AL-KHARJ I

REPORT ON TWO EXCAVATION SEASONS IN THE OASIS OF AL-KHARJ • 2011–2012
SAUDI ARABIA

Jérémie Schiettecatte
Abdulaziz Alghazzi

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Antiquity is the most distinctive component of a country's national and cultural heritage, as well as a scientific and cultural treasure, an economic source and a cornerstone of the tourism sector.

SCTH, represented by the Antiquity and Museums Sector, offers an opportunity to scholars and experts to publish their research work, academic dissertations and studies with the goal of protecting, raising awareness and promoting Saudi Arabian antiquities through all available means, including publication and authorship.

This book is the end product of implementing the policy of the Antiquity and Museum Sector, in promotion of the objectives of the custodian of the two holy mosques program for the kingdom's cultural care, By making available scientific publications that highlight and boost the public interest and awareness about the Saudi Arabian culture, the cradle of Islam, we are able to bridge the cultural links and communication across the continents that have existed since ancient time.

SCTH president
Sultan Bin Salman Bin Abdulaziz
As part of the action plan for the Antiquities and Museums Sector of the Saudi Commission for Tourism and National Heritage (SCTH) has given special attention to scientific research and developed different publication venues in which results of ongoing discoveries, researches and archaeological investigations are presented so as to promote and raise public awareness and knowledge on all archaeological sites and research activities in the Kingdom, to enrich libraries with specialized publications and to provide students and researchers with valuable resources on Saudi cultural heritage.

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Furthermore, SCTH is keen to provide various gateways for publications to make them accessible to the public such as CDs, electronic media and the website.

Vice-President General Supervisor on the custodian of the two holy mosques program for the kingdom's cultural care

Prof. Ali bin Ibrahim Al Ghabban
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Archaeological research in the oasis of al-Kharj was made possible thanks to the financial and technical support of many institutions to whom we are greatly indebted:

- the Saudi Commission for Tourism and Antiquities (SCTA) in Riyadh;
- the Ministry of Foreign Affairs in Paris;
- the French Embassy in Riyadh;
- the Centre National de la Recherche Scientifique (CNRS) in Paris;
- the research centre ‘Orient & Méditerranée’ (CNRS, Université Paris-Sorbonne, Université Panthéon-Sorbonne, École pratique des hautes études) in Paris;
- the École et Observatoire des Sciences de la Terre at the University of Strasbourg;
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INTRODUCTION

Two field seasons in the oasis of al-Kharj

Al-Kharj area is one of the major oases of the Najd, in the very heart of the Kingdom of Saudi Arabia (fig. 1). Specific environmental conditions have made this area one of the most attractive regions of Central Arabia for settled communities. And as a consequence, the region of al-Kharj appears as an obvious stopping place and main crossroad on the commercial routes that linked Yemen and the Hijaz to the Gulf and Mesopotamia.

There was little doubt that the archaeological study of this region would open up new horizons for the comprehension of the peopling and settlement process, and of circulation and contacts within the Arabian Peninsula, from prehistory down to the mediaeval period.

Stimulated by this prospect, a Joint Cooperative Agreement for Archaeological Surveys in the oasis of al-Kharj was signed in September 2011 between the Saudi Commission for Tourism and Antiquities (SCTA), Riyadh, and the Centre National de la Recherche Scientifique (CNRS), Paris. A scientific team was formed under the direction of ʿAbd al-ʿAziz al-Ghazzi (King Saud University, Riyadh) and Jérémie Schiettecatte (CNRS, Paris).

The aim of the research was to characterize the diverse prehistoric, protohistoric, pre-Islamic and Islamic archaeological remains as well as to illustrate the environmental context that made it possible for people to settle in such an arid region.

The first season of survey and excavation was carried out from September 20 to October 21, 2011, it was mainly devoted to establishing an archaeological map of the oasis (fig. 2) and to studying two significant sites: AK-22 (Palaeolithic) and al-Yamama (Late Pre-Islamic/Islamic periods).

The second season, from November 11 to December 18, 2012, was devoted to pursuing the excavation of al-Yamama, and to the realization of a geomorphological map of the oasis.

This book presents the results of this research.

