

The port of Al Baleed (southern Oman), the trade in frankincense and its coveted treasures



Abstract: Myrrh, dragon's blood, aloe and madder, and the most important—frankincense and Arabian horses—passed through the strategically located port of Al Baleed in the southernmost region of the Sultanate of Oman on the Arabian Peninsula. Known as Zafar in medieval times, this ancient port with a long history going back to the Bronze Age reached a peak in its development as a hub of the medieval international trade on the Indian Ocean when many commodities were exported from the region or passed through the port. The medieval frankincense trade is barely studied despite its importance and the great incomes that it generated. This general overview of the site of Al-Baleed, important for its geographic location, climate, availability of water and abundance of fodder, will highlight the port's importance in the frankincense trade, mainly in relation to the markets of the Far East, against the background of the other coveted treasures from the region of Dhofar.

Keywords: Al Baleed, Dhofar, frankincense, Indian Ocean trade, resins

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The ancient port of Al Baleed, known in medieval times as Zafar, lies on the southern coast of the Arabian peninsula, in the southernmost region of the Sultanate of Oman. With time, the whole region, today the Governorate of Dhofar, took its name from the city. A number of factors contributed to the area's prosperity: its geographical location practically in the center of the southern coast of the Arabian Peninsula; its climate, affected by the

monsoon—locally called Khareef—from the end of June to the end of September; and, finally, the availability of water¹ and, so far, the abundance of fodder.

Inscribed on the UNESCO World Heritage list in 2000, Al Baleed has now become an important element of an archaeological park, which includes also the Museum of the Frankincense Land,² a botanical garden and walking paths for enjoying the lagoon and its surroundings.

THE SITE OF AL BALEED IN HISTORY

The long history of Al Baleed goes back to the Bronze Age. In the 3rd millennium BCE, the area, now occupied by the impressive ruins of a large city, was a mangrove habitat, a place of possibly seasonal migrations attested by a huge number of lithic tools (tabular flint scrapers, snapped blades and notched flakes) found dispersed all over the site (Newton and Zarins 2017: 22). The Iron Age is evidenced by microlithic flint tools (borers, bladelets, flakes) and cores (Newton and Zarins 2017: 23), and a possible Classical and post-Classical/late antique occupation has been tentatively recognized in layers below some buildings close to the city wall of Al Baleed. Pending full verification, some scholars have argued that this presence should be connected with the abandonment, in the 5th century CE, of the harbor of Sumhuram on the eastern bank of Khor Rori, barely 35 km east of Al Baleed (Phillips 1972: 113; Albright 1982: 51–52).

Ongoing excavations of the fortified castle Husn Al Baleed have identified six occupational phases from the medieval period (Pavan forthcoming). The dating is based on a study of masonry techniques, material culture (pottery and small finds) and earlier discoveries made at the site (Costa 1981; Albright 1982; Jansen et al. 2015; Newton and Zarins 2017).

The earliest urban occupational phase, which is dated to the Abbasid period, has not been reached yet in the current excavation, whereas the sixth and last occupational phase falls between the 17th century and the 18th/beginning of the 19th.

The excavations, conducted at Husn Al Baleed since April 2016 by the Office of the Adviser H.E. Abdulaziz Al-Rowas to His Majesty the Sultan for Cultural Affairs under the direction of the author, have provided new and interesting information about the last occupational period at the site, moving the date of the

1 The settlement is located at the [outlet](#) of a large drainage system, namely Wadi Garziz, where a wide lagoon currently closed by a sandbar had formed in the area of the site, .

2 On this see also the website www.omanwhs.gov.om, edited by the Office of the Adviser to His Majesty the Sultan for Cultural Affairs.

ultimate decline and abandonment of the structures from 1660/1700 (Newton and Zarins 2017: 67) to the end of the 1700s and even the beginning of the 1800s.

Nevertheless, the decline of Al Baleed started earlier, in the 16th century. It is attributed, on the one hand, to Portuguese control of the Indian Ocean trade and their presence in the southern part of the Arabian peninsula. The Portuguese never conquered Zafar, despite firing their cannons upon the city. Fernando da Noronha, son of Alfonso, Viceroy of Goa, made a desperate but unsuccessful attempt to subdue Zafar in 1553 and the expedition ended in a disaster (Miles 1919: 511). Various dramatic, natural and atmospheric phenomena, such as siltation of the lagoon and a huge cyclone that ravaged the coast of Dhofar in the 17th century, contributed simultaneously to the decline of the city already weakened by the politics of the Kathiri Dynasty which ruled Zafar during the

15th and 16th centuries. Indeed, the ban on trade in horses, frankincense and fish oil from Zafar, enforced by the Kathiri king Badr Bin Tuwayriq (whose death is dated between 1564 and 1570), with the intention of fostering the growth of Kathiri centers in Hadramawt (eastern Yemen), was the beginning of the end for Al Baleed.

