

**Stories of Globalisation:
The Red Sea and the Persian Gulf
from Late Prehistory to Early
Modernity**

Selected Papers of Red Sea Project VII

Edited by

Andrea Manzo
Chiara Zazzaro
Diana Joyce de Falco



BRILL

LEIDEN | BOSTON

Contents

Introduction XI

Address of President of ISMEO, Prof. Adriano Rossi, to the Participants
to the 7th Red Sea Conference XVII

Adriano Rossi

Dedication to Maurizio Tosi XX

Bruno Genito

PART 1

Prehistory and Bronze Age

1 Mersa/Wadi Gawasis: Organisation of an Egyptian Bronze Age Harbour
on the Red Sea Coast 3

Kathryn A. Bard and Rodolfo Fattovich

2 The Rock Engravings of Boats of Sinai and the Pharaonic Maritime
Expeditions 13

Patrice Pomey

3 Riverboats and Seagoing Ships: Lexicographical Analysis of Nautical
Terms from the Sources of the Old Kingdom 30

Serena Esposito

4 Marsa Matruh Revisited: Modelling Interaction at a Late Bronze Age
Harbour on the Egyptian Coast 53

Linda Hulin

5 Sorghum Paintings from the Meroitic Cemetery of Berber and Possible
Implications for the Dispersal of the Plant across the Red Sea 65

Alemseged Beldados and Mahmoud S. Bashir

6 Mapping Ancient Production and Trade of Copper in Oman and
Obsidian in Ethiopia 74

Ioana A. Dumitru and Michael Harrower

- 7 Timber-frame Architecture on Both Sides of the Red Sea from the Early First Millennium BCE: Recent Investigations of the German Archaeological Institute in South Arabia and Northern Ethiopia 95
Mike Schnelle
- 8 Bronze Age Reed Boats of Magan and *Magillum* Boats of Meluḥḥa in Cuneiform Literature 119
Danièle Michaux-Colombot
- 9 Imports of Pottery and Glass Vessels in First Millennium CE South Arabia: Signs of Commercial and Cultural Contacts via the Red Sea Trade Routes 154
Sarah Japp

PART 2

3rd Century BCE–7th Century CE

- 10 Overview of Fieldwork at Berenike (Red Sea Coast), Egypt, and in the Eastern Desert: 2011–2015 183
Steven E. Sidebotham
- 11 Exotic Cults in Roman Berenike? An Investigation into Two Temples in the Harbour *Temenos* 225
Joanna K. Rądkowska and Iwona Zych
- 12 The Great Temple of Berenike 246
Martin Hense
- 13 Bead Trade in Roman Ports: A View from the Red Sea Port of Marsa Nakari 264
Joanna Then-Obtuska
- 14 Looking for Leuke Kome 281
Michał Gawlikowski
- 15 The Greeks and the Arabian Coast of the Red Sea 292
Luigi Gallo

- 16 Nautical Archaeology Surveys Near Jeddah, 2012–2013, and Their Connections to the Study of Red Sea Commerce 301
Ralph K. Pedersen
- 17 The Christianisation of Adulis in Light of the Material Evidence 314
Serena Massa and Caterina Giostra
- 18 The Western Indian Ocean Interaction Sphere: Significance of the Red Sea and the Arabian/Persian Gulf Routes from the Mediterranean to India (First Century BCE–Third Century CE) 353
Sunil Gupta
- 19 Beyond the Boundaries of the *Periplus*: The Persian Gulf Route in the Supply to Myos Hormos and Berenike 394
Roberta Tomber
- 20 Foreign Iconographic Elements in South Arabian Art: The Indian Contribution 408
Serena Autiero

PART 3

Modern and Contemporary Age

- 21 Suakin and Al Khandaq: The Influence of a Sea Port on a River Port 445
Ahmed Hussein Abdelrahman Adam and Husna Taha Elatta
- 22 Collateral Roles in Pilgrimage 456
Jacke S. Phillips
- 23 A Life Shaped by the Sea: Maritime Heritage in Suakin 482
Shadia Taha
- 24 Timber for Ships: Considering Wood Supply for Boatbuilding in Jizan and the Farasan Islands, Saudi Arabia 507
Lucy Semaan

Bibliography	537
Index of Modern Names	619
Index of Ancient Names	623
Index of Place Names	628

