1 Introduction

ROGER S. BAGNALL AND GAËLLE TALLET

Geographically and administratively, the Kharga and Dakhla oases of Egypt's Western Desert have formed a unit, from the Great Oasis of antiquity to the New Valley governorate of today (Fig. 1.1). From the first visits of western travelers in the nineteenth century to the archaeological work of the present, however, study of the oases has tended to be divided, sometimes into oasis-wide regional projects and even more often into the survey and excavation of individual sites or sub-regions. This division is a natural result of limited resources of all kinds, including time, regulatory approvals, and funding, but it tends to produce a somewhat myopic vision of the Great Oasis and make it hard for anyone not directly involved in fieldwork to get a clear idea of the region. Those who are engaged in fieldwork tend to visit one another's sites and have a more integrated sense of the oases, but this rarely makes its way into print. Even the triennial conferences of the Dakhleh Oasis Project, which gradually opened to scholars and teams involved in all the oases of the Western Desert, and the resulting volumes have largely juxtaposed rather than integrated the results of research across the oasis boundaries.

Yet the successive rulers of Egypt viewed the Great Oasis as a single administrative district from pharaonic times to the Roman period, adapting agricultural and irrigation techniques to the specificity of the sites and monitoring the agricultural exploitation and the economic traffic along the whole network of the caravan routes (see Bagnall and Tallet, Chapter 5 this volume). In our eyes, the former Great Oasis was never a secondary crossroad at the fringes of Egypt and northern Africa: it was not only a set of stops on a route, but played a crucial and strategic role in the North African economy and transport network. For this reason, the key sites of the Great Oasis played important administrative roles throughout history. Our investigations have shown that most of what is said in the modern scholarly literature on this subject is based on little or no evidence; the actual history is more complex and suggests earlier urbanization at Kharga and Amheida than has been supposed. The same may well be true of Mothis (Mut), although the destruction of most of that site makes it harder to assess its history.