Before this came to pass, however, the city enjoyed its greatest period of prosperity and maximum expansion in the times of the Rasulid Dynasty (1278–1420). Its importance in this period is echoed in various sources, most importantly, by Marco Polo and Ibn Battuta, who both mentioned the site in their writings from the 13th through 15th centuries. Not the least, valuable information about taxable items, levies and the commodities exported and imported via the most important ports under Rasulid control is given in documents of the Rasulid court. Evidence of the turnover and goods pass-



Fig. 1. Site of Al Baleed from the air (Photo B. Isenberger for the Office of the Adviser to HM the Sultan for Cultural Affairs)

3 For a general overview of the sources for the Rasulid period see al-Shamrookh 1996.

ing through Zafar can be found in the *Kitab Al-Irtifa'*, The Book of Revenues (Jazim 2008), a manuscript dated to 1296, which affirms that the three main ports for income at the time were Aden, Zafar and Al-Shihr. More than a century later a different manuscript, dated

to 1412, *Mulakhhhas al-Fitan* (Smith 2006: 40), again listed tax-generated revenue in gold dinars: 1,470,000 for Aden, which was the most important hub, 200,000 for Al-Shihr mentioned in third place, and 420,000 for Zafar, confirming its prominence in the region.

THE SETTLEMENT

The roughly rectangular plan of the settlement of Al Baleed covers an area of 64 hectares [Fig. 1]. It was surrounded on three sides by a natural lagoon opening on the south onto the Indian Ocean. The lagoon was man-managed throughout the long occupation of the city. Three main areas can be identified: the western district with the most representative buildings (Husn, Grand Mosque, Customs House), a central section with private buildings and a number of mosques, and the eastern part, which was probably used for activities such as stabling horses, stocking frankincense, and drying sardines.

Considering the huge dimensions of the site and the extent of the archaeological park in existence today, attention over the last few years has concentrated on some important city landmarks. The Grand Mosque was first [Fig. 2], initially excavated by Paolo Costa (1981: 133–136) and later by Michael Jansen (Jansen et al. 2015: 51–92), who started the process of visualization of the ruins. After this, Juris Zarins and Lynne Newton focused on some of the most important areas, achieving important results regarding general history of the site and its development. They cleared the entire southern side of the



Fig. 2. The Grand Mosque (Photo Office of the Adviser to HM the Sultan for Cultural Affairs)

city and discovered a long wall with 17 towers, long breakwaters and four gates, which were later consolidated (Newton and Zarins 2017: 76–87). A number of wooden posts, sunk into the mud beneath the sand and possibly used in connection with a dry dock for ship repairs, are still visible in the area of the jetty near the Southeast Gate. Of note are also some huge carved stone blocks with a couple of cut holes each; they could have been used to stabilize the wooden posts of a loading jetty [Fig. 3].

HUSN AL BALEED

Husn Al Baleed, a fortified castle which stands in the northwestern corner of the city [Fig. 4 top], is the city's chief landmark. It is a massive square structure measuring about 60 m to the side, with a northern extension that was initially excavated by Jansen in 1997 (Jansen et al. 2015: 162–170) and later also by Zarins between 2007 and 2008 (Zarins and Newton 2012: 48–49). A plastered room and drains with stone pipes found in the area are believed by the excavators to have been part of a bath-



Fig. 3. Eastern breakwater (Photo B. Isenberger for the Office of the Adviser to HM the Sultan for Cultural Affairs)



Fig. 4. Husn Al Baleed: top, aerial view; bottom, eastern side (Aerial photo A. Massa for the Office of the Adviser to HM the Sultan for Cultural Affairs)

room. Ongoing excavations led to the discovery of an extension also along the eastern side, outside the most recent and still standing curtain wall. This extension has been interpreted as the stables [Fig. 4 bottom]. This area, and possibly also parts of the northern one, disappeared during the 16th century when the fortification system was expanded to include bastions, towers, buttresses and casemates.