Nautical Archaeology Surveys Near Jeddah, 2012–2013, and Their Connections to the Study of Red Sea Commerce

Ralph K. Pedersen

Nautical archaeology in the Red Sea is in its formative stages, at least in relation to research in the Mediterranean Sea. While the amount of excavations, and even discoveries, of Mediterranean shipwrecks has outstripped what can be conveniently remembered, there have been perhaps only a few dozen wrecks found in the Red Sea, and seemingly only a few excavations. Three excavations were conducted by Israeli archaeologists in the Sinai in the late 1960s/early 1970s, all of which concerned Ottoman-period sites.¹ Two other excavations were conducted by the Institute of Nautical Archaeology (INA) in the 1990s, one at Sadana Island, Egypt, which is an Ottoman wreck of the eighteenth century,² and the other in Eritrea, which concerned a Byzantine-period wreck filled with ceramics from Aqaba.³

With so few underwater sites studied, there is a paucity of physical evidence of seafaring, at least as far as shipwrecks are concerned, for the maritime routes linking the Mediterranean to the Indian Ocean and the connections across the Red Sea between Asia and Africa. Clearly, more archaeological investigations are necessary to gain a better knowledge base and understanding of the nature and dynamics of the Red Sea lands and cultures as they pertain to nautical endeavours and relations.

It was with this in mind that in 2012, with the support and oversight of the Saudi Commission for Tourism and National Heritage (SCTNH), Philipps-Universität Marburg launched a multi-year survey for harbours and shipwrecks, centred on Jeddah, along a 200 km stretch along the coast of Saudi

-
- 1 A. Raban, "The Shipwreck at Sharm El Sheikh", *Archaeology* 24 (1971): 146–55; A. Raban, "The Mercury Carrier from the Red Sea", *The International Journal of Nautical Archaeology* 2, 1 (1973): 179–183; A. Raban, "The 'Na'amah South' Expedition 1973", *Sefunim* 4 (1973): 33–41.
 - 2 C. Ward, "The Sadana Island Shipwreck: An Eighteenth-Century AD Merchantman off the Red Sea Coast of Egypt", *World Archaeology* 32, 3 (2001): 368–382.
 - 3 R.K. Pedersen, "The Byzantine-Aksumite Period Shipwreck at Black Assarca Island, Eritrea", *Azania* 43 (2008): 77–94.

Arabia (Figure 16.1).⁴ The primary search area was the **Eliza Shoals**, an area of lagoons and reefs lying on the northern approaches to Jeddah and separated from the mainland by a deep channel. A number of modern wrecks marked on British Admiralty charts demonstrate that the shoals are a hazard to shipping even with engines and modern navigation instruments. Using information from these charts, we developed a methodology relying on winds, currents and potential hazards on the reefs to narrow a large search area. This approach yielded quick results, as on the second day of the underwater survey the team discovered what appeared to be an ancient shipwreck.

The **first discovery** was the top of a large amphora, found by our dive master, Gerd Knepel, consisting of the mouth, neck, a handle and part of the shoulder (Figure 16.2). In the nearby reef a large sherd from a ceramic vessel was subsequently found concreted into the coral. Scattered along the reef were a number of stone blocks. A large amphora similar in dimensions to that indicated by the amphora top and the sherds was found concreted into the sea floor. The amphora top was raised for analysis, with the other artefacts left in place.

The top had a wide mouth of 14 cm, and the neck was funnel-shaped. There were a number of decorative bands reaching from the neck to below the handle. A looping handle was set high on the vessel's soft shoulder, leaving a small gap between the upper join and the neck. The reddish colour of the sherd is reminiscent of Roman-period Mediterranean pottery. While petrological analysis has yet to be conducted, and although the top has not been definitely identified,⁵ it appears to date to around the fourth/fifth centuries and to be of Mediterranean origin, as based on prior experience with Roman ceramics. The large body sherd in the reef shared a similar thickness and colour with the amphora top and, given their proximity of only a few metres, it is possible they belonged to the same vessel.

