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## Qalhat, a Medieval Port City of Oman: From a Field of Ruins to UNESCO

Axelle Rougeulle, Thomas Creissen, Vladimir Dabrowski, Fabien Lesguer, Anaïs Marrast, Hervé Monchot, Alessandra Peruzzetto, H el ene Renel

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The Archaeological Heritage of Oman

# QALHAT, A MEDIEVAL PORT CITY OF OMAN

*From a field of ruins to UNESCO*

AXELLE ROUGEULLE

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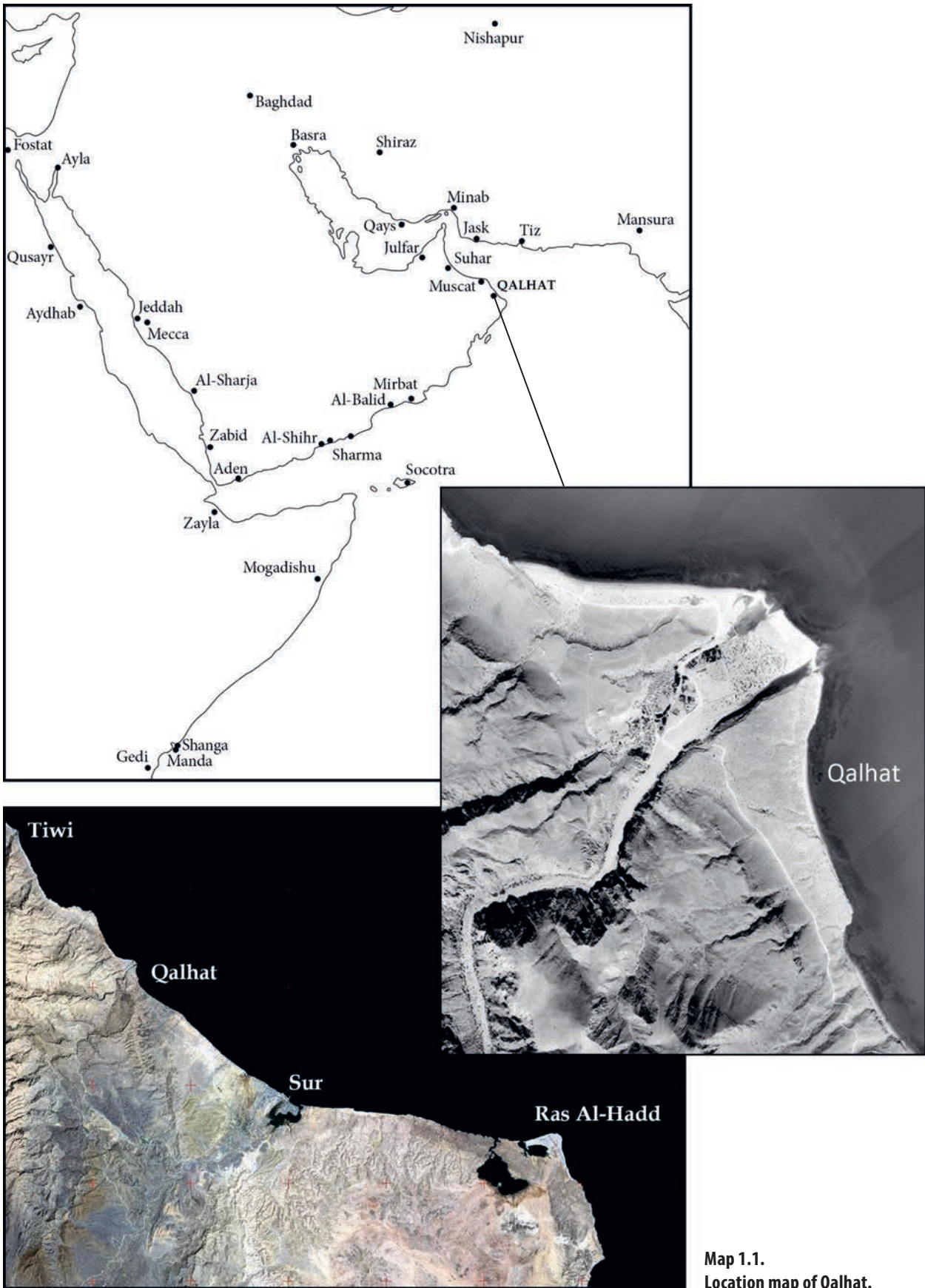
## Introduction