Husn Al Baleed is oriented in accordance with the cardinal points and covers an area of almost 5000 m² at an elevation of about 13 m asl. The building was multi-storied and it is possible that in the last phases it had four or even five levels with an open court with a well in the center. The latest phase was the result of periodic rebuilding and modifications, which are evidenced in the different construction

techniques that have been recognized, including at least five different masonry techniques. The mapping of these different features, currently underway, will help to understand how the site was modified and when. The use of wood in the form of tree trunks from around the site or reused ship planks, most likely for static purposes, is attested already in the first building phase, which consists of megalithic blocks. Beams were usually cut from branches of local hardwood. The preferred wood species were *sidr* (*Ziziphus spina-christi*), *sums* (*Acacia tortilis*) and, above all, *metan*, to be identified with *Olea europea*, well known for its resilience. These kinds of wood are still used in traditional architecture (Jansen et al. 2015: 373). Coconut wood, despite its lesser durability, was employed as well for its flexibility.

POTTERY AND SMALL FINDS

Pottery from different parts of the world found at the site is useful in tracing trade routes and highlights the central role of the port of Zafar in international commerce. High-quality items, as well as blue and white porcelain vessels and the so-called Longquan celadon have been discovered in great number, as likewise the lower-quality large stoneware jars from the Far East (Martaban wares). A rich collection of Indian ceramics has also been found, along with pottery from Persia and the nearer regions of Yemen and north Oman.

Chronological markers include Late Sasanian/Abbasid Ware (7th–9th centuries) identified by Zarins for the first occupational phase, and imports from the

Far East, currently being studied by Chiara Visconti from the University of Naples “l’Orientale”, for the latest period. The occurrence of Red Enamelled Ware, also known as Famille Rose, dated between the 16th and 18th centuries, but mainly the discovery of a number of Batavia vessels belonging to the 18th/19th century, confirm not only a continuity of occupation, but also a certain degree of wealth demonstrated by the demand for prestigious wares. A recent discovery of a figurative group in Qingbai Ware [Fig. 5], from the end of 17th/beginning of the 18th century, manufactured for foreign markets,⁴ is further evidence of this demand for luxury items in the late phase. In turn, the Bahla

4 I am very grateful to Dr. Roberto Ciarla, Museum of Civilizations “G. Tucci”, Oriental Art Collection, Rome, for the identification of the Qingbai group and information about it.



Fig. 5. Qingbai figural group (Photo A. Pavan for the Office of the Adviser to HM the Sultan for Cultural Affairs)



Fig. 6. Bahla Ware (top) and Hayze Ware (Photos A. Pavan for the Office of the Adviser to HM the Sultan for Cultural Affairs)

Ware and Haize Ware ceramics [Fig. 6], now studied by Agnese Fusaro from the University of Barcelona, were recorded in the same archaeological contexts as the Far Eastern imports, attesting to medium-range commerce functioning through the final days of the town.

Hundreds of glass bracelets and a large quantity of glass vessels have also been discovered. Recently, a number of enameled glass fragments were found at Husn Al Baleed, together with numerous objects attesting to everyday life at the site. Cannonballs of metal and stone, mangonels (type of catapult) and weaponry (including arrowheads and a notable

archer's ring) have been found in consistent numbers. The most recent discovery is that of a block of raw sulphur [Fig. 7], found in association with charcoal and bitumen deposits; it would have been used for gunpowder production.

Of note among the finds are also numerous ship timbers used again as architectural components (lintels, shelving and ceiling beams), or incorporated in the masonry structure, currently studied by Alessandro Ghidoni (for earlier studies on the topic see Belfioretti and Vosmer 2010). Indirectly, these finds have shed new light on ship construction in the period from the 10th to the 15th centuries.



Fig. 7. Husn Al Baleed, Room A33 with a block of raw sulphur found in place (circled in white) (Photo A.Pavan for the Office of the Adviser to HM the Sultan for Cultural Affairs)

AL BALEED AND ITS COVETED TREASURES

The prosperity of Al Baleed depended on the maritime trade. A guaranteed income was afforded by the variety of exported goods as well as commodities passing through, on which taxes were levied. A great number of materials (raw, partly worked and ready-made) left the harbor for different destinations overseas, while others were directed to the Yemeni port of Aden for redistribution. No details are available on what was actually produced in the Zafar area and what was merely dispatched from the port, but a number of Arab, Chinese and Portuguese sources mention (directly or indirectly) commodities originating from the region of Dhofar which “abounded in everything” according to Ludovico di Varthema (1928: 38) writing at the beginning of 1500.

