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Emplazamiento, infraestructuras y organización de los puertos romanos

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Antonio Pizzo
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Maintenance, Function and Administration of the Port of *colonia Berytus*

Mantenimiento, funcionamiento y administración del puerto de la colonia *Berytus*[*]

Naseem Raad[**]

Abstract

After the Lebanese Civil War ended in the early 1990's, many different archaeological teams proceeded to excavate and explore the city of Beirut. These endeavours resulted in the identification of various harbour installations dated to the Iron Age, Hellenistic period, and Roman period which are currently landlocked and buried beneath the modern city. Geomorphological analyses have also contributed significantly to our understanding of Beirut's ancient harbour and have effectively provided an overview of its maintenance and management over several centuries. This paper collates all extant data regarding the port of the Roman colony of *berytus* and proposes several conclusions regarding the location and capacity of the ancient harbour, its functionality over several centuries, and briefly comments on the relation between the urban port city and the hinterland of the colony.

Keywords: Roman Beirut, Beirut port, Beirut archaeology, Beirut harbour, Beirut history.

Resumen

A principios de la década de 1990, al finalizar la Guerra Civil, equipos arqueológicos diferentes procedieron a excavar y explorar la ciudad de Beirut. Gracias a esos trabajos se identificaron varios puertos con instalaciones que datan de la Edad del Hierro, el período helenístico y el período romano; actualmente se encuentran sin salida al mar y bajo la ciudad moderna. Los análisis geomorfológicos también han contribuido significativamente a conocer el antiguo puerto de Beirut y han proporcionado efectivamente una visión general de su mantenimiento y administración a lo largo de varios siglos. Este trabajo recopila todos los datos existentes sobre el puerto de la colonia romana de *Berytus* y propone varias conclusiones sobre la ubicación y capacidad del antiguo puerto, su funcionalidad a lo largo de varios siglos, y trata brevemente también la relación entre la ciudad portuaria urbana y la interior de la colonia.

Palabras clave: Beirut romano; puerto de Beirut; arqueología de Beirut; puerto de Beirut; historia de Beirut.

[*] La traducción del título al castellano, resumen y palabras clave se deben a los editores.

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Introduction

The port of *berytus*, located in modern-day Beirut, served as an active commercial maritime hub throughout the Roman period. In 15-14 BC, a colony was established at the site, and two legions of veterans from the Battle of Actium were settled (Hall, 2001-2002, 142-144). At this time, numerous archaeological indices have revealed an expansion of maritime economic networks, an increase in private and public construction at the urban centre, and the annexation of a wider hinterland to the colony's territory (Perring *et al.,* 2003, 204, 220). These developments were largely fuelled by an active and well-maintained harbour to facilitate maritime commercial access to and from the port and its hinterland. This paper provides an overview of the port in the Roman period by collating and assessing published research, and proposes some preliminary conclusions based on the available data.

Geographical Situation

Beirut is situated on a rocky promontory at a geographically strategic location along the central portion of the Levantine coast (Fig. 1). Its northern shore is well-protected from the dominant southwest winds and is characterised by several natural reefs and bays. These are known today as the cove of Ain el-Mreisseh, the Bay of Saint George, and the Bay of Saint André. The western and south-western facades are less suitable for urban settlement due to the prevailing south-westerly winds and swell, resulting in significant shore erosion and sedimentation (Sanlaville, 1977, 6-7). The hills of Achrafieh provide an uninterrupted view of the coastal plain, and the Beirut River cuts through the region to provide a consistent source of fresh water (Davie, 1987, 144, 146). Combined with a wide, fertile coastal plain that is quite rare along the Levantine coast, these factors made the northern extent of the promontory of Beirut an attractive location for settlement throughout history.

Harbour Installations

In the Roman period, the region near the Bay of Saint André served as the main port of the city, and the urban heart of the city centred around the ancient harbour basin (Fig. 2). The Beirut Central District (BCD) excavations, undertaken in the 1990's and 2000's, have confirmed this by revealing two extensions of a quay currently landlocked beneath the modern city (Fig. 3). One of these features was uncovered in site BEY 007 and is composed of carved limestone blocks with a width of about 70cm (Thorpe *et al.,* 1998, 38). It runs in a NW-SE orientation and lies adjacent to the ancient harbour basin (Marriner *et al.,* 2008, 2502). The limestone blocks of the quay appear to have been joined using mortar as a binder (Hans Curvers, personal communication). Through the identification of associated diagnostic material, the quay has been tentatively dated to the Roman and Late Roman periods. An Ottoman period quay overlays the Roman phase, suggesting that the coastline remained consistent in the northwest corner of the harbour basin well into the late Medieval period (Seeden and Thorpe, 1997, 228).