The **second amphora find** was lying on its side and embedded into the sea floor by a hard and heavy concretion (Figure 16.3), which is probably a matrix of dead coral and calcareous deposits. It was impossible to clear away

4 This project was developed by Dr Rupert Brandmeier, an economist working in Saudi Arabia. With the connection to his instructor with the Nautical Archaeology Society, Gerd Knepel, the author served as principal investigator and archaeological director, while Brandmeier served as project manager, and Knepel as dive master. In 2012 we were joined by Prof. Winfried Held and doctoral student Jesper Wangen. In 2013, we were joined by Marburg students Bernhard Klotz, Matthias Link, Eugen Maier and Michaela Reinfeld. Both seasons included personnel from the SCTNH.

5 The top, in its unclean state, appeared to be some form of Dressel 24, possibly *similis* D, but upon cleaning this proved to be not the case. See R.K. Pedersen, "A Preliminary Report on a Coastal and Underwater Survey in the Area of Jeddah, Saudi Arabia", *American Journal of Archaeology* 119, 1 (2015): 125–136, in part. p. 132.

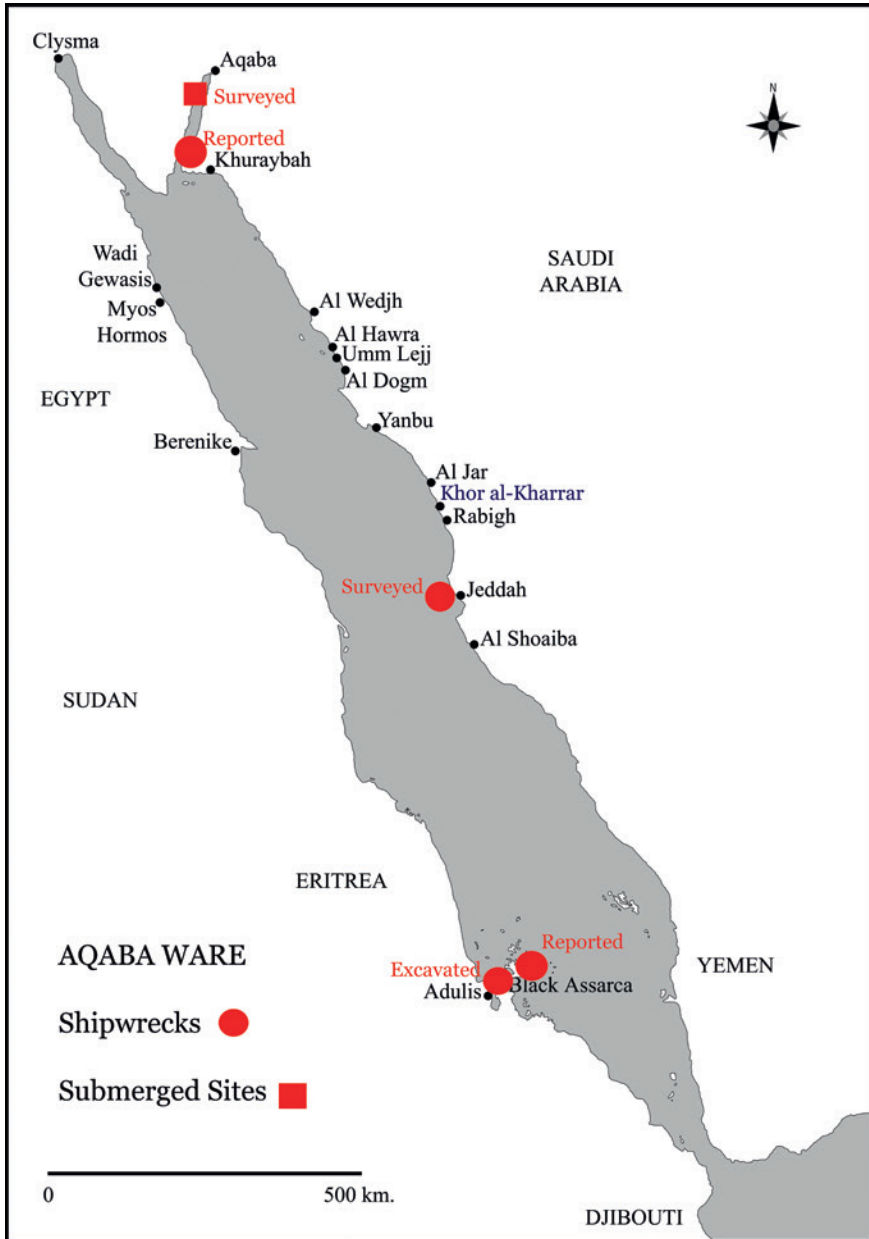


FIGURE 16.1 A map of the Red Sea with ancient sites and modern places
MAP: AUTHOR