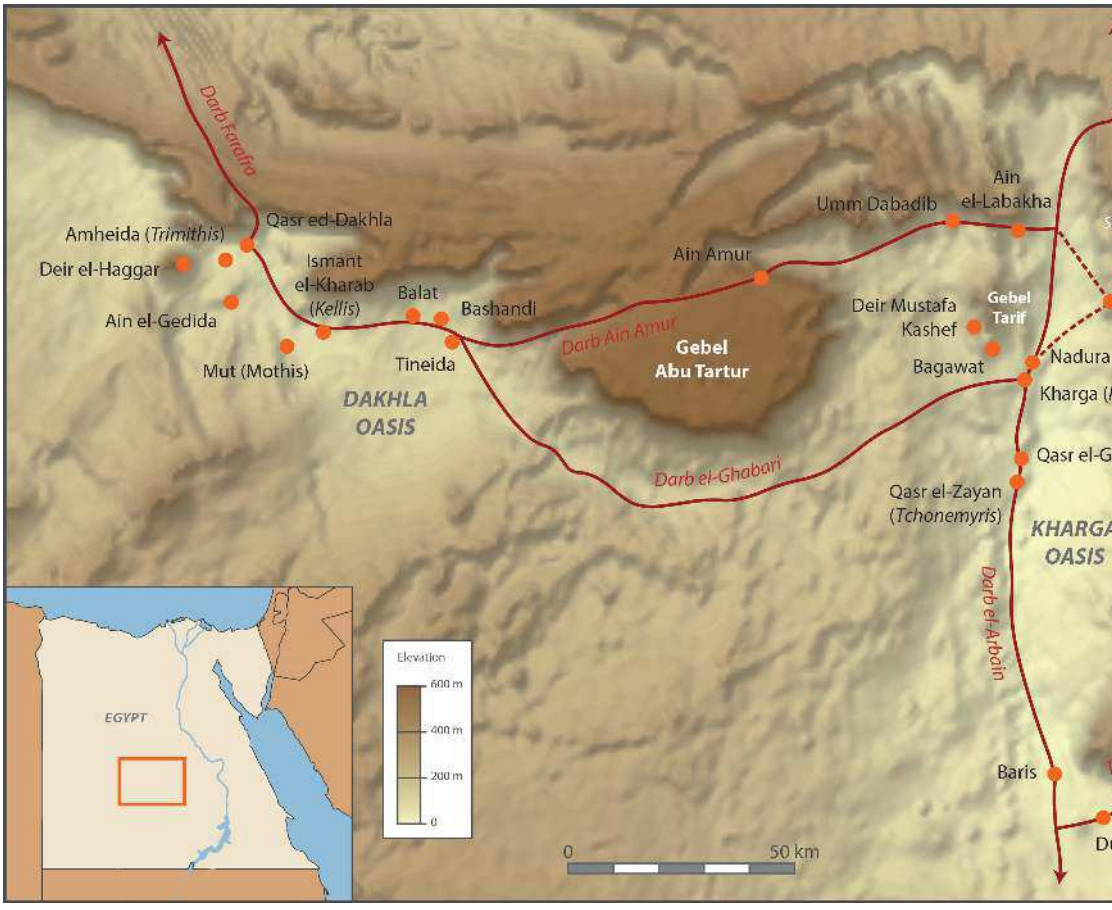

Fig. 1.1 The Great Oasis (R. Crouzevialle).

Oasis Magna: A Collaborative Investigation

This volume is the result of a collaborative project bringing together members of several archaeological teams, above all those studying El-Deir (Kharga) and Amheida (Dakhla), but also including in part the work of the North Kharga Oasis Survey and taking into account comparative material from other sites of both oases thanks to the involvement of some of the authors with those sites. The aim of the project was to look comparatively at these key archaeological sites in order to bring out both the common features shared across the Great Oasis and some of the particularities of the two oases and their sub-regions. This volume should certainly not be seen as an attempt at a general synthesis of work on the oases, which would require many more contributors and take fuller account of work done by other archaeologists at other sites, although much of their work is cited in the course of the following chapters.

Of the two sites that served as springboard for this study, the first, Amheida (ancient Trimithis), is located at the western edge of Dakhla Oasis and has been surveyed and excavated since 2001 by a team sponsored first by Columbia University and then by New York University. The excavations at Amheida began as part of the Dakhleh Oasis Project, an international venture now close to four decades old, dedicated to studying the interaction between human settlement and the environment over the long span from the earliest human presence in the oasis to modern times. Amheida itself (Fig. 1.2) has remains spanning nearly three millennia, from prehistory (Paleolithic material is found along its fringes) to the Late Roman period: an upper-class fourth-century AD house with wall paintings, an adjoining school, remains of a Roman bath complex, and a church have been excavated, along with a more modest house of the third century; and the temple hill, with remains of the temple of Thoth built in the first century AD and of earlier structures going back to the New Kingdom, with still earlier remains underneath, has yielded hundreds of decorated blocks from now-demolished buildings. Architectural conservation has protected and partly restored two standing funerary monuments, a mud-brick pyramid and a tower tomb, both of the Roman period.[1]

The second site, El-Deir (ancient *P3-sy*) (Fig. 1.3), is located at the northeastern edge of the Kharga Oasis, below the scarp of the plateau that delimits the oasis in the east. The site has been excavated since 1998, first under the direction of Françoise Dunand, and since then under that of

[1] Bagnall *et al.* 2015 gives a general introduction to the work at Trimithis.

Fig. 1.2 The settlement at Amheida, view (Excavations at Amheida).

Fig. 1.3 The settlement at El-Deir (G. Bosio).

Gaëlle Tallet, under the aegis of the University of Limoges.[2] At the site, the overlooking plateau reaches a height of 300 m above the bottom of the depression, and El-Deir is a starting point of the track connecting the oasis to Girga and Abydos, in the Nile Valley. The place has been occupied from prehistoric times (Paleolithic and Neolithic material is scattered all along the fringes of the site) to Christian times.