Several rock-cut tanks have also been found in BEY 007, the closest of which lies roughly 15m west of the observed quay. They are roughly 5.5m X 3m in area with a depth of 1.5m, though excavators mention heavy disturbance due to urbanization that likely clipped their true depth (Thorpe *et al.,* 1998, 36). The tanks are plastered with pink mortar with inclusions of pottery sherds and pieces of tile (Thorpe *et al.,* 1998, 36). The precise function of these tanks is not yet known, an issue further obfuscated by the heavy truncation observed in this area of excavation. A similar situation has been observed at the site of Sarepta in South Lebanon, where excavators interpreted the basins as structures designed to purify or hold fresh water (Pritchard, 1971, 47-48). The distance of the tank observed in BEY 007 from the quay seems to support this conclusion, as this would have prevented sea water from flowing into the basin.

Fig. 1. The location of modern-day Beirut along the central Levantine coast (map by author).

Fig. 2. The coastal plain of Beirut depicting all excavated sites along with the location of the ancient harbour basin (map by author).

Roughly 70m southeast of the quay in BEY 007, another quay running in a N/NW-S/SE direction has been uncovered in BEY 039 (Elayi and Sayegh, 2000, 229). The quay has three phases of construction which have been dated roughly to the Iron Age, Hellenistic period, and Roman period based on diagnostic material, respectively (Elayi and Sayegh, 2000, 226-31). All three phases are composed of rectangular, limestone, ashlar blocks laid parallel to one another, with each stratum superimposed one over the over. This suggests a relatively stable coastline from the Iron Age to the Roman period since the location of the quay at this time appears to have remained fixed. The superimposition of several phases of construction also indicate that existing harbour installations were refurbished and reutilized.

As was observed in the quay in BEY 007, the Roman phase of the quay in BEY 039 is also characterized by the use of mortar as a binder (Elayi and Sayegh, 2000, 230). The similarity in orientation and construction techniques, as well as the identification of associated diagnostic material in each feature from the Roman and Late Roman periods, indicate that the extensions observed in BEY 007 and BEY 039 are likely part of one continuous quay. This would suggest a length of roughly 100m. Given that the quay observed in BEY 007 appears to only have a single phase of construction dated to the Roman period, this might suggest that it was a later expansion upon the existing quay of BEY 039. Unfortunately, significant disturbances due to urban development in the city have heavily truncated archaeological remains between the two excavated sites and make the confirmation of this theory tentative.

In BEY 039, a mooring stone was identified with two deep grooves on either side, likely from the usage of moored ships. It appears to be slightly inclined towards the harbour basin, which may be the result of repeated use. Although this was the only example found, gaps in the quay at a spacing of regular intervals of roughly 4.2m suggest more mooring stones to have been present in the past (Elayi and Sayegh, 2000, 230). The regular spacing of mooring stones indicates that ships with a width of roughly 4m were likely prevalent at the port.