FIGURE 16.2 The amphora top, seemingly of circa fourth-century Mediterranean origin
PHOTOGRAPH: AUTHOR

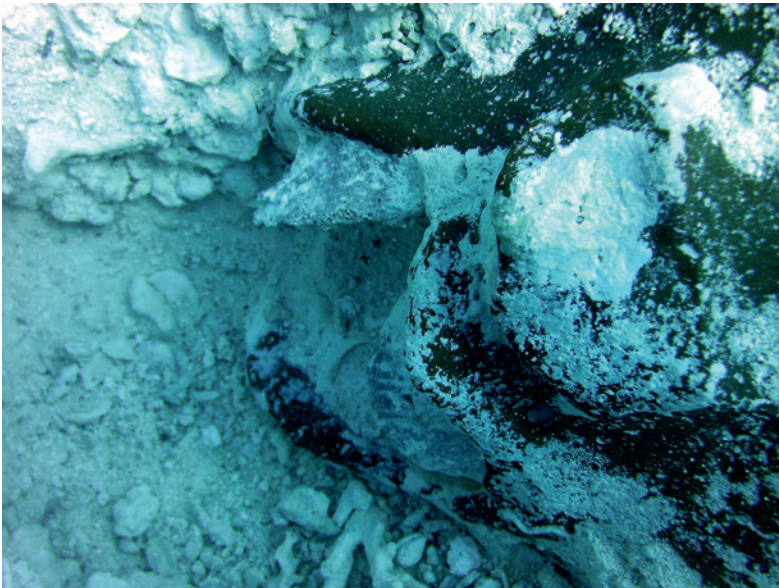


FIGURE 16.3 The neck of the embedded amphora. Note the hole in the neck, ostensibly for the release of gases
PHOTOGRAPH: AUTHOR

this concrete-like substance with the time or tools available and, as the base was completely obscured, a full profile of the jar's shape was not obtainable, although it appeared to have its greatest diameter halfway along its height. If the vessel's body is intact, then the concretion could be as much as 70 cm thick, indicating that freeing the vessel would take three to four days of chiseling, which time did not allow. The neck, however, was able to be mostly exposed. The mouth was missing, but the neck's circumference appeared to be intact. There were two handle stubs, the lower one on the shoulder, and the upper stub adjoining just below the join of the neck and shoulder. This indicated that the handle was set high, much like that of the aforementioned amphora top. There were no decorations on the vessel, but there was a small, well-made hole at the base of the neck and adjacent to the upper stub of the handle. There was no cratering or damage around the exterior of the hole – the interior could not be examined – indicating it was either created before firing or that it was drilled or bored with the utmost and expert care. The hole appears to be a secondary fermentation lock. Such vents were often present in amphoras – either in the stopper or in the neck or upper shoulder – in hotter climates as wine can produce gases from renewed or unfinished fermentation. Without a lock, vessels in hot climates or under movement were apt to shatter from the build-up of gases. Venting holes were often sealed with wet clay that could be either opened to permit the release of gases or allowed to “blow out” on its own.⁶ Venting holes are “commonly found”⁷ on wine amphoras of varying styles and sizes from Egypt – dating from the Bronze Age into the Roman period – as well as in other areas, such as Nubia and the Near East.⁸

The phenomenon of bursting wine vessels was noted by Varro (*De Re Rustica* 1.13.6), wherein he discusses the problem of bursting *dolia* in Spain and jars in Italy, which was a common enough event for Varro to espouse the inclusion of a wine cellar floor sloping to a reservoir:

In those days a steading was praised if it had a good kitchen, roomy stables, and cellars for wine and oil in proportion to the size of the farm,

6 See A. Lucas, “Alcoholic Beverages”, in *Ancient Egyptian Materials and Industries* (2nd edn, London: Edward Arnold, 1934), p. 17. Some dispute the purpose of such a hole as a vent for gases. See Evelien Denecker and Katelijjn Vandorpe, “Sealed Amphora Stoppers and Tradesmen in Greco-Roman Egypt,” *BABESCH: Bulletin Antieke Beschaving* 82, 1 (2007): 117–118.