Qalhat (22° 41' 41" N, 59° 22' 35" E) is located on the coastal plain of the Ash Sharqiyyah South Governorate, about 50km to the northwest of Ras Al-Hadd, the easternmost tip of the Arabian Peninsula, and 25km from the city of Sur (see the Location map of Qalhat). It is definitely one of the main archaeological sites of Oman, a huge field of ruins, all that remains of a famous port city from medieval times. Its history, ranging from the 11<sup>th</sup>/12<sup>th</sup> centuries to the 16<sup>th</sup> century AD, is documented in contemporary texts which highlight its key importance in the history of Oman and the Indian Ocean trade, particularly during the time when it was the twin capital of the kingdom of Hormuz, in the 13<sup>th</sup>-15<sup>th</sup> centuries (below, Chapter 2). The town has never been reoccupied since its abandonment at the end of the 16<sup>th</sup> century, thus lying untouched under its own ruins which cover 35ha, enclosed in fortification walls. Qalhat therefore constitutes a unique and extremely precious testimony of this period, especially since the ancient city of Hormuz itself has long been totally destroyed.

Even though Qalhat has always been known as one of Oman's major heritage sites, it was mainly because of the Bibi Maryam mausoleum, the only monument still surviving on the site: a unique example of medieval Islamic architecture, this mausoleum stands at the foot of the mountain, along the ancient coastal track from Sur to Qurayyat, and it was a mandatory stopover for travelers on this route. But very few were aware of the existence of the city itself, the ruins of which stretches between the mausoleum and the seashore. In fact, the site has long remained poorly documented even from a scientific point of view (Chapter 1).

Ash Sharqiyyah South Governorate, and in particular the region of Sur, has recently experienced very significant economic development. At the northwest end of the Sur plain, 5km from the site, several huge industrial complexes including the Oman LNG Qalhat Terminal plant have been installed since 2000 and the city of Sur has known a great expansion. In the early 2000s, the construction of a highway between Sur and Qurayyat was initiated to replace the old coastal track winding through the narrow coastal plain between the mountains of Al-Hajar Al-Sharqi and the Arabian Sea. Some 25km north of Sur, on the south bank of Wadi Hilm, Qalhat was lying across the plain, on the originally planned route of the highway. Thanks to an additional allocation from the Omani authorities, the new road was deviated up the slope of the mountain, an impressive bridge was built across the *wadi*, and the site was saved. At the same time (2005-2006) restoration work was carried out by the Ministry of Heritage and Culture (MHC, now Heritage and Tourism) at the Bibi Maryam mausoleum. And in 2008 the MHC finally launched a project of extensive archaeological research at the site (Chapters 3 to 10), which eventually led in 2018 to the nomination of Qalhat on the UNESCO World Heritage List (Chapter 11).





Map 1.1.  
Location map of Qalhat.

## Chapter 1

# History of Research at Qalhat

### Early studies

The first modern description of the ruined city of Qalhat is by the British J.R. Wellsted, a member of the Bombay Marine, who achieved in the fall of 1835 an extended journey through Oman. From Muscat he sailed to Sur but had to anchor for a few hours off Qalhat (*Kilhât*) due to strong winds, and he took the opportunity to land at the site. He noted the great extension of the ruins where only ‘a small mosque’ remains ‘in a state of tolerable preservation’. Fortunately, he had time to walk to this building, in fact the mausoleum of Bibi Maryam (Figure 1.1), of which he gives an interesting description (Wellsted 1838, I: 41-42; see below, Chapter 7). Wellsted also mentions that the inhabitants of the present village north of the site used to search the ruins for gold coins, some of them bearing ‘the name of the Caliph Haroun Al-Rashid’. This assertion seems rather false because, first the site does not seem to have ever been looted; second, no coins other than copper or lead have been found at the site since excavation began; and third, and most importantly, the founding of Qalhat is at least three centuries later than the reign of Haroun Al-Rashid (below, Chapter 2).