Funding

The scientific issues which dictated our field activities have been addressing those set out in four research programmes. They funded the major part of the field activities:

- the programme “Oasis d’Arabie déserte”, conducted by G. Charloux (UMR 8167 ‘Orient & Méditerranée’, Paris), funded by the ministry of Foreign affairs, Paris; this programme also supports field activities in Dumat al-Jandal and Najran;
Archaeology in al-Kharj: past research and present issues

The favourable environment which made this oasis so promising for archaeological and historical studies should have been all the more inviting given that this area is frequently mentioned in pre-Islamic poetry and Islamic tradition (Wöstenfeld 1874, Thiold 1958, Bin Khamis 1978, Al-Askar 2002, Al-Juhany 2002).

In spite of this, archaeological remains in Central Arabia have rarely been noticed. Philby mentioned the presence of tumulus fields, underground water channels and a large ancient settlement, al-Yamama, during a journey in the Najd in 1917–18 (Philby 1919; 1920). In 1945, Col. G. de Gaury reported the presence of tumulus fields nearby al-Kharj (De Gaury 1945). A few years later, Philby completed the description of the oases of al-Kharj, al-Aflaj and the Wadi Dawasir (Philby 1949). In 1978, a comprehensive archaeological survey of the Kingdom of Saudi Arabia was carried out in Central Arabia and identified sixteen sites in the oasis of al-Kharj alone (Zarins et al. 1979), confirming the potential of the area. Consequently, in the late 1980s and the 2000s, ‘Abd al-Aziz al-Ghazzi initiated soundings at four sites in the oasis: on the settlement of Hazm ‘Aqila ([al-]Ghazi 1996, 2009), on that of al-Yamama ([al-]Ghazzi 2010), in the necropolis of al-Afja ([al-]Ghazzi 2011a), and on the water channel of Abraq Farzân ([al-]Ghazi 2011b).

Although limited by their duration or by their scope, these previous studies registered the existence of a variety of sites where one could expect to find answers to several of the current research issues in the Arabian Peninsula.

1 Philby 1920: 167: “The district of Kharj falls naturally into three divisions: the southern and tapering portion of the triangle in which there are no habitations, no cultivation, and no feature of interest; a central section occupying about half of the remaining portion, in which lies at the present time the centre of such agricultural and political activity as the district enjoys; and finally the northern or, if I may call it so, the mediaeval and prehistoric section, in which, thanks to a score of peaceful years, the desolate ruins of a former prosperity are slowly but surely quickening to new life.”

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- the regular activities of the Research Centre from the Saudi Commission for Tourism and Antiquities, Riyadh, headed by Jamal Omar.

Besides these, several institutions and programmes contributed by their financial and technical support to the field activities:
- the CNRS and the University Paris-Sorbonne through the research centre UMR 8167 ‘Orient & Méditerranée’, Paris;
- the programme “Médée”, conducted by E. Fouache (Université Paris-Sorbonne, Abu Dhabi), funded by the Ministry of Foreign Affairs, Paris;
- the École et Observatoire des Sciences de la Terre at the University of Strasbourg;
- the Académie des Inscriptions et Belles-Lettres, Paris;
- the Service de Coopération et d’Action Culturelle of the French Embassy, Riyadh.
Regarding prehistory, one of the main current research issues in the Peninsula concerns the dispersal of the first Anatomically Modern Humans (AMH) in Arabia during the Palaeolithic. A debate also exists about trying to understand where the Arabian Neolithic comes from: Levantine influence or local developments from autochthonous populations? Recent palaeo-environmental and palaeo-climatic studies revealed the possible influence of the wet phases in the development of a production economy. If much has been done in South and East Arabia, the centre of the Peninsula remains unexplored. Environmental studies combined with lithic analysis have therefore been carried out during the 2011 and 2012 seasons in order to address these issues (Chapters 1 and 2).

The proto-historical occupation of the oasis is obvious, through the presence of several necropolises that struck all the travellers and archaeologists passing by in the past. At two of them, al-ʿAfja and ʿAyn al-Ḍila, hundreds of dry-stone turret graves or tumuli are visible. The main issues are the date of their building, and the time span of their use. In Yemen, these tombs delivered artefacts from the 3rd and 1st millennium BC. Is this indicative of long-lasting funerary practices, or of the reuse of these tombs much later on? Another question regards the cultural affiliation of these funerary practices and people who built the tombs. In West and South Arabia, these tombs were collective and are generally associated with (semi) nomad or pastoralist groups; contrarily, along the Arabian Gulf coast and in the Bahrain and Dhahran area, these tumulus tombs were designed for a single body and were the practice of sedentary people. Al-Kharj area is the buffer zone between these two cultural spheres; the study of the burial practices here could be indicative of the very nature of people, of their origin and their way of living. None of these necropolises were investigated during the two first seasons, but their study will start in 2013. Nevertheless, a brief description of them is presented in the 2011–2012 survey report (Chapter 3).