7 W.Y. Adams, “The Vintage of Nubia,” *Kush* 14 (1966): 262–283, in part. p. 282 n. 108.

8 Examples have been found at Tutankhamen's tomb; the Monastery of Epiphanius at Thebes; Medum near Cairo; and the thirteen-century monastery at Meinarti, Sudan. See Adams 1966, p. 233; Pedersen 2015, p. 133.

with a floor sloping to a reservoir, because often, after the new wine is laid by, not only the butts which they use in Spain but also the jars which are used in Italy are burst by the fermentation of the must.⁹

Secondary fermentation also occurs in the Bible, indicating that the problem was well-known in the Near East. This is vividly seen in Job 32:19, wherein the protagonist states, “Behold, my belly is as new wine which hath no vent; it is ready to burst like new bottles.” Increasing gas pressure in wine vessels is also referred to in three of the Gospels, wherein Jesus states in a parable, “And no man put the new wine into old bottles; else the new wine will burst the bottles, and be spilled, and the bottles shall perish.”¹⁰

Without a fully visible profile of the concreted vented amphora, a geographic origin for it cannot be identified, but the shared characteristic of a fermentation lock with Egyptian and Nubian wine jars demonstrates an affinity with African sources,¹¹ as well as with Near Eastern ones. For example, Late Roman amphoras in the southern Levant can include a venting hole. A number of vessels from the shipwreck Dor D contained holes on their shoulders, albeit they were sealed with lead, a clear indication of reuse at their time of loss.¹² Palestinian LR4 and LR5 jars can also contain venting holes on the shoulder.¹³

1 The Survey in 2013

Continuing our survey in September 2013, a return to the site located the previous year resulted in the discovery of yet **another large amphora fragment** (Figure 16.4). Found by Brandmeier at the base of the reef and several metres from the previous finds, the sherd is similar in size and characteristics to the others, having a handle of similarly high and looping form. To protect the sherd, as such finds tend to be looted or scavenged once discovered, it was

9 Varro, *De Re Rustica*, trans. William Davis Hooper (Cambridge, Mass.: Harvard University Press, 1934).

10 Luke 5:37, King James version. The same parable occurs in Matthew 9:17 and Mark 2:22.

11 Fayyum and the Delta were major wine-producing areas, and several vintages were produced there. See Adams 1966, p. 280, and Lucas 1934, pp. 20–21.

12 S.A. Kingsley, “The Dor D Shipwreck and Holy Land Wine Trade”, *The International Journal of Nautical Archaeology* 32, 1 (2003): 88.

13 S.A. Kingsley, “Late Antique Trade: Research Methodologies and Field Practices”, in *Theory and Practice in Late Antique Archaeology*, ed. L. Lavan and W. Bowden (Leiden: Brill, 2003), p. 128.



FIGURE 16.4 Rupert Brandmeier records the position of the large amphora fragment found in 2013
PHOTOGRAPH: AUTHOR

excavated after plotting its position and subsequently brought to the surface. It, like the amphora top of 2012, was sent for conservation and acquisition to the National Museum in Riyadh. The sherd consisted of about one-third of the body, one handle and the neck opening, with the neck itself completely missing. The fabric was reddish when wet, as with the amphora top. A search of the area revealed no other pieces of this vessel.

This collection of ceramics, representing amphoras all similar in size and sharing some stylistic characteristics, along with the finding of the stone blocks, indicates that some kind of maritime accident occurred at the reef. Whether the ship sank, split open or overturned and dumped its cargo is not known. It is probable that more artefacts lie within the reef or in the concrete-like matrix of the sea floor. Further investigation is needed to determine where the main body of the wreck or artefacts rests.

Also in the 2013 season, a second site was found. Discovered by Marburg student Matthias Link, this site contained approximately two dozen broken ceramic vessels lying in the surface matrix of the sea floor. While a number of different types of vessels appear to be present – ostensibly oblong and globular ones, although this awaits confirmation by further examination – there are amphora fragments of the type known as “Aqaba amphoras”¹⁴ (Figure 16.5). This type is characterised by a conical shape with a surface that is rilled in a spiral reaching from toe to neck¹⁵ with a base “generally buttoned”.¹⁶

The discovery in the mid-1990s of a seventh-century kiln in Aqaba containing the amphora type¹⁷ changed our view of the origin of these vessels. Prior to the kiln discovery their production place was unknown, with finds of them attributed to Alexandria or northern Egypt.¹⁸ Other potential origins pointed

14 They are also known as “Ayla-Axum amphoras” after their erstwhile northernmost and southernmost find spots. They have also been called “Aila amphoras”. See T. Power, “The Red Sea Region During the ‘Long’ Late Antiquity (AD 500–1000)”, PhD Thesis, Oxford University, 2010, p. 62. The distinction between “Ayla” and “Aila” is that the former is used for the Roman period, and the latter for the Byzantine era.