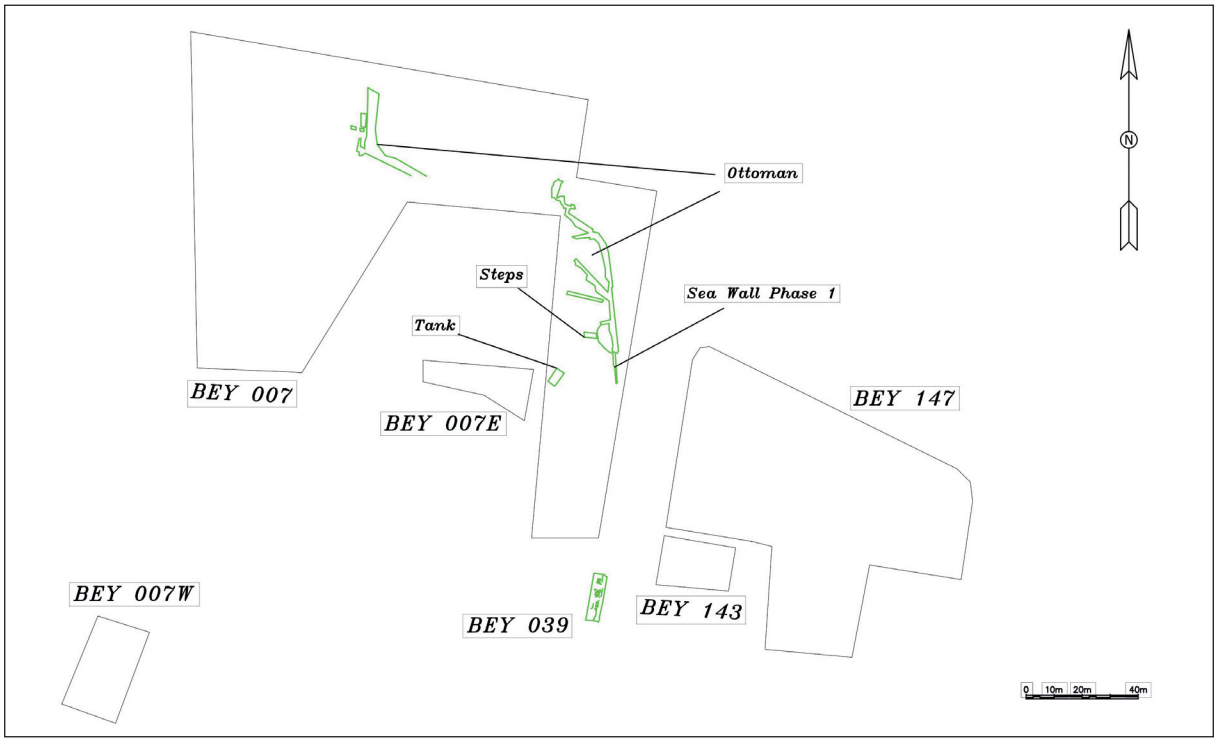

Fig. 3. A closer view of the ancient harbour basin of Beirut and corresponding installations; Sea Wall Phase 1 represents the Roman phase of the quay of BEY 007, and the presumed location of the harbour is in the areas of BEY 143 and BEY 147.

Maintenance and Function

Sedimentary cores taken from the sites of BEY 143 and 147 have revealed that the harbour was consistently dredged throughout the Roman period to maintain a depth of 2.5-3m. This has been inferred based on a hiatus in sedimentary sequences between the Iron Age and Roman period, which has been interpreted as the result of dredging practices in the Roman period that removed earlier strata from the geological record (Marriner *et al.,* 2008, 2505). The dredging of the harbour for several centuries reflects an infrastructural investment to support maritime commerce in *berytus*. This upkeep continued until roughly the 5th century AD, at which point it stopped and the harbour slowly infilled. Due to the lack of maintenance, the depth of the harbour in the 5th century AD seems to have decreased to between 1-2m (Marriner *et al.,* 2008, 2508). However, this does not necessarily indicate that maritime trade ceased, since imports continued to arrive at the city and products of *berytus* dated to the 5th-7th centuries AD have been identified in Cyprus, Greece, and the southern Levant (Hayes, 2000, 296; Kaldeli, 2013, 448-449; Tomber, 1999, 299).

The urban planning of the city in the Roman period also reflects the prioritization of the harbour since existing street grids adjacent to the harbour were inherited and retained throughout the establishment of the Roman colony and the refurbishment of numerous private and public structures (Curvers and Stuart, 2007, 215; Perring *et al.,* 2003, 208). Conversely, the street plan of the southern part of the city appears to have diverged quite distinctly from the previous Hellenistic grid (Saghieh-Beydoun, 2005, 168). These patterns suggest that city planners concentrated on minimizing disruption to port activity by refurbishing and reutilizing existing structures and grids next to the harbour as opposed to completely restructuring the urban plan, as was observed farther away from the harbour basin.