The dominant feature of the site is a well-preserved Roman mud-brick fortress located on a spring mound; this dates from the end of the third century AD. Located on another spring mound north of the fortress, a mud-brick temple has been excavated since 2006. It dates from the Ptolemaic period, but there were probably earlier stages in the temple's history. All around the fortress, five different areas of necropoleis have been excavated, dating from the Persian, Ptolemaic, and Roman periods down to Christian times (fourth and fifth centuries AD). Around the site, extensive remains of former fields and gardens are still visible, with wells and canals. In addition to continuing investigation and excavation of the archaeological evidence, the specific setting of Deir invites an exploration of the interaction between humans and their environment, along the lines pioneered by the Dakhleh Oasis Project. The survey of the prehistoric settlements identified by scattered flintstones in the southern and eastern areas of the site and the investigation with the physical and human geographies of the site should allow better insights into the chronologies and modalities of site occupation from the Middle Pleistocene (300,000 BP) down to twentieth-century oasis farmers.

Our approach to the Great Oasis is based on two main questions. The first is that of the definition of the oasis landscape and of its specific dynamics, articulating environmental constraints and human responses throughout the *longue durée*; these islands of green are studied as geographical and historical objects. The second focus is on the insertion of the oasis in a wider network and the unavoidable connectivity of oasis communities, involving specific economic models and management of the circulation across the desert. Being characterized by both extreme isolation and wide-ranging connectivity, the Great Oasis developed a "cultural idiosyncrasy"[3] and at the same time opened itself to foreign influences.

[2] The project is funded by the Agence Nationale pour la Recherche (successively ANR 09-JCJC-0142 and ANR-15-CE03-0004) and the Région Limousin.

[3] Kaper 2012b: 721.

The Oasis Landscape: Of Water, Sand, and Men

A thorough geomorphological survey of the site of El-Deir, based on satellite image interpretation and fieldwork observations, was undertaken in 2008 by Jean-Paul Bravard and Romain Garcier, as a first step toward understanding the past organization of the agricultural landscape and grasping the interactions of humans and their environment. An important part of the collaborative project was the extension of their methodology through a similar geomorphological and geoarcheological survey at Amheida and in its surroundings. This survey included soil sample collection and analysis, and combined on-the-ground exploration with use of aerial and satellite imagery.

The results are focused on water and wind. The scientific literature recognizes that there was a fairly dramatic evolution of climatic conditions around 5300 BC, when the Western Desert saw a gradual change in precipitation quantities (less rain) and patterns (African monsoon shift toward the south):[4] this aridification front both gave birth to the Libyan desert and set the conditions for the appearance of oases, now acting as refuges and providing water for human communities. The comparative exploration of the water systems developed in Amheida and El-Deir was a major goal of the project. Both oases have depended over millennia on artesian springs and wells bringing water from the sandstone aquifer under the oasis floor to the surface for irrigation (see Rodney Ast, Chapter 6 this volume), but even internally the oases show much variety in how humans exploited water supplies, and in fact their geologies are not uniform (Jean-Paul Bravard, Chapter 2 this volume). Following Bernard Bousquet's discovery in Manawir in 1994, excavations and surveys have documented the specificity of the irrigation system developed in the Kharga Oasis, in all likelihood since the Persian period (sixth to fourth centuries BC). In the north and south of the oasis, very sophisticated aqueducts, built with a technique perhaps imported by the Persians, have been unearthed: the qanats. Showing an extraordinary adaptation capacity to the oasite milieu, this system consists in a series of subterranean channels concentrating water from the water tables located in the rock and debris layers of the desert plateau, particularly in low hills, and carrying this water to the fields located at the bottom of the oasis depression. In the north, qanats have been discovered in Ain el-Labakha and Umm Dabadib along the road to Dakhla, in connection with Roman fortresses. In Dakhla, the situation

[4] Bubenzer and Riemer 2007.

seems to have been dramatically different: water was available everywhere, with hundreds of wells and artesian sources.