15 As observed on the amphoras at Black Assarca. Pedersen 2008, p. 82. The spiral is added on the potter’s wheel. As the conical vessels are thrown in an upper and lower part – which is a natural weak point where the jars tend to break, as seen in numerous examples at Black Assarca – the spiraling at the join is added by hand, sometimes crudely but usually with some skill.

16 R.F. Wilding and S. Munro-Hay, *Excavations at Aksum: An Account of Research at the Ancient Ethiopian Capital Directed in 1972–4 by the Late Dr. Neville Chittick* (Nairobi: British Institute in East Africa, 1989), p. 314.

17 A. Melkawi, A. Khaireh and D.S. Whitcomb, “The Excavation of Two Seventh Century Pottery Kilns at Aqaba”, *Annual of the Department of Antiquities of Jordan* 38 (1994): 447–468.

18 Wilding and Munro-Hay 1989, p. 314.



FIGURE 16.5 An amphora fragment from the shipwreck site found in 2013. Its shape and style are reminiscent of those from Black Assarca Island and originating in Byzantine Aila
PHOTOGRAPH: AUTHOR

to Elephantine Island, where similar types were found.¹⁹ In addition, finds at other sites, such as Adulis,²⁰ Aksum²¹ and Matara,²² brought about the idea of multiple production sites. A recent petrological study by Raith et al. of sherds of the amphora type indicates, however, that based on the samples tested the

-
- 19 R. Gempeler, *Elephantine X: Die Keramik Römischer Bis Fruharabischer Zeit* (Mainz: Philipp von Zabern, 1992), p. 191.
 20 R. Paribeni, "Ricerche nel luogo dell'antica Adulis", *Monumenti Antichi* 18 (1907), coll. 437–572, in part. p. 551.
 21 D.W. Phillipson, *Archaeology at Aksum, Ethiopia, 1993–7* (London: British Institute in Eastern Africa, 2000), pp. 394–395.
 22 F. Anfray, *Les Anciens Ethiopiens: Siècles d'histoire* (Paris: Armand Colin, 1990), p. 118.

jars originate only in Aqaba.²³ Thus the findings of Aqaba amphoras around the Red Sea may not be indicative of a widespread production of this ceramic form – although the rilling appears to be of a general later Roman decoration – but of one specific production in the Aqaba area. As such, they are a hallmark and a prime indicator of the trade flowing south from Aila in the mid-first millennium.

Find spots of Aqaba amphoras and related ceramics range throughout the Red Sea, along the south Arabian coast and into India, particularly in the Gujarat area,²⁴ testifying to the extent of the maritime commerce, either direct or indirect, of Aila. Some amphora finds occur north of Aqaba, in the old Nabataean heartland, and at least one example of an Aqaba amphora comes from the Mediterranean, found in the late sixth-century shipwreck at Iskandil Burnu, Turkey.²⁵ While there are no solid, absolute dates for the amphora type, perhaps the best dating comes from Iskandil Burnu via relative dating to various other amphora types, fusiform jars and, in particular, closed casseroles that have strong parallels to those of Byzantine Palestine in the fifth/sixth centuries.²⁶ Another good relative date derives from Berenike, Egypt, where examples were found in contexts dating to circa 400 CE.²⁷ Additionally, some stratified examples at Aksum yield a date range from the fifth to the seventh centuries, and finds at Matara indicate contexts of the third through the seventh centuries.²⁸ Examples found in secondary contexts in the “Stone Building” at Zafar, which was destroyed by an earthquake c. 363 and subsequently in-filled, have a “suggested dating bracket” for c. 300 to 540 CE.²⁹ Perhaps the best chance for finding absolute dates for the amphoras will be from shipwrecks, as they can contain coins from a concise period correlating to the shipment, as has been found, for example, with the seventh-century shipwreck at Yassiada,

23 M.M. Raith et al., “The View from Zafar: An Archaeometric Study of the 'Aqaba Pottery Complex and Its Distribution in the 1st Millennium CE”, *Zeitschrift Für Orient: Archäologie* 6 (2013): 318–348.