Glass and pottery workshops along with associated storage facilities dated to the Roman period were found in the north-eastern quarter of the city (Curvers and Stuart, 2007, 216). This region was likely connected to the ancient harbour by the northernmost E-W road running parallel to the coastline. This allowed practical access to and from the harbour, and allowed for the loading of glass, ceramics, and packaged agricultural products on merchant vessels directly from the packaging site. The port facilitated the distribution of wine produced in *berytus* to a number of sites throughout the Mediterranean, even reaching as far as Britain (Hayes, 1976, 66). This maritime transportation began primarily in the early-1st century AD and continued until the mid-2nd century AD when exports drop dramatically (Reynolds, 2000b, 391). The consistency with which exports were processed and distributed at this time suggest an active and undisrupted harbour. This is further corroborated by the imported amphorae observed in *berytus* that reflect a continuous flow of products from a wide variety of sources (Reynolds, 2000a, 1056).

Administration and the Hinterland

Based on ancient texts and inscriptions, it appears that the colony developed an administrative council with *munera*, which periodically commissioned public structures in the urban centre. The establishment of the colony also resulted in significant territorial expansion in the Mount Lebanon and Bekaa regions (Fig. 4). These areas were settled by veterans of the Battle of Actium, as attested by inscriptions from temples and religious sanctuaries erected in the Bekaa Valley mentioning a *pagus* of settlers at Baalbek and Niha (Millar, 2006, 178). The land allotted to the veterans of these legions would have been granted *ius italicum*, which made the tracts exempt from taxation (Arnaud, 2001-2002, 181-182).

The hinterland was likely connected with the urban centre through the southern-most route through the Mount Lebanon Range which leads from the coastal plain of Beirut through to the Bekaa region (Fig. 5). This has been corroborated through least-cost route analysis and the identification of road markers