Strikingly, although the system of the qanats is well documented in the neighboring sites of Ain el-Labakha and Umm Dabadib, no qanat has been discovered in El-Deir. The first campaign of the geomorphological survey, led by Jean-Paul Bravard and Romain Garcier in 2008, found that the site was geomorphologically unique in Kharga, but with many shared geographical characteristics with the sites in Dakhla. The location of El-Deir, however, had as one of its particularities a vulnerability to flash flood erosion, thanks to the ability of the surrounding hills to concentrate the water runoff from the rare but sometimes torrential rains. Amheida, on the other hand, was far enough from the scarp surrounding the Dakhla Oasis not to be subject to such flooding. But it was instead vulnerable to the wind, which produced both episodes of severe erosion (and thus deflation of the agricultural soils and urban setting) and a constant need to dodge the perpetually moving sand dunes that marched down from the scarp and through the oasis, creating a shifting urban landscape (Paola Davoli, Chapter 4 this volume).

Managing the Oasis: The Impossible Isolation

Adapting to the oasis environment and making water available was and still is a primary necessity. But, in order to make a living, oasis people cannot live in total autarky: they need to be connected to other areas (and oases as water spots are steps on trans-desertic roads) and to provide specific commodities and resources, so that the travel is worth the cost.

The two sites are connected by two important desert routes, running east–west and protected by a chain of Roman fortresses: the Darb al-Ghubari, which ran south of the Abu Tartur plateau and linked Kharga to Dakhla, and the Darb Ain Amur, which linked the two oases by crossing the northern part of the Abu Tartur plateau. These routes are described in Salima Ikram's contribution to this volume (Chapter 8). On the latter road, there was a resting station at the spring of Ain Amur. Two fortresses were built on this road, Ain el-Labakha and Umm Dabadib, both displaying very significant water systems for irrigation (aqueducts). The fortress of El-Deir (Fig. 1.4) is to be connected to this chain of fortresses surrounded by extensive agricultural landscapes and equipped with sophisticated water systems.

Figure 1.4 The El-Deir fortress (B.-N. Chagny).

The network, however, is much wider. El-Deir, at the starting point of one of the quickest roads to the valley, would have been a perfect check-point on the tracks leaving the oasis toward the east, and the last water point before the seven-day trip to the valley. Other connections with the valley opened up at Dush, in southern Kharga, or at Balat in Dakhla. But the oasis was also the gateway for further expeditions inside the desert lands. Since prehistoric times, people in Egypt walked through the Western Desert, as many inscriptions attest in the Eastern Sahara. In pharaonic and Roman times, great expeditions were undertaken in quest of mineral resources or commercial exchanges. In the network of the desert tracks, the western oases played a key role, as they were a link between Egypt and the deeper desert, as well as both south and west to other parts of Africa. The oases themselves produced a number of resources, both mineral and agricultural, needed by the society of the Nile Valley, either because they were lacking in the valley or because they could be produced far more efficiently in the oases. The desert routes were thus of substantial economic importance to Egypt, most of all in the Roman period. It is no surprise that the Romans built a chain of fortresses along the caravan routes crossing the Kharga Oasis.

Among the traces of this network of commerce, a central place is occupied by pottery. A substantial part of our project was devoted to the study of the ceramic finds from both excavation and survey, and to the training of a new generation of ceramicists. This effort was led by Pascale Ballet (then University of Poitiers, now University of Paris Nanterre). As her chapter (Chapter 9) in this volume shows, the pottery assemblage at all sites in the oasis is overwhelmingly local in production, the result of needs for transportation, cooking, and serving within these sites and their immediate hinterlands. At the same time, however, the sites have yielded North African fine wares (North African Red Slip Wares) and imported amphoras from the Nile Valley and elsewhere (Clementina Caputo, Chapter 10 this volume). The oases thus had access to imported products. And the trade was not in one direction, for the oases also produced the pottery used for exporting its own products (Irene Soto Marín, Chapter 11 this volume).