What were then the coveted treasures of Al Baleed?

FRANKINCENSE

Frankincense is the most famous product of the region, collected and traded for millennia. Dhofar, the southern region of Oman, is one of the very few places in the world where *Boswellia sacra*, the source of the best quality of frankincense, grows. This precious gum begun to be traded in the Bronze Age, but it was only in the 1st century CE that frankincense, “food for gods and perfume of emperors”, began to be exported in massive quantities. With the peaking long distance trade between the Mediterranean and the Indian Ocean came movement of people and with them a dissemination of ideas, beliefs, skills and technology. One of the main centers of this trade in pre-Islamic times was

Sumhuram on the left bank of Khor Rori, 35 km east of Al Baleed (Avanzini 2011; 2017). In mediaeval times, this trade was controlled by the two centers of Zafar and Mirbat, the latter 65 km off to the east. At this time, beside being exported, frankincense was also used extensively in local religious worship, domestic fumigations and for perfuming garments (Groom 1981: 16), in the same ways that it is still used today.

While there is extensive literature on the frankincense trade between the end of the 1st millennium BCE and the early centuries CE, the same cannot be said for Islamic times. It has been studied only marginally save for some recent and interesting papers by Sterenn Le Maguer (2015; 2016). One explanation for this lack of research was the assumption that the trade in aromatics collapsed because of Christianization (on this see Le Maguer 2015: 175–177). However, it has been shown to be still very lucrative in medieval times. Marco Polo, in Chapter 41 of his *Travels*, mentions incomes of 400% made on frankincense bought by the governor of Aden for 10 gold ducats per quintal and sold to the merchants for 40. Nonetheless, markets changed and India and China became the new frontiers of the trade. To have an idea of the amount of frankincense imported to the Far East in mediaeval times, suffice it to say that in 1077 more than 174 tons of resin were imported to Canton alone, which, at that time, was the most important Chinese market (Zhang 1983: 101). In India, frankincense was a component of medications, while in China

it became also part of Buddhist rituals as confirmed by the finding of *Boswellia* resin during the excavation of a temple in Nankin, dated to the Song Dynasty (960–1127) (Le Maguer 2016: 143).

Sources confirm that Zafar played a primary role in the frankincense trade with the Far East. Interesting information on this topic comes from Chinese sources, in particular the *Records of foreign Nations*, or *Records of foreign People*, a book by Zhao Rugua (Chao Ju-Kua), a member of the Chinese royal family, involved as a superintendent at the market of Quanzhou around 1225, in the times of the Southern Song dynasty. Zafar is mentioned in this book under the name of Nu-Fa on the grounds of information exchanged with foreign merchants. It appears together with Mirbat (Ma-lo-pa)⁵ and Shihr (Shi-Hi)⁶ as one of the locations where the best quality of frankincense, called “milk incense”, is found (Chau 1966: 195).

Relations between China and Zafar are moreover confirmed at the site by numerous Chinese artifacts, including a number of coins that represent issues of the Song Dynasty.⁷

Strong relations characterized also the Ming period (1368–1644). The famous Admiral Zheng-He, an eunuch of the Yongle Emperor (1403–1424), was the commander of a huge fleet during a num-

ber of voyages to the Indian Ocean and he mentions landing at Zafar. Between 1421 and 1436 there was a number of visits and revisits by delegations from both countries, exchanging credentials and gifts (Zhang 1983: 106). The goods recorded as gifts are reliable evidence of the most prestigious materials traded between southern Arabia and China. Frankincense is always the first product mentioned on these lists.

Evidence of exchanges between the region of Oman and China is found also in a contemporary book, *The overall survey of the Ocean's shore*, written by Ma Huan in 1433 (Huan 1970). Mentioned at the end of the chapter devoted to the country of Zufaer (Zafar) are the regional products requested by the Chinese market and the goods exchanged by the two delegations. Again, frankincense is the main commodity among a number of coveted treasures which the region was rich in: myrrh, storax oil, benzoin, dragon's blood (Huan 1970: 152–153). Ostriches are mentioned here as a gift highly appreciated by the Chinese court in exchange for gold, porcelain and silk.