24 Ibid., fig. 1.

25 M. Lloyd, *A Byzantine Shipwreck at Iskandil Burnu, Turkey: Preliminary Report*, MA Thesis, Texas A&M University, 1984, pp. 29–31; M. Lloyd, “The Shipwreck at Iskandil Burnu,” *INA Newsletter* 12, 3 (1985): 4–5, in part. p. 5.

26 Lloyd 1984, p. 51.

27 J.W. Hayes, “The Pottery”, in *Berenike 1995: Preliminary Report of the Excavations at Berenike (Egyptian Red Sea Coast) and Survey of the Eastern Desert*, ed. S.E. Sidebotham and W. Wendrich (Leiden: School of Asian, African, and Amerindian Studies, 1996), pp. 159–161.

28 Wilding and Munro-Hay 1989, p. 314; Anfray 1990a, p. 118; Phillipson 2000, p. 394.

29 Raith et al. 2013, p. 324.

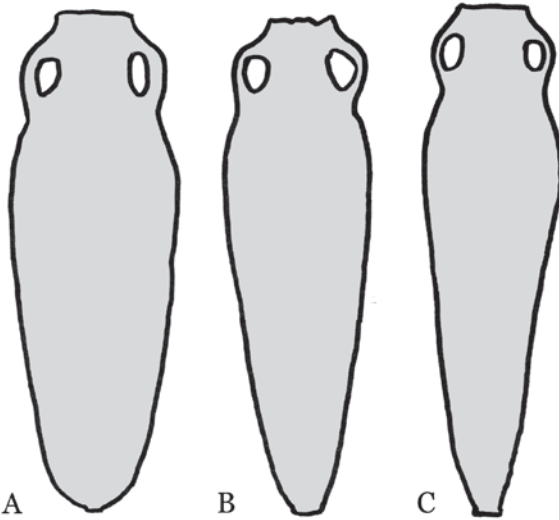


FIGURE 16.6

A comparison of the varying shapes of Aqaba amphoras.

A. Zafar (after www.wikiwand.com/en/Zafar,_Yemen), B. Black Assarca, C. Aksum (Munro-Hay, p. 314 fig. 16.469)

Turkey,³⁰ and the eleventh-century wreck at Serçe Limani, where coins as well as weights secure a date for the site.³¹

The Aqaba amphora forms found in the various sites vary from bulbous to tapering (Figure 16.6). The form found on our Jeddah survey in 2013 is tapered, but less so than some from other sites, such as ones from Aksum.³² The Jeddah amphora find is similar to those from the shipwreck at Black Assarca Island, Eritrea, perhaps indicating a similar date or producer. The Jeddah form is apparently without a toe button, a common enough variant as toe button existence as well as size and shape vary, seemingly without relation to the bulbousness or taper of the body.³³ It is not known whether the spectrum of Aqaba amphora forms, from bulbous to tapered, represents differences in date or not. It is also not known why the form exhibits these changes.

Amphoras that come to a base with a spike or narrow toe are believed to be better suited for stowing in ships as this enables them to be nested.³⁴ This

30 J.M. Fagerlie, "The Coins", in *Yassi Ada: A Seventh-Century Byzantine Shipwreck*, ed. G.F. Bass and F.H. van Doorninck Jr (College Station: Texas A&M University Press, 1982), pp. 145–154.

31 G.F. Bass and F.H. Van Doorninck, "An 11th Century Shipwreck at Serçe Liman, Turkey", *International Journal of Nautical Archaeology* 7, 2 (1978):119–132, in part. p. 126.

32 See e.g., Wilding and Munro-Hay 1989, p. 314.

33 Buttonless Aqaba amphoras have been found in the recent Adulis excavations. See C. Mandelli et al., "Late Roman Amphorae from Adulis", Poster presented at the Red Sea VII Conference, Napoli and Procida 26–30 May 2015.