Figure 1.1. The ruins of Qalhat from the east with the Bibi Maryam mausoleum in the background.



Forty years later, in September 1874, the British political agent and consul in Muscat S.B. Miles visited Qalhat (*Kilhat*) and provided more detailed information on the site, as on the lower course of Wadi Hilm (Miles 1919: 473-475, 526-530, the same visit is described in two different chapters, under different words). He described the mausoleum as well as a nearby vaulted cistern and the southwest fortification wall. He also mentioned the 'foundations' of many houses in 'coral and cobbles', 'the walls of a few still partly standing', which suggests that the site was then in a better state of conservation as standing walls are now almost completely lacking (Figure 1.1). He considered the towers and ruins standing on the north bank of Wadi Hilm as the 'chief part of the old town', where he found the fragment of an inscription, although he adds that he did not 'inspect this part properly'. Inside the *wadi* was the modern village of Kilhat, 'now merely a fishing village, inhabited by the Shaaban, a petty tribe of 200 souls' (or Saabiyeen, with 300 inhabitants, in the other part of the text).

After Miles, Qalhat disappeared from records for more than 120 years, until the late 1990s. In 1997, a survey of the coast between Qurayyat and Sur produced only general information about the site and the mausoleum, which is wrongly identified as the city's Great Mosque (Ibrahim and ElMahi 2000: 130-135). Pottery wasters were also discovered at two places, but their location is not specified. A year later, a much more detailed study of the site was carried out by the team of the Oman Maritime Heritage Project directed by Tom Vosmer, which was mainly devoted to underwater survey (Vosmer *et al.* 1998). A 100m wide strip of seabed in front of the site was surveyed by visual and remote-sensing searches and more than 20 stone anchors were recorded, most of them located in front of the beach (Chapter 10); a detailed ethno-archaeological study of this specific medieval artefact was also carried out. Some land surveys with differential GPS allow the plotting of the fortifications line and of some buildings along the shore, including a large one near the northern tip of the site which has been tentatively identified as the Great Mosque; in fact, it is a wide edifice with courtyards and a large *majlis*, possibly the palace of the governor of the city according to recent excavations (B16, Chapter 8). During the same period, historical information about the site was published (Al-Zadjali 1997a-b, 1998a-b). Finally, the study of the navigation history of the site and of the region was initiated (Agius 1999). During the same period, notes were also published by Paolo Costa (2002) about the Bibi Maryam mausoleum and the possible location of the Great Mosque.

The real archaeological study of Qalhat began in 2003, when an Omani-Australian team led by T. Vosmer, under the authority of the Oman Ministry of Heritage and Culture (MHC), achieved a single season of excavation on the site (Vosmer 2004). Additional efforts were devoted to underwater surveys using different technics, but the main research was made on land. Kite photo coverage has been launched (below). Some of the main elements of the site were recorded, the city-walls, the cisterns, and the graveyards. Two tombs dated to the Late Iron Age Samad period have been excavated some distance to the southeast of the site, and two stratigraphic soundings were dug in the northeast part near the mouth of Wadi Hilm. But the most interesting discovery was that of a *hammam*, located in the area of the northwest gate of the city, along the track climbing the bank of the *wadi* up to the site (Chapter 8). This unique and complex structure was partly excavated and mapped, and eventually mostly backfilled for protection, but unfortunately it was not studied in detail then and the Project was stopped. At the same time as these excavations, a technical description of the Bibi Maryam mausoleum was carried out by E. d'Errico to prepare the conservation works that took place in 2005-2006 (d'Errico 2003). An in-depth study of literary sources on Qalhat has also been undertaken (Bhacker and Bhacker 2004).