Ascribing a time-span to the sedentarization process in al-Kharj area is also crucial. Did this process begin right from the 3rd millennium BC, as it can be observed in the Oman Peninsula during the Hafit period, or in Bahrain area during the Dilmun period? Or are we to observe in al-Kharj area an alternate and specific model? Is the sedentarization process linked to the domestication of the palm-tree, as in the Oman Peninsula, or to other criteria such as long-distance trade?

Another issue concerns the Late Iron Age and Early Christian era, a transitional period in the Arabian Peninsula. New populations appeared in historical sources and archaeological contexts; they settled in the Oman peninsula (e.g. Mleiha), in South Arabia (penetration of Arab groups in the Jawf valley), in North-West Arabia (Nabataeans). They all shared common features, particularly in their funerary practices. And yet, the origin of these groups is still unknown. The study of a site in Central Arabia could throw new light on this process. Although no occupation from that period has yet been revealed in the oasis, we are still confident that the most ancient occupation of the site of al-Yamama, not reached so far, might enlighten us about this issue.

Finally, issues regarding the Late Pre-Islamic and the Islamic period are numerous. A sharp decline of the settlement density can be observed in South, East and North Arabia from the 4th century onwards and accelerated during the 6th century. This process might have been partly linked to changes in the environment. Is this process to be observed in Central Arabia? Arab-Islamic sources and preliminary fieldwork results (Chapters 4 to 11) indicate a different trajectory for this region, which might have been continuously occupied from the
Late Pre-Islamic period\(^2\) until the end of the 12th century. Finally, a pottery sampling on the site of al-Yamāma (Chapter 9) indicates a temporary abandonment of the site at the end of the 12th century. One wonders what might have led to such a situation.

As one can see, archaeological research in the oasis of al-Kharj is driven by many questions, and preliminary results are raising new issues. This prompted us to set up complementary field investigations, dealing with the long term, from Palaeolithic to modern times, from the environmental, archaeological and historical point of view.

**Programme of the 2011 and 2012 seasons**

The first two field seasons aimed at providing an initial overview of the evolution of regional occupation from the Palaeolithic to the Islamic era. This has been achieved through the creation of archaeological and geomorphological maps of the oasis, and the study of two significant sites: AK-22 (Palaeolithic) and al-Yamāma (Late Pre-Islamic/Early Islamic periods). Small teams of specialists from different domains worked in a complementary way in various fields.

### DRAWING THE GEOMORPHOLOGICAL MAP OF THE OASIS

In November and December 2012, geomorphologists A. Chabrol, G. Fortin and E. Fouache, accompanied by archaeologists A. al-Ḥamad and J. Schiettecatte, produced a geomorphological map of the area (geological, hydrographical, pedological cover). The purpose was manifold: crossing environmental with archaeological data in order to understand settlement strategies; to understand how the environment evolved during the Holocene; and to identify the water resources at different periods, and the connection between these resources, agricultural capabilities and the settlement process. See Chapter 1.

### DRAWING THE ARCHAEOLOGICAL MAP OF THE OASIS

- **Prehistoric survey of the oasis and study of site AK-22**
  
  In October 2011, two prehistorians, R. Crassard and Y. Hilbert, and an archaeologist, A. al-Ḥamad, conducted a survey of al-Kharj oasis and the surrounding area to identify Palaeolithic and Neolithic sites. It yielded 29 sites. The most significant one, AK-22, has been given special attention. See Chapter 2.

- **Historical survey of the oasis**
  
  In October 2011 and November 2012, intermittently, archaeologists G. Charloux, A. al-Ghazzi, M. Mouton, J. Schiettecatte and P. Simeon, and the epigrapher Ch. Robin, visited and registered previously known and newly discovered archaeological sites in al-Kharj area, dating from the Bronze Age to modern times. See Chapter 3.