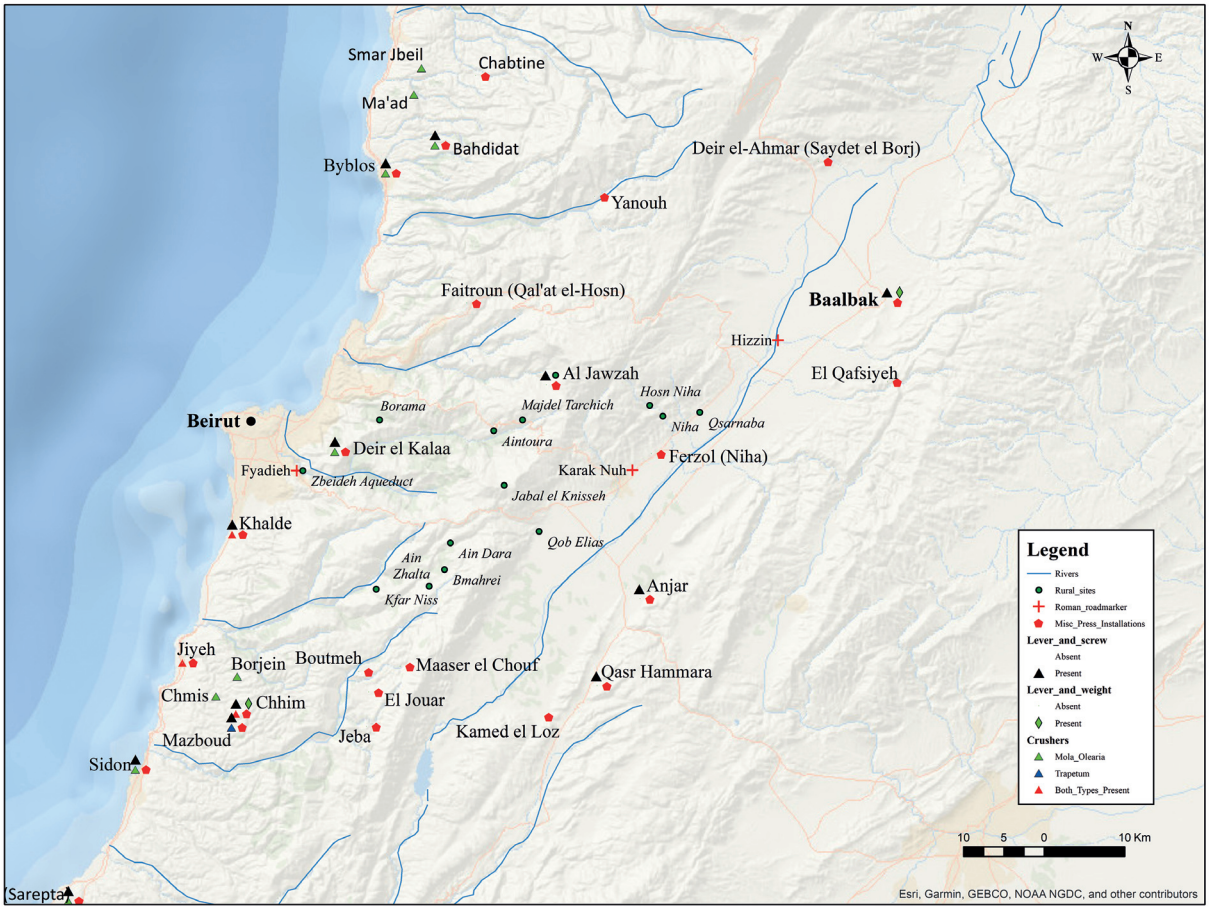

Fig. 4. The hinterland of *berytus*, which can be roughly delineated from the region between Jiyeh in the south, Anjar in the southeast, and the source of the Orontes River in the northeast (roughly 20 km north of Deir el Ahmar); the north-western boundary along the coast is currently unclear; "Lever_and_screw", "Lever_and_weight", and "Crushers" refer to locations of various kinds of pressing installations associated with the production wine and/or olive oil.

dated to the Roman period (Abou Diwan and Doumit, 2017, 237). After the establishment of the colony of *berytus*, this hinterland was characterized by intensive wine production, as attested by the numerous pressing installations dated to the Roman period observed throughout the region (Fig. 4). Some portion of wine produced in the hinterland of *berytus* was transported to the coast to be packaged in amphorae for consumption, whether through local sales or export.