HORSES

Less famous, but more lucrative was the trade in Arabian horses, which represented the most important source of

5 Ma-lo-pa is spelled differently and identified either as Mirbat/Merbat (Chau 1966: 25, 121, 196), a location 65 km east of Zafar, or as the Mahra region in eastern Yemen (Zhang 1983: 101).

6 Shihe is identified with the site of Al-Shihr, also Shihr Luban, that is, Shihr of the Frankincense (Chau 1966: 116, 196, 221, 261; Zhang 1983: 101).

7 There are 41 Chinese coins in the corpus of Far Eastern coins from Al Baleed. A few others were discovered during the excavations of Costa and studied by Nicholas M. Lowick (Department of Coins and Medals, British Museum), but they have not been published (Costa 1981: 140, note 2). They have been attributed to the Northern Song Dynasty. See also Cribb and Potts 1996.

income for medieval Zafar. This trade was closely connected with inland commerce, which involved many people from the interior of Arabia and implied a sound organization of the activity (Zarins and Newton 2017). All the Rasulids ports of southern Arabia were involved in this trade as Marco Polo recalls in his *Travels*: “The merchants of Dofar, Soer and Aden collect great number of destriers and other horses... they bring horse by sea aboard ships” (Chakravarti 1991: 172). The Venetian then added: “there is a great traffic of shipping between this and India, and merchants take hence great number of Arab horses to that market, making great profit thereby” (Chakravarti 1991: 172). In India at the time there was a great demand for good horses, cavalry having become an important element of the Indian army. War horses were a rare commodity, and costly at that, to be imported by sea in view of the insecurity of overland routes. This lucrative activity generated incredible incomes for the government because horses in their thousands were sent to the royal stables in Delhi or to the centers on the Malabar coast.

Connected with the horse trade was also the trade in dried sardines were used as animal fodder. The 13th-century writer Ibn Mujawir was the first to mention a regional custom of feeding riding animals with dried fish (Smith 1985: 85). Some years later, Ibn Battuta feigned surprise by this habit, noting at the same time that dried sardines were perfect fodder for horses during the long sea crossings enabling them to reach India and even China.

OTHER COVETED TREASURES

Several other products were grown or produced in the region of Zafar, also because of the very rich plant biodiversity of the area, which was and still is a perfect habitat for a number of aromatic and medicinal plants, as well as exotic fauna, although now almost completely extinct. Resins and aromatics such as myrrh, benzoin, liquid storax, dragon’s blood; plants like aloes and putchuck, pigments like madder and substances of animal origin such as ambergris originated from the region of Dhofar. Animals like ostriches, leopards and sharks were present in the territory and were exported mainly to the Far East, either alive or ready for consumption as food.

Resins

Myrrh (*Commiphora* spp.) is frequently listed among the exports from the region of Dhofar. In the Rasulid texts, it appears as one of the most important items collected and distributed through the ports of Al-Shihr, Zafar and Mirbat (al-Shamrookh 1996). The Chinese market highly appreciated this gum (Huan 1970: 152) mainly for medicinal purposes (Chau 1966: 197) owing to its antibacterial, astringent and antiseptic properties. Its potential for medicating a whole range of diseases is commonly accepted. In the Dhofar region, *Commiphora* was also used traditionally as a dye for cotton fabrics, as a cosmetic and to protect the newborn and their mothers (Miller and Morris 1988: 82–87, 304–307).

Benzoin (*Styrax* spp.), often confused with liquid storax (*Hamamelidaceae* spp.), is mentioned in Chinese texts among goods exported from southern Arabia to the Far

East (Chau 1966: 120; Huan 1970: 153). The best quality of benzoin was the one exported from Cambodia or Sumatra, but the one collected in the Arabian Peninsula was used as well. Benzoin has an aroma similar to vanilla and, like liquid storax, has to be crushed before it can be used in combination with other ingredients. Like storax, it could be squeezed to extract juice or used on bodies in the form of ointment or perfume. According to the sources, liquid storax was exported mainly from the harbor of Mirbat (Chau 1966: 199–200).