## The Qalhat Project (QP, 2008-2016) and Qalhat Development Project (QDP, 2013-2016)

### *The Qalhat Project excavations*

Considering the upcoming opening of the highway (completed in 2009) and the major importance of Qalhat in the history and heritage of Oman, the Ministry of Heritage and Culture (from 2020 Heritage and Tourism) decided in 2007 to launch a long-term archaeological research project at the site. At the invitation of the MHC, Dr Hassan Fazeli Nashli, then Director of the Iranian Cultural Heritage and Tourism Organization (ICHTO, Teheran), and Dr Axelle Rougeulle, member of the French National Centre for Scientific Research (CNRS, Paris), paid a preliminary visit to Qalhat in 2007, and the five-year Qalhat Project (QP) was consequently launched in 2008. During the first year, excavations were carried out by both a French team and an Iranian team, which also initiated conservation work on three small mausoleums in the exterior funerary quarter (Chapter 7). Following the withdrawal of the Iranian team, the QP went on as an Omani-French project. After a short preliminary season in spring 2008, five excavation seasons were conducted in 2008-2012, about one and a half month each fall, with a team of seven to nine archaeologists and specialists led by Dr A. Rougeulle under the authority of the MHC. They were co-financed by the MHC, the CNRS and the Archaeological Committee of the French Ministry of Foreign Affairs, with the support of the French archaeological agency Eveha.

The site of Qalhat appears like a vast ocean of collapsed small limestone blocks, cobbles and coral, with elongated heaps of stones, like waves, in all directions; not a single clear feature appears on the surface, and only a few wall alignments are discernible (Figure 1.1). But the heaps are clues to underlying walls, as shown in the aerial views where many buildings are clearly visible and the general town planning appears (Figure 1.2).



Figure 1.2. Aerial view of the site from the east (© MHT).





**Figure 1.3. Evacuation of rubble from the excavations of building B21.**

The first objective of the QP was therefore to carry out a cartographic study of the site to help understand the spatial organization of the city, an essential tool to drive the course of the excavations (below). On the basis of these cartographic documents, restricted excavations were carried out in what seemed to be noteworthy buildings in order to obtain the widest possible range of information about the medieval town; it should be noted that, in addition to their assumed importance, the excavated buildings were also to be located along one of the two modern tracks opened through the site by fishermen some decades ago, which were the only possible means of removing excavated rubble from the site (Figure 1.3). Although carried out on a somewhat small scale for such a vast site, this work has yielded varied and interesting evidence on the spatial organization and development of the city, the daily life of the inhabitants and their activities, the regional and international trade networks of the port. Surface surveys have made it possible to identify the main characteristics of the town's urban planning, and soundings have provided data on the function and chronological evolution of the different quarters (Rougeulle 2010). The defensive system, the water supply system, and the funerary quarters, were studied. The Great Mosque has been discovered and tested, along with several other main buildings (Rougeulle, Creissen and Bernard 2012). The study of the archaeological material, and in particular of the local and imported ceramics, allowed a preliminary chronology of the site and the identification of the main commercial links of the harbour. A second QP five-year period was initiated in 2013 on a reduced scale, parallel to the QDP (below), to complete our knowledge of the medieval city as a whole, with additional surface studies and excavation tests in new areas.

*The Qalhat Development Project, excavations and conservation*

Given the results of the QP, the MHC launched in January 2013 a new five-year project (2013-2017), with the final objective of creating an archaeological park on the site. The Qalhat Development Project (QDP) was led and supported by the Ministry, under the scientific direction of the author. Its aim was to excavate

and clear extensively some important buildings discovered during the QP excavations, then to carry out conservation work for their presentation to the public in the future park. It therefore included an excavation component, carried out by the CNRS and the archaeological agency Eveha International under the direction of Dr A. Rougeulle; a conservation component, carried out by World Monuments Fund (WMF) under the direction of A. Peruzzetto; and a tourist development component which has yet to be initiated.