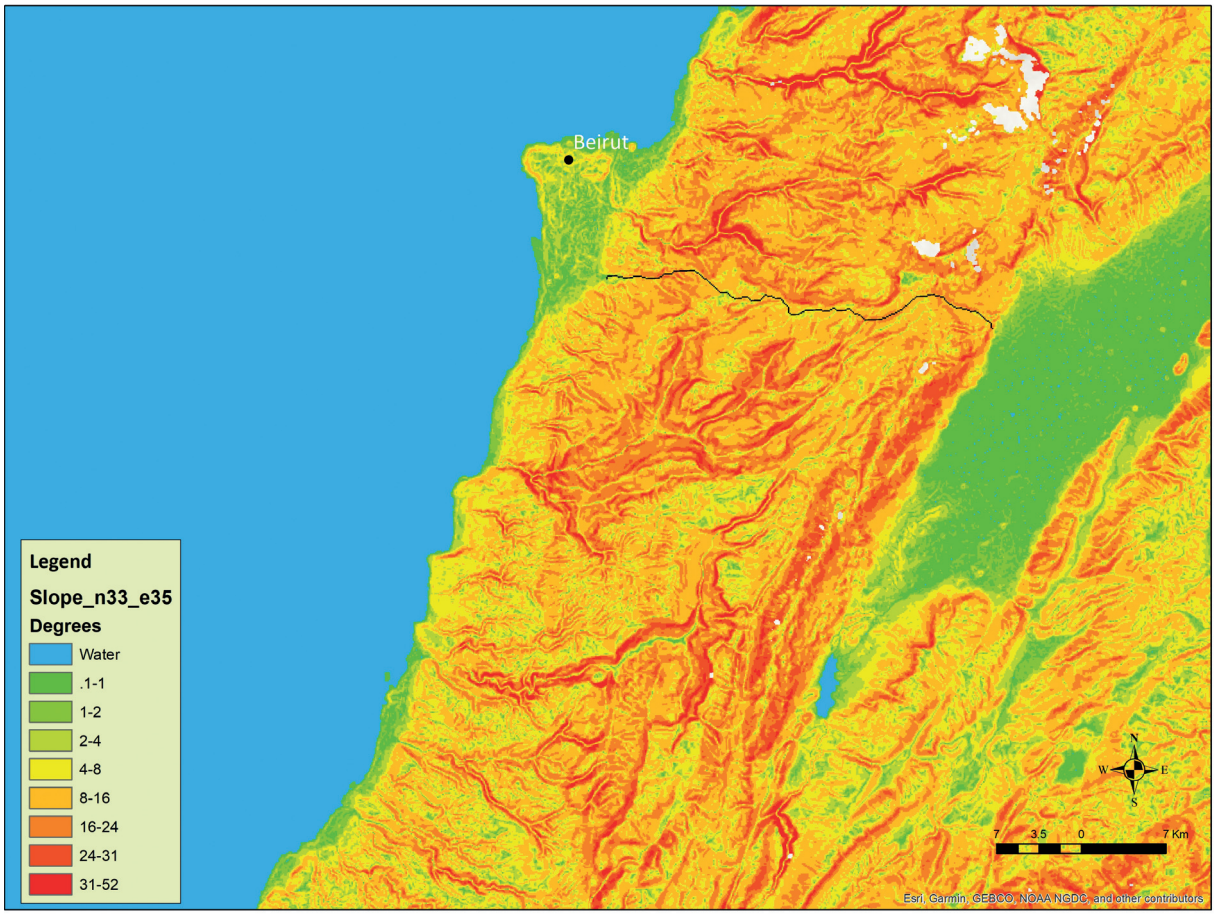

Fig. 5. The least-cost route based on the slope of elevation in the hinterland of *berytus* which leads from the coastal plain to Qob Elias (see Figure 4); this route presumably would have continued north to Baalbak, passing through the road marker observed at Karak Nuh and following the modern road.

Conclusion

Despite the fragmentary nature of the available archaeological data, several definitive conclusions can be reached regarding the port of *berytus*. The two quays observed in BEY 007 and BEY 039 are likely part of one continuous feature running adjacent to the ancient harbour basin. Based on a maximum depth of 2.5-3m within the harbour, as well as the spacing of roughly 4m between mooring stones along the quay, the port would not have been accessible to large merchant vessels such as the Madrague de Giens or Sud Lavezzi 5 (Boetto, 2012, 166; Wilson, 2011, 40). Rather, it appears that small to mid-sized ships were more prevalent in the harbour of *berytus*, perhaps comparable to the shipwreck uncovered near Fig Tree Bay in Cyprus (Leidwanger, 2013, 200). However, this does not exclude the possibility of a larger ship with a draught potentially up to 3m accessing the harbour by utilizing more than one space.

The refurbishment of the existing quay, as well as the inheritance and retention of the Hellenistic street plan adjacent to the harbour, reflect a prioritization of maintaining functionality of the harbour throughout the establishment of a Roman colony. Geomorphological analysis corroborates this, as seen in the active upkeep and maintenance of the port through dredging. Furthermore, the diverse ceramic assemblage found in the city reflects an active and well-connected maritime commercial network that persists into the later periods, despite the drop in maintenance of the harbour sometime in the 5th century AD (Reynolds, 2000a, 1056). This is further substantiated by the active viticulture in the

hinterland and subsequent export of amphorae to a variety of ports in the eastern Mediterranean. Thus, throughout a shift in administrative organization in the city, fluctuations in economic stagnancy and growth, and territorial expansion, all evidence indicates a continuation in the operation of the harbour.

Bibliography

Abou Diwan, G. and Doumit, J. (2017). "The Berytus-Heliopolis Baalbak road in the Roman period: a least cost path analysis". *Mediterranean Archaeology and Archaeometry*, 17.3, 225-241.

Arnaud, P. (2001-2002). "Beirut: commerce and trade (200 BC – AD 400)". *ARAM*, 13-14, 171-191.

Boetto, G. (2012). "Les épaves comme sources pour l'étude de la navigation et des routes commerciales". In: Keay, S.J. (ed.). *Rome, Portus and the Mediterranean*. Archaeological monographs of the British School at Rome 21. London: British School at Rome, 153-173.

Curvers, H.H. and Stuart, B. (2007). "The BCD archaeology project 2000-2006". *Bulletin d'archéologie et d'architecture Libanaises*, 9, 189-221.

Davie, M.F. (1987). "Maps and the historical topography of Beirut". *Berytus Archaeological Studies*, 35, 141-164.

Elayi, J. and Sayegh, H. (2000). *Un quartier du port phénicien de Beyrouth au Fer III / Perse: Archéologie et histoire*. Transeuphratène Supplement 7. Paris: Gabalda.