The resin of Dragon's blood (*Dracaena* spp.) was also highly in demand on the Chinese market (Chau 1966: 198; Huan 1970: 152), its trading having begun in the 1st century CE as mentioned in the *Periplus Maris Erythraei* (Casson 1989: 168–170). The main center of this export was the island of Socotra. The resin was used for varnishes, tinctures and plaster but it also had some medical uses, effectively treating hemorrhages and as a hemostatic (Miller and Morris 1988: 16–17, 296). The *Dracaena* growing in the region of Dhofar was, however, exploited for the fiber extracted from the leaves which were treated to produce very strong cordage.

Putchuck (*Costus Arabicus*) is mentioned both in Rasulid (Smith 2006: 41, 60) and Chinese texts (Chau 1966: 221, 255, 257, 261) as one of the commodities traded from Zafar to the Far East. Although the best quality was the one collected in the Kashmiri region, the region of Tashi (Arabs) is recorded as the center of production, with the sites of Mirbat, Shisr and Al Baleed. It is a root, but in China it was burnt as incense and it was also one of the 50 fundamental herbs used in traditional medicine.

Plants and pigments

Aloe is the most important among the medicinal plants collected in southern Arabia. Although the best quality was the one collected on the island of Socotra, the aloe from Yemen and southern Oman was exported to China (Huan 1970: 153) and to Egypt, and as far as Europe (al-Shamrookh 1996). Aloe is still very common in the region and the juice, extracted from the leaves, was used in the past and is still used today, fresh or dried, for a number of diseases: headache, skin rash, nosebleed and as a cosmetic for dyeing facial skin (Miller and Morris 1988: 182–183, 321–322).

Madder, the root of *Rubia tinctorum*, is mentioned in some Portuguese statements as one of the main lucrative goods exported from the coasts of Arabia both in the Rasulid and Tahirid periods (Porter 2002: 182). This trade, however, had already been flourishing during the Ayyubid period. The main destination for this commodity was not China, but southern India, particularly the eastern coast.

Animal-based perfumes and animals

Much appreciated in mediaeval times was ambergris, a secretion produced by the digestive system of sperm whales. Although the main ports for this commodity were Hadramawt (Al Shihr) and northern Oman (Sohar), ambergris is mentioned among the goods exported from Zafar (al-Shamrookh 1996). Its distinctive aroma, which remains intact over time, made it a perfect component for perfumes and ointments.

Other animals, ready for consumption as food or alive, were moreover exported from Zafar. Sharks, for example, are men-

tioned in the *Mulakhkhas al-Fitan* as one of the main goods traded from Zafar to Aden, and shark fins are an important export still today for the Far Eastern market.

Finally, Chinese texts as well as the works of Ibn Al Mujawir and Ibn Battuta contain mentions of a certain animal, today extinct from the Arabian Peninsula, namely the ostrich. Referred to as a “camel bird”, it is listed among the gifts donated to the Chinese delegation

by the people of Zafar (Huan 1970: 153). Ostriches were common in the area till the middle of the last century, at least according to the words of Betram Thomas and Harry St John Philby who shot ostriches in the southern fringes of Rub al Khali (Potts 2001: 183). Despite a total lack of ostrich bones from all of the Arabian Peninsula, a fragment of an ostrich egg recently discovered at the site could constitute further evidence of the presence of this animal in Zafar.

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References

- al-Shamrookh, N.A. (1996). *The commerce and trade of the Rasulids in the Yemen, 630–858/1231–1454*. Kuwait: State of Kuwait
- Albright, F.P. (1982). *The American archaeological expedition in Dhofar, Oman, 1952–1953 (=Publications of the American Foundation for the Study of Man 6)*. Washington, DC–Philadelphia: American Foundation for the Study of Man
- Avanzini, A. (2011). *Along the aroma and spice routes: The harbour of Sumhuram, its territory and the trade between the Mediterranean, Arabia and India*. Pontedera: Bandecchi & Vivaldi
- Avanzini, A. (2017). The ancient port of Sumhuram. In A. Al Salimi and E. Staples (eds), *The ports of Oman* (pp. 33–56). Hildesheim: Georg Olms Verlag
- Belfioretti, L. and Vosmer, T. (2010). Al-Balid ship timbers: Preliminary overview and comparisons. *Proceedings of the Seminar for Arabian Studies*, 40, 111–118
- Casson, L. (1989). *The Periplus Maris Erythraei: Text with introduction, translation, and commentary*. Princeton, NJ: Princeton University Press