Among the commodities liable to exportation, one can mention wine and olive oil, but also ochre and alum.[5] In this web of exchange, El-Deir occupies a key location, as a kind of switching-point, through which the traffic to and from the valley was funneled (Yaël Chevalier, Chapter 12 this volume). This function suggests that the commerce was largely channeled via the Nile Valley and the desert routes from it to the oases, rather than (in the case of the North African Red Slip Wares) coming directly across the long desert caravan routes from Libya. Other commodities and specific oasis resources have been highlighted in the recent literature, such as cotton.[6] In the economy, where we can see profound commonalities between the oases, asymmetries in our knowledge have come to light that may be fertile bases for future research. An example is the important role of castor oil in the Kharga Oasis in the Persian period, revealed by the Demotic ostraca from Ain Manawir (Damien Agut-Labordère, Chapter 7 this volume). No evidence for this has yet been found in Dakhla, but no one has been looking for it, either. It may have been one of the high-value crops of the pre-Greco-Roman oasis world.

Indeed, these areas should not be deemed as gray zones located at the margins of major political entities, be they the pharaonic or Ptolemaic state, or later, the Roman Empire. Controlling them and managing their access was of crucial importance for states, and certainly was from pharaonic times until the late imperial period (see Bagnall and Tallet, Chapter 5 this volume).

[5] For an overview and bibliography, see Tallet forthcoming.
[6] Bagnall 2008b; Tallet *et al.* 2012a.

Another glimpse of the administrative and security stakes for the government of Egypt in managing the Great Oasis has emerged from an unexpected find at El-Deir, an important papyrus now being prepared for publication by Tallet. This shows a Ptolemaic settlement of Greeks, probably soldiers, in El-Deir. No comparable evidence is yet known from Dakhla – indeed, Amheida has so far yielded almost no Ptolemaic material at all – but, if military settlers were placed in both parts of the Great Oasis by the Ptolemies, it would make a great deal of difference to our appreciation of the development of the oases in the Ptolemaic and Early Roman period. Indeed, there was a major debate among historians concerning the presence of the Roman army in the area, as fleshed out by the building of an important chain of fortresses. The purpose of the fortified network was first approached through the *limes* theory of outposts located in the oases, working as a defensive military border against the threat of barbarian nomads at the edges of the Empire.[7] This historiographic trend has long been called into question, and the scanty ancient sources make it difficult to be sure just how early these nomadic threats became significant to the viability of the oases. In light of Michel Reddé's pioneering work,[8] augmented by the extensive sources on the military presence in southern Kharga in the fourth century and at Dush in the fifth century, it appears that there was no permanent garrison stationed in the oasis before the late third century, but rather, as shown by Carrié,[9] there were only "detached" soldiers on patrol from the Nile Valley. At the level of the Great Oasis, it is not hard to imagine that the two metropoleis of Hibis and Trimithis were equipped around AD 288 with fortified warehouses, located at El-Deir and El-Qasr, in which provincial residents came to deposit in-kind tax contributions. Carrié also showed that the soldiers detached from the valley, especially those of the *Ala I Abasgorum*, were charged with overseeing the payment of customs, and probably monitoring the traffic on the desert roads. The symbiosis with oasis civilians is one of the striking features of the presence of the army in this area (see Ast, Chapter 6 this volume).

The Oasis Culture

The picture of the Great Oasis population provided by Dunand and Lichtenberg is that of a Mediterranean type with strong similarities with

[7] This was mainly based on J. Lesquier's work on Rome's Egyptian army: Lesquier 1918.
[8] Reddé 1999; 2007. [9] Carrié 2004.