The excavation and conservation works were planned to take place side by side in six-month seasons, from October to March, divided into two campaigns (Rougeulle 2016). Following a break in 2014b/2015a, and a premature stop in 2016, only two and a half seasons of excavation took place (2013a; 2013b/2014a; 2015b/2016a), with a team of six archaeologists from the Eveha International Agency, several specialists from the CNRS and a team of 30 to 40 workers. Regarding the conservation component, four and a half seasons of conservation were carried out (2013b/2014a; 2014b/2015a; 2015b/2016a, 2017b/2018a, 2019a), with a stonemason and an architect from World Monuments Fund, and a team of c. 20 masons and workers. Three buildings in the northwest quarter of the city, a group of two houses (B94), a large construction interpreted as a store (B21) and a small platform mosque (B19), have been fully excavated and conserved, as well as a courtyard mosque in the funerary quarter (B67), all previously tested during the QP. In the western quarter, the extensive excavation of two nearby jewellers' (B39) and potters' (B41) workshops, also brought to light during the QP, was achieved, as well as that of the west gate of the city (B30) and of a small platform mosque nearby (B29), all awaiting conservation works. The conservation of the *hammam* (B4), the excavation of which began during the Omani-Australian mission in 2003 and was finalized during the 2015b/2016a QDP season, has been completed, as well as the necessary reconstruction of the terracing fortification wall of the city underneath (B133). A large cistern outside the south city wall (B9) was also consolidated. The extensive excavation of the large Great Mosque complex on the shore (B12), which monopolized much of the QP and QDP task force, has been completed and conservation work is underway.

### *The Cartographic Project*

The only topographic documents available at the start of the QP were a black and white aerial photo and a 2m contour line map of the site provided by the MHC, as well as a, incomplete set of kite photographs taken during the 2003 Australian expedition.<sup>1</sup> Thanks to a three-year grant from the Total Foundation,<sup>2</sup> the detailed cartographic study of the site was undertaken in 2008-2010 by two CNRS cartographers (E. Régagnon and O. Barge, Archéorient, Lyon). During the first season, the topographical map of the surface was carried out, the site was entirely surveyed with a differential GPS following a 10m grid, a 20m grid for the surroundings; contour line maps as well as a digital elevation model (DEM) were produced. In the following years, a Geographic Information System (GIS) of the site was produced, based on a Digital GPS recording of all discernible topographic features (heaps of stones, void areas or alignments, terraces, visible structures as fortifications or graves ...) (Figure 1.4A-B). When the surface was too chaotic, main streets alignments and blocs of buildings were first identified on the kite photo coverings, both vertical and oblique, taken in the same seasons and then digitized with GIS software and transferred to the GPS receiver, the photointerpretation finally controlled on the field (Régagnon and Barge 2011; Barge and Régagnon 2012). All this lead to the production of preliminary city maps showing the main architectural units, the approximate layout and interior plans of the buildings, and the circulation networks, with a varying reliability gradient depending on the technique used (Figure 1.5). The cartographical project also conducted in 2010 a survey of the plateau south of the city and of Wadi Hilm upstream of Qalhat (Chapters 3 and 5).



Based on this city map, a detailed surface study of the central quarter was launched in 2013; being the most formerly and densely populated part of the city, and chiefly built on sloping ground, this quarter was the most illegible on the surface and so the least reliable on the map, while the surrounding areas appeared much more clearly on cartographic documents (Chapter 3). All the registered buildings of this quarter were therefore identified and studied on the ground, each line of wall discernible on the surface was cleared, the plans were corrected and completed by hand as much as possible. A further cartographical survey was then carried out in 2016, to enter these new data on the database and correct the preliminary plans and the general map of the quarter, a work which unfortunately could not be fully completed before the end of the project.

But the main objective of the Cartographic Project during the QDP was to carry out photogrammetric surveys to produce 3D models that could be used as a support for archaeological study, archival conservation, publication and development, particularly in the perspective of the archaeological park and a UNESCO candidature. Three field seasons (2013a, 2014a, 2017b) were carried out by the French company Iconem. The entire surface of the site and its surroundings was scanned using a drone (Figure 1.4C), with a definition of 3 to 5cm/pixel, and all main features and excavated buildings were digitalized by drone and pole (Figure 1.4D), with a definition of 0.5 to 1cm/pixel, before and after conservation work, either by Iconem or by the topographers of the Eveha archaeological team.