- **Toponymic and historical study of the oasis**
  
  In October 2011, the epigraphers and historians M. Arbach and Ch. Robin initiated a study of the present-day place names attested in the area in order to compare them and identify them with those mentioned in ancient sources (pre-Islamic inscriptions and early Islamic sources). It led to the understanding of the toponymic and tribal history of this area on the eve of Islam and during the early centuries of the Islamic era. See Chapter 4.

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2 “Late Pre-Islamic period” has been chosen as a substitute to unsatisfactory exogenous terminology such as “Hellenistic Period” or “Sasanian Period”. It stretches from the 2nd century BC to the 6th century AD.
Archaeological exploration of the site of al-Yamāma

- **Topographic and geomagnetic survey**
  During both seasons, the main archaeological settlement of the oasis, al-Yamāma, received most of our attention. The first step was the creation of the map of the site and its remains, be they those visible on surface through the use of topographic methods and devices by J. al-Harbī and M. Niveleau, or concentrations of underground remains through a geomagnetic survey conducted by B. Gavazzi, R. al-Khatib and M. Munsch. See Chapters 5 and 6.

- **Periodization of the occupation**
  In order to identify the time-span of occupation of the site and the different phases of this occupation, a deep sounding, Sounding 1, was initiated on the highest part of the site by G. Charloux, A. al-Hamad, M. Mouton and J. Schiettecatte. It led to the drawing up of a ceramic typology for each period of occupation by M. Mouton and P. Simeon. It was completed by surface sampling, which provided some insights on the phases of expansion/contraction of the site. See Chapters 7 and 9.

- **Characterizing the urban structure of the site**
  Three areas have been explored:
  
  
  
  Area G17: opening of a test trench, Sounding 3, by M. Mouton. There, the remains of kilns have been unearthed, possibly part of a pottery workshop. This operation has just started and is not reported here. Further details are available in the unpublished preliminary report of the second season (Schiettecatte et al. 2012: 44–46).

- **Characterizing the environmental context of the site**
  In addition to the geomorphological study already mentioned, which provided some insights on the geographic setting of the site and its access to groundwater, an archaeozoological study has been conducted during the two seasons by H. Monchot on the faunal remains from the excavation at al-Yamāma. See Chapter 11.

- **Restoration**
  Considering the very good state of preservation of the ruins of the mosque at al-Yamāma, its unearthing has to be followed by a restoration of the remains (strengthening of the mudbrick walls and preservation against weathering).

  In November 2012, D. Gandreau and S. Moriset, specialists of mudbrick restoration, from the High School of Architecture and CRATerre (International centre for earth construction) in Grenoble (France), joined the project for a one-week stay so as to define the best restoration procedure to be applied, taking into account the local environment and the nature of the structures. They drew up a restoration project for the mosque and other remains of al-Yamāma that could be applied from 2013 onwards with the agreement and financial support of the SCTA. It can be consulted in the unpublished 2012 report (Schiettecatte et al. 2012: 83–103).
Moreover, in order to preserve the mudbrick structures during the excavation process, several experimental techniques were tried out on the site. Thus, a thin layer of a mixture made of mud, straw, water and camel dung was applied over parts of the Buildings 1 and 2 (respectively the Great Mosque and a dwelling structure) by D. Gandreau, S. Moriset and L. Munduteguy.

**COMPLEMENTARY DOCUMENTATION**

L. Munduteguy drew the lithic material recovered from the prehistoric survey as well as pottery and artefacts from the excavation in al-Yamāma during the two field seasons.

In December 2012, Th. Sagory spent a week in the oasis to carry out an aerial photographic cover of the main archaeological sites by kite and balloon.

Photographs of pottery and artefacts were done by L. Munduteguy, Th. Sagory and P. Siméon; those ofolithics by R. Crassard and Y. Hilbert.

**Recording system**

The nomenclature we adopted for the recording of sites is as follows:

- **Prehistoric sites** are named AK (for al-Kharj) followed by a number in the order of their discovery, e.g. AK-01, AK-02, etc.
- **Protohistoric and historic sites** are named by their location, followed by a number if several sites have been discovered in a single area, e.g. al-ʻAfja, ʻAyn al-Ḍila’ 1, ʻAyn al-Ḍila’ 2.