Hall, L.J. (2001-2002). "Berytus through the classical texts: from *Colonia* to *Civitas*". *ARAM*, 13-14, 141-169.

Hayes, J.W. (2000). "From Rome to Beirut and beyond: Asia Minor and eastern Mediterranean trade connections". *Rei Cretariae Romanae Fautorum Acta*, 36, 285-297.

Hayes, J.W. (1976). *Roman pottery in the Royal Ontario Museum*. Ontario: Royal Ontario Museum.

Kaldeli, A. (2013). Roman amphorae from Cyprus: integrating trade and exchange in the Mediterranean. Unpublished Ph.D. Thesis, University of College London.

Leidwanger, J. (2013). "Between local and long-distance: a Roman shipwreck at Fig Tree Bay Off SE Cyprus". *Journal of Roman Archaeology*, 26.1, 191-208.

Marriner, N., Morhange, C. and Beydoun, M. (2008). "Geoarchaeology of Beirut's ancient harbour, Phoenicia". *Journal of Archaeological Science*, 35, 2495-2516.

Millar, F. (2006). "The Roman Coloniae of the Near East: a study of cultural relations". In: Millar, F., Cotton, H.M., and Rogers, G.M. (eds.). *Rome, the Greek World, and the East: volume 3: the Greek World, the Jews, and the East*. Chapel Hill: University of North Carolina Press, 164-222.

Perring, D., Reynolds, P. and Thorpe, R. (2003). "The archaeology of Beirut: a report on work in the Insula of the House of the Fountains". *The Antiquaries Journal*, 83, 195-229.

Pritchard, J.B. (1971). "The Roman Port at Sarafand (Sarepta). preliminary report on the seasons of 1969 and 1970". *Bulletin du Musée de Beyrouth*, 24, 39-56.

Reynolds, P. (2000a). "Baetican, Lusitanian and Tarraconensian amphorae in classical Beirut: some preliminary observations of trends in amphora imports from the western Mediterranean in the Anglo-Lebanese excavations in Beirut (BEY 006, 007, and 045)". In: Chic Garcia, G. (ed.). *Congreso Internacional 'Ex Baetica Amphorae' (Sevilla-Écija, December 1998)*, Écija: Editorial Gráficas, 1035-65.

Reynolds, P. (2000b). "The Beirut Amphora Type, 1st century BC-7th Century AD: an outline of its formal development and some preliminary observations of regional economic trends". *Rei Cretariae Romanae Fautorum Acta 36 (Selçuk, 27 September-6th October 1998)* 36: 387-95.

Saghieh-Beydoun, M. (2005). "Urban planning in a seaport-city. Beirut from Hellenistic to Byzantine Period". In: Morhange, C. and Saghieh-Beydoun, M. (eds.). *La mobilité des paysages portuaires antiques du Liban*. BAAL Hors-série 2. Beirut: Ministere de la Culture, Direction Generale des Antiquites, 147-183.

Sanlaville, P. (1977). *Etude géomorphologique de la région littorale du Liban*. Beirut: Publication de l'Université libanaise.

Seeden, H. and Thorpe, R. (1997). "Beirut from Ottoman sea walls and landfills to a twelfth century BC burial: report on the archaeological excavations in the Souks northern area (BEY 007)". *Berytus*, 43, 221-254.

Thorpe, R., Beyhum, A., Kouly, S. and Beayno, F. (1998). "BEY 007 the Souks area. preliminary report of the AUB/ACRE project". *Bulletin d'archéologie et d'architecture Libanaises*, 3, 31-55.

Tomber, R. (1999). "Pottery from the sediments of the Inner Harbour". In: Holum, K.G., Raban, A., and Patrich, J. (eds.). *Caesarea Papers 2: Herod's Temple, the Provincial Governor's Praetorium and Granaries, the Later Harbor, a Gold Coin Hoard, and Other Studies*. JRA Supplementary Series 35. Ann Arbor: Journal of Roman Archaeology, 295-322.

Wilson, A. (2011). "Developments in Mediterranean shipping and maritime trade from the Hellenistic period to AD 1000". In: Robinson, D. and Wilson, A. (eds.). *Maritime Archaeology and Ancient Trade in the Mediterranean*. Oxford: Oxford Centre for Maritime Archaeology, 33-59.

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