- Chakravarti, R. (1991). Horse trade and piracy at Tana (Thana, Maharashtra, India): Gleanings from Marco Polo. *Journal of the Economic and Social History of the Orient*, 34(3), 159–182
- Chau Ju-kau. (1966). *Chau Ju-kau: His work on the Chinese and Arab trade in the twelfth and thirteenth centuries, entitled Chu-fanchi* (F. Hirth and W.W. Rockhill, trans.). New York: Paragon Book Reprint
- Costa, P.M. (1981). The study of the city of Zafar (Al-Balid). *Journal of Oman Studies*, 5, 111–150
- Cribb, J. and Potts, D. (1996). Chinese coin finds from Arabia and the Arabian Gulf. *AAE*, 7(1), 108–118
- Groom, N. (1981). *Frankincense and myrrh: A study of the Arabian incense trade*. London: Longman
- Huan Ma. (1970). *The overall survey of the ocean's shores* (J.V. Mills, trans.). Cambridge: Cambridge University Press
- Jansen, M., Ley, K., Scholz, M., and Intveen, G. (eds). (2015). *The Archaeological Park Al-Baleed Sultanate of Oman. Site atlas along with selected technical reports 1995–2001*. Muscat: Office to the Advisor to His Majesty the Sultan for Cultural Affairs
- Jazim, M. (ed.). (2008). *Le Livre des Revenus du sultan rasûlide al-Malik al-Mu'ayyad Dâwûd b. Yûsuf*. Sana: Centre français d'archéologie et de sciences sociales de Sanaa
- Le Maguer, S. (2015). The incense trade during the Islamic period. *PSAS*, 45, 175–183
- Le Maguer, S. (2016). Une archéologie des odeurs: identifier les encens et leurs usages au Proche et Moyen-Orient (VIII^e–XII^e siècles). *Bulletin d'études orientales*, 64, 135–158
- Ludovico di Varthema. (1928). *The itinerary of Ludovico di Varthema of Bologna from 1502 to 1508* (J.W. Jones and R.C. Temple, trans.). London: The Argonaut Press
- Miles, S.B. (1919). *The countries and tribes of the Persian Gulf I–II*. London: Harrison and Sons
- Miller, A.G. and Morris, M. (1988). *Plants of Dhofar. The southern region of Oman: Traditional, economic and medicinal uses*. Oman: The Office of the Adviser for Conservation of the Environments, Diwan of Royal Court, Sultanate of Oman
- Newton, L.S. and Zarins, J. (2017). *Dhofar through the ages: An ecological, archaeological and historical landscape*. Muscat: Ministry of Heritage and Culture
- Pavan, A. (forthcoming). Husn Al-Baleed, a mediaeval fortified castle along the Omani coast. Preliminary results from the ongoing excavations. In *Proceedings of the 21st Rencontre Sabéenne: Contacts between South Arabia and the Horn of Africa, from Bronze Age to Islam*
- Phillips, W. (1972). *History and archaeology of Dhofar* (unpubl. Ph.D. diss.). University of Brussels
- Porter, V. (2002). The ports of Yemen and the Indian Ocean trade during the Tahirid period (1454–1517). In J.F. Healey and V. Porter (eds), *Studies on Arabia: In honour of professor G. Rex Smith* (pp. 171–190). Oxford: Oxford University Press
- Potts, D.T. (2001). Ostrich distribution and exploitation in the Arabian Peninsula, *Antiquity*, 75, 182–190

- Smith, G.R. (1985). Ibn al-Mujāwir on Dhofar and Socotra. *PSAS*, 15, 79–92
- Smith, G.R. (2006). *A medieval administrative and fiscal treatise from the Yemen: The Rasulid Mulakhkhaṣ al-ḥiṭān by al-Ḥasan b. ‘Alī al-Ḥusaynī* (=Journal of Semitic Studies Supplement 20). Oxford: Oxford University Press
- Zarins, J. and Newton, L. (2012). *Al Baleed: Ancient Zafar, Sultanate of Oman. Report of the excavations, 2005–2011 and Salalah Survey*. Muscat: The Office of the Adviser to His Majesty the Sultan for Cultural Affairs
- Zarins, J. and Newton, L. (2017). Northern Indian Ocean Islamic seaports and the interior of the Arabian Peninsula. In A. Al Salimi and E. Staples (eds), *The ports of Oman* (pp. 57–86). Hildesheim: Georg Olms Verlag
- Zhang Jun-yan. (1983). Relations between China and the Arabs in early times. *Journal of Oman Studies*, 6, 91–109