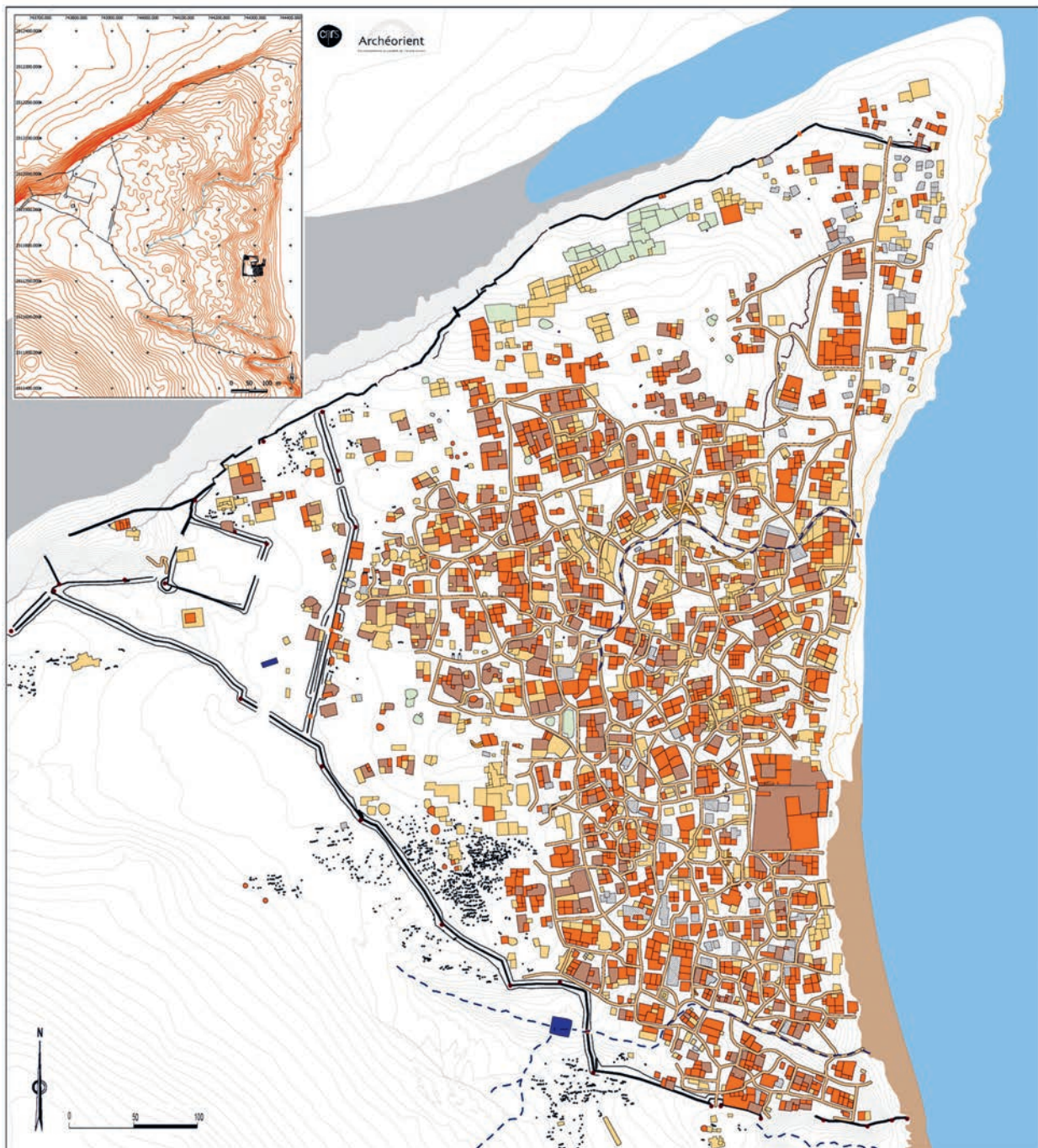
#### *Related studies*

The archaeological material unearthed during excavations has been recorded in dedicated databases and studied by specialists; apart from the



**Figure 1.4. The Cartographic Project: A-B) Differential GPS survey (CNRS-Archéorient); C-D) Drone and pole photogrammetry (Iconem).**





**Figure 1.5. Preliminary map of the site from the 2008-2010 Cartographic Project surveys of the surface (orange: buildings / purple: courtyards / yellow: terraces / green: enclosures / blue: cisterns and *wadis* / black spots: graves).**

exceptional objects preserved in the MHT reserves or the National Museum in Muscat ('Middle Islam' and 'Splendor of Islam' galleries), it is now kept in the store which was built in 2015 by the MHC outside the site, at the foot of the highway, which also includes an office and accommodations (Figure 1.6A-B).