34 R. Tomber, "Beyond Western India: The Evidence from Imported Amphorae", in *Migration, Trade and Peoples*, pt 1: *Indian Ocean Commerce and the Archaeology of Western India*,

stowage pattern has been observed on a number of Mediterranean wrecks, such as the Roman wine carrier at Giens, France; the Albenga wreck, Italy;³⁵ and the Hellenistic shipwreck at Kyrenia,³⁶ to name just a few, where wine amphoras remained stowed in their original nested positions despite the ships' violent ends. It is possible that the changing form of Aqaba amphoras reflects a need or desire to create a better nesting pattern as demand for Aqaba goods increased over the Late Roman era. As the quality of manufacture and design of the amphoras does not seem to degrade over time, this seems a likely explanation. cursory examination of the type shows that the Berenike amphoras dating to c. 400 are more bulbous, and that the late sixth-century example from Iskandil Burnu is tapered, while the shape of those at Black Assarca Island falls somewhere in between. The example from the Jeddah wreck is perhaps too fragmentary to make a strong determination at the moment, but it appears to be not too different from the form seen at Black Assarca Island. We do, of course, need better dating of the amphora finds to refine this hypothesis about amphora shape as a function of usage over time.

2 Summary

In addition to the three shipwreck sites discussed here, archaeological investigations have revealed other submerged sites, particularly where Aqaba amphoras and ceramics are concerned. One of these sites is an apparent Aqaba amphora wreck in the Dahlak archipelago. Another is a shipwreck in the Gulf of Aqaba carrying a number of costrels of the type originating in Byzantine Aila. There is also a submerged site at Jazirat Fara'un, along the Sinai coast, containing Aqaba amphoras, pilgrim flasks and other ceramics. This site, investigated by a joint British-Israeli team in the late 1960s/early 1970s is apparently a large dump between the island and mainland, indicating the usage of the island as a port in late antiquity.³⁷

ed. R. Tomber, L. Blue and S. Abraham (London: The British Association for South Asian Studies, 2009), pp. 42–57, in part. p. 45.

35 L. Casson, *Ships and Seamanship in the Ancient World* (Princeton, NJ: Princeton University Press, 1971), p. 176 n. 46. See also P. Throckmorton, *The Sea Remembers* (London: Mitchell Beazley, 1987), p. 67, for an illustration of the nested amphora.

36 M. Katzev, "The Kyrenia Ship", in *A History of Seafaring Based on Underwater Archaeology*, ed. G.F. Bass (London: Thames & Hudson, 1972), pp. 62–63.

37 A. Flinder, "The Island of Jezirat Fara'Un: Its Ancient Harbour, Anchorage and Marine Defence Installations", *International Journal of Nautical Archaeology* 6, 2 (1977): 127–139, in part. p. 131 figs. 5A and B.

The small but growing corpus of Red Sea shipwrecks from antiquity is demonstrative of the trade of goods from the Roman Near East to the Red Sea lands and beyond. Perhaps more important, the discovery of the two shipwrecks near Jeddah by our team is indicative of hitherto unknown or little suspected maritime trading routes and sailing activities along a coast noted for its hostility, both environmental and human. Why these two ships came to grief is apparent: they hit the reef. Why these two ships, possibly of differing origin and times, were in the Jeddah area cannot be known, at least for now, as no settlements of these periods are known to exist there.³⁸ Nevertheless their presence indicates that we must now consider sailing routes along the Arabian coast in conjunction with those of the African littoral of the Red Sea. The open-water sea lanes, as well as the intercoastal waterway between the reefs and the Arabian mainland, must have been in use in antiquity as they have been into the present era. Indeed, the Qurʾān (6:97; 10:22; 23:22) notes that the pre-Islamic peoples of the central Arabian coast sailed on the sea, both by day and by night.³⁹ Continuing studies and examinations of the coast and its underwater areas can, and should, reveal much about ancient maritime endeavours along the Arabian coast.

38 A Roman settlement existed in the Farasan Islands in the second century CE, but with the island group lying over 600 km south of Jeddah a connection with either wreck at Jeddah should not be implied other than as an example of Roman activity on the Arabian coast. See J. Cooper and C. Zazzaro, "The Farasan Islands, Saudi Arabia: Towards a Chronology of Settlement", *Arabian Archaeology and Epigraphy* 25, 2 (2014): 147–174, in part. p. 147.

39 P. Crone, "How Did the Quranic Pagans Make a Living?", *Bulletin of the School of Oriental and African Studies* 68, 3 (2005): 387–399, in part. p. 395.