, 1961-1962 I. Fouilles en Égypte”, *Orientalia* 32/1, 1963, pp. 82-101.
- Leclant 1964: J. Leclant, “Fouilles et travaux en Égypte et au Soudan, 1962-1963”, *Orientalia* 33, 1964, pp. 337-404.
- Masson 2007: A. Masson, “Amphores de Chios et amphore à anses de panier découvertes dans la maison VII du quartier des prêtres de Karnak”, in S. Marchand, A. Marangou (ed.), *Amphores d'Égypte. De la Basse époque à l'époque arabe*, published in *CCE* 8/1, 2007, pp. 361-367.
- Mayerson 1993: P. Mayerson, “A confusion of Indias: Asian India and African India in the Byzantine sources”, *Journal of the American Oriental Society* 113/2, 1993, pp. 169-174.
- Mayerson 1995: P. Mayerson, “Aelius Gallus at Cleopatra (Suez) and on the Red Sea”, *GRBS* 36/1, 1995, pp. 17-24, <https://grbs.library.duke.edu/article/view/3101/5789> (accessed 26/01/2021).
- Mayerson 1996a: P. Mayerson, “The Port of Clysma (Suez) in transition from Roman to Arab rule”, *JNES* 55/2, 1996, pp. 119-126.
- Mayerson 1996b: P. Mayerson, “Egeria and Peter the Deacon on the site of Clysma (Suez)”, *JARCE* 33, 1996, pp. 61-64.
- Meurice 2015: C. Meurice, “La découverte archéologique de l'isthme de Suez”, in D. Valbelle, J.-Y. Carrez-Maratray, C. Meurice, *Le canal de Suez et la coopération archéologique dans l'isthme de Suez*, Cairo, IFAO, 2015, pp. 9-17.
- Monge 1809: G. Monge, “Observation sur la fontaine de Moïse”, in *Description de l'Égypte, ou Recueil des observations et des recherches qui ont été faites en Égypte pendant l'expédition de l'armée française, publié par les ordres de sa majesté l'empereur Napoléon le Grand. État moderne. Tome premier*, Paris, Imprimerie nationale, 1809, pp. 409-412, <https://archive.org/details/DescriptiondeLE2Fran/page/1016/mode/2up?q=monge> (accessed 26/01/2021).
- Pieri 2005: D. Pieri, *Le commerce du vin oriental à l'époque byzantine (V^e-VII^e siècles). Le témoignage des amphores en Gaule*, Beirut, IFPO, 2005.
- Power 2012: T. Power, *The Red Sea from Byzantium to the Caliphate, 500-1000 AD*, Cairo/New York, The American University in Cairo Press, 2012.
- Redmount 1995: C.A. Redmount, “The Wadi Tumilat and the ‘Canal of the Pharaohs’”, *JNES* 54/2, 1995, pp. 127-135.

- Rogl 2014: C. Rogl, “Mouldmade relief bowls from Ephesos – The current state of research”, in P.G. Bilde, M.L. Lawall (ed.), *Pottery, peoples and places. Study and interpretation of Late Hellenistic pottery*, Aarhus, Aarhus University Press, 2014, pp. 113-139, https://antikmuseet.au.dk/fileadmin/www.antikmuseet.au.dk/Pontosfiler/BSS_16/BSS16_07_rogl.pdf (accessed 26/01/2021).
- Sartre 1982: M. Sartre (ed.), *Inscriptions grecques et latines de la Syrie* 13/1. *Bostra, nos 9001 à 9472*, Beirut/Paris, IFAPO, 1982.
- Sheehan 2012: P. Sheehan, “The port of Babylon in Egypt”, in D. Agius, J.P. Cooper, A. Trakadas, C. Zazzaro (ed.), *Navigated spaces, connected spaces. Proceedings of Red Sea Project V held at the University of Exeter, 16-19 September 2010*, Oxford, Archaeopress, 2012, pp. 103-115.
- Sidebotham 2002: S.E. Sidebotham, “Late Roman Berenike”, *JARCE* 39, 2002, pp. 217-240.
- Siebert 1978: G. Siebert, *Recherches sur les ateliers de bols à reliefs du Péloponnèse à l'époque hellénistique*, Athens, École française d'Athènes, 1978.
- Sijpesteijn 1963: P.J. Sijpesteijn, “Der ‘Potamos Traianos’”, *Aegyptus* 43, 1963, pp. 70-83.
- Sijpesteijn 2014: P.M. Sijpesteijn, “An early Umayyad papyrus invitation for the Hajj”, *JNES* 73/2, 2014, pp. 179-190.
- Tomber 2008: R. Tomber, *Indo-Roman trade. From pots to pepper*, London, Duckworth, 2008.
- Whitcomb 1988: D.S. Whitcomb, *Aqaba, port of Palestine on the China Sea*, Amman, Al Kutba, 1988, https://oi.uchicago.edu/sites/oi.uchicago.edu/files/uploads/shared/docs/misc_aqaba.pdf (accessed 26/01/2021).
- Whitcomb 2001: D.S. Whitcomb, “Ceramic production at Aqaba in the Early Islamic period”, in E. Villeneuve, P. Watson (ed.), *La céramique byzantine et proto-islamique en Syrie-Jordanie (IV^e-VIII^e siècles apr. J.-C.)*. *Actes du colloque tenu à Amman les 3, 4 et 5 décembre 1994*, Beirut, IFPO, 2001, pp. 297-303.
- Whitehouse 2010: D. Whitehouse, *Islamic glass in the Corning Museum of Glass I. Objects with scratch-engraved and wheel-cut ornament*, Corning/Manchester, The Corning Museum of Glass/Hudson Hills Press, 2010.