An extensive analysis of the material, and especially, of the huge number of ceramics brought to light during excavations, was carried out all along field work since 2008 (H. Renel, CNRS) in order to build a chrono-typology of this material, an essential tool for the dating and interpretation of the excavated buildings and the chronology of the site (Figure 1.7A-E). The ceramic assemblage of this rather late period





**Figure 1.6. The site storage area: A) Containers and building for the storage and conservation of excavation of material and tools (left), excavation rubble storage area sorted for conservation (right); B) Inside view of the storehouse.**

was quite badly known but the discovery and extensive excavation of a pottery workshop of the 14<sup>th</sup> century (Chapter 10) was of a great help to the study of the local ceramic production and trade (Lesguer and Renel 2018). Physico-chemical analyses of sherds were also carried out<sup>3</sup> to help identify the characteristics of this local production (Rougeulle *et al.* 2014; Gianni *et al.* 2020). A preliminary study of the Far Eastern imports was carried out in 2011 by B. Zhao (CNRS-CRCAO, Centre de recherche sur les civilisations de l'Asie orientale), and analyses were also held to search for the exact origin of this material (Simsek *et al.* 2014; Zhao *et al.* 2017).

Organic remains have also been preserved and analysed (Chapter 9).<sup>4</sup> Most of the mammalian bones have been studied (Monchot and Béarez 2016; Monchot and Guintard 2017), as well as the fish fauna from the twin houses B94. Micro-fauna and botanical samples from selected layers in specific buildings, especially the twin houses B94, the jeweller's workshop B39 and the Great Mosque B12, were collected, by sieving and flotation, and studied (Figure 1.7F), as well as wood elements found in masonries (Dabrowski 2019; Dabrowski *et al.* 2015; 2018).





**Figure 1.7. Material registration and studies: A-C) Sorting, washing and drying of excavated material after fieldwork; D) Field data recording; E) Ceramic study; F) Flotation for micro-fauna and botanical sampling.**

Finally, a rather extensive historical study was carried out on historical sources to complete that published by Bhacker and Bhacker (2004) and to help understand the topography and evolution of the town (Rougeulle 2017; see Chapter 2).

### **Qalhat on the UNESCO World Heritage List**

Qalhat had long been renowned as an outstanding archaeological site, a key part of the history of Oman and the Western Indian Ocean during the Middle Ages, and the site was inscribed on the tentative list to UNESCO as early as 1988. But too little was known about the site at that time to claim it being nominated on the World

Heritage List. Besides opening an archaeological park, the main objective of the MHC when launching a large research project in Qalhat in 2007 was to obtain enough information to make this nomination a success. Considering the exceptional results of the QP and QDP, a submission file was prepared in 2016-2017 by an Omani National Committee and Qalhat was finally nominated at the end of June 2018 (Chapter 11).

### Notes to Chapter 1

<sup>1</sup> These first kite photographs of Qalhat were taken by Yves Guichard (CNRS), then a member of the team of the Joint Hadd Project who was working the same 2003 season in the nearby area of Ras al Hadd. Our warmest thanks go to T. Vosmer for providing us with these photos which were of invaluable help during the early stages of the QP.

<sup>2</sup> This grant was made possible thanks to B. Huillard, then Director of the Oman Branch of Total S.A., to whom we owe a lot for his efficient and warm support to the Project.

<sup>3</sup> In the Monaris, previously Ladir, lab of the CNRS/Pierre and Marie Curie University, Paris, under the direction of Ph. Colomban.

<sup>4</sup> In the National Museum for Natural History, Paris, under the direction of M. Tengberg and Ph. Béarez.