The nomenclature we adopted for recording stratigraphic units and structures during the excavation at al-Yamāma is as follows:

- **Stratigraphic units** (called UF for Unité de fouille) are numbered continuously. Series of numbers have been attributed to the different excavated areas: 001 to 099 in area N6 (Sounding 1 and Building 1); 100 to 199 in area O7 (Sounding 2 in Building 2); 200 to 299 in area G17 (Sounding 3).
- **Structures** are numbered continuously, preceded by a letter indicative of the nature of the structure (W = Wall; F = Floor; P = Pit; H = Hearth; Ni = Niche; R = Room; A = Access; Po = Posthole; Co = Column; St. = other structure). For example, W.001, W.002, W.003, Co.004, etc. Series of numbers have been attributed to the different excavated areas: 001 to 099 in area N6 (Sounding 1 and Building 1); 100 to 199 in area O7 (Sounding 2 in Building 2).

The nomenclature adopted for recording artefacts, pottery and samples from protohistoric and historic sites is as follows:

- **Artefacts**: initials of the site + number of the stratigraphic unit or ‘surf’ when sampled on surface + number from 1 to n.
  Example 1: WH1.surf.3 for the third artefact collected on surface on the site of Wādī al-Hayāthim 1.
  Example 2: Y.022.5 for the fifth artefact collected in layer no. 22 during the excavation at al-Yamāma.
- **Pottery**: a specific number was attributed to each sherd indicative of a pottery shape (base, rim, handle, etc.). The number is written in the same way as those of artefacts. The only exception concerns sherds sampled on the surface of the site of al-Yamāma, where the abbreviation ‘surf’ (for surface) is preceded by a square number—the site of
al-Yamāma has been divided in squares of 50 × 50 m identified by a letter (A to R from west to east) and a number (1 to 21 from north to south) (**figs. 83, 85**).

Example 1: Y.001.1 for the first sherd from the first stratigraphic unit during the excavation at al-Yamāma.


- **Samples:** this category includes non-manufactured material (e.g. ash, bone, charcoal, date stone, eggshell, mother of pearl, shell, slag, plant), building material (baked brick, earthen coat, earthen floor, mudbrick, plaster) or pieces of unidentified artefacts (fragments of bronze, flint, glass, iron and steatite). They are all numbered S (for sample) + number of the stratigraphic unit or ‘surf’ when sampled on the surface + number from 1 to n.

Example: S.005.1 for the first sample (here bones) collected in stratigraphic unit no. 5 during the excavation at al-Yamāma.

All these data are recorded within a homogeneous recording system which has been set up to meet the requirements of both the survey of al-Kharj area and the excavation of the site of al-Yamāma. It is constituted of several related databases designed using *FileMaker Pro 10* software. It has been created by J. Schiettecatte and G. Charloux and is based on databases used by the past on previous projects. It has been completed by a photographic database based on the one used by the French-Saudi Mission in Madā'in Šāliḥ (dir. L. Nehmé, Fr. Villeneuve, D. al-Talhi) and designed by Jérôme Haquet (engineer at the UMR 9993 of the CNRS). A complete list of these related databases is shown in appendices to this introduction. These related databases are:

- Database of archaeological sites of al-Kharj area (Appendix 1);
- Database of photographs taken during survey and excavation (Appendix 2);
- Database of stratigraphic units (Appendix 3);
- Database of archaeological structures (Appendix 4);
- Database of archaeological artefacts (Appendix 5);
- Database of pottery (Appendix 6);
- Database of samples (Appendix 7).

The database of archaeological sites has been designed so as to be exported and used on a GIS (Geographic Information System), the software being used is *ArcGIS Desktop 10* designed by ESRI.

**The team**

In order to encompass a broad geographical and chronological approach, specialists in different fields have been called in. Their skills made it possible to go through both the environmental and cultural evolution of the oasis from the Middle Palaeolithic, down to the modern era.

Table 1 lists the team members in alphabetical order (see also Appendix 11).

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3 Details regarding this database are provided in Nehmé et al. (dir.) 2010: 19.
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<td>Al-Tayri Hamid</td>
<td>Archaeologist</td>
<td>Department of Archaeology and Museums, Kuwait</td>
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Table 1: List of the members of the archaeological mission in al-Kharj in alphabetical order – first and second seasons
Figure 1 The location of the oasis of al-Kharj and its setting (J. Schiettecatte – French-Saudi Archaeological Mission in al-Kharj)
Figure 2: Archaeological map of the oasis of al-Kharj (J. Schiettecatte – French-Saudi Archaeological Mission in al-Kharj)