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On the Route to Siwa

A Late Roman Roadhouse at the Cistern Site

Abar el-Kanayis on the Marmarica-Plateau

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(with contributions by VICTORIA ASENSI, URSULA THANHEISER, NADJA PÖLLATH
and HANS-CHRISTOPH NOESKE)

1. The location

1.1 The Marmarica-Plateau between the Mediterranean coast and the Sahara

Anyone who moves between the Mediterranean coast and the Qattara Depression, where the Oasis of Siwa is situated, crosses the northern fringe of the Libyan Desert, called the Marmarica-Plateau. The term is taken from the ancient name of the region – Μαρμαρική – as given in the sources¹. The limestone plateau is plain, stony, and uniform, mainly a dry (full) desert. However, to the North, vivid harbour cities like Paraitonion (Marsa Matruh), Leuke Akte (Ras el-Hekma) and Ainesisphyra (Sidi Barrani) are situated on the Mediterranean coast. 300 km to the south, the Oasis of Siwa constitutes a center of exchange and production in the Northeastern Sahara (Fig. 1). To the west and east lie the fertile regions of the Nile Valley and the Green Mountain, the Gebel el-Akhdar in the Cyrenaica. Nevertheless, even in the semi-arid Marmarica, it was possible to cultivate crops on favourable spots in its northern parts, based on water harvesting systems².

Due to the economically significant regions and infrastructurally developed centres bordering the

plateau it is a territory transected by routes for the exchange of goods (Fig. 2). Water is an essential need on these routes through drylands and deserts – either for people or pack animals and livestock. For this purpose a dense net of cisterns, most of them dating back to antiquity, is spread over the Marmarica-Plateau³.

The artefacts – mainly pottery – range generally from Graeco-Roman age to recent times at all of the 18 surveyed cistern sites, while nine of them, particularly those further south, were equipped with buildings for shelter and rest for passers-by in the Marmarica-Plateau's harsh environment (Fig. 2). As revealed by the closer study of one of the cistern sites, all these buildings can be assumed to date back to ancient times: Abar el-Kanayis, the 'church cisterns'⁴ almost 50 km south of the Mediterranean coast, is one of the continually frequented cistern sites on the Marmarica-Plateau showing not only water supply installations but solid building structures (Fig. 3, 4). Since it is situated on the route to Siwa (Masrab Istabl) that is still in use today, the site was chosen to be examined as an example of the ecological conditions, functional features, chronological range of use, exchange of goods and characterisation of people who frequented cistern sites⁵.

(A.-K. R.)

¹ PLINIUS, *Naturalis Historia*, 5, 49; PTOLEMAEUS, *Geographia*, 4, 5, 2–4.

² TH. VETTER/A.-K. RIEGER/A. NICOLAY, *Ancient Rainwater Harvesting Systems in Northeastern Marmarica (Northwestern Egypt)*, in: *LibSt* 40, 2009, pp. 9–23 (hereafter TH. VETTER ET AL., *Rainwater Harvesting*).

³ TH. VETTER/A.-K. RIEGER/H. MÖLLER, *Water, Routes and Rangelands: Ancient Traffic and Grazing Infrastructure in the Marmarica (Northwestern Egypt)*, in: F. FÖRSTER/H. RIEMER (eds.), *Desert Road*

Archaeology in Ancient Egypt and Beyond, Africa Praehistorica 26, Cologne 2013, pp. 455–484 (hereafter TH. VETTER ET AL., *Routes*).

⁴ Its name 'church cisterns' reflects on building structures at the site even though a church architecture in the literal sense of the word is not to be expected. A Christian oral tradition at the site in the Matruh region tells of a golden cross buried at Abar el-Kanayis.

⁵ Survey, documentation and excavations were conducted in three seasons. Besides the authors, there were B. BÖHM, B. EMME, O. KLAMMER, O. SALLAM (MSA), A. RIFAT (MSA) working at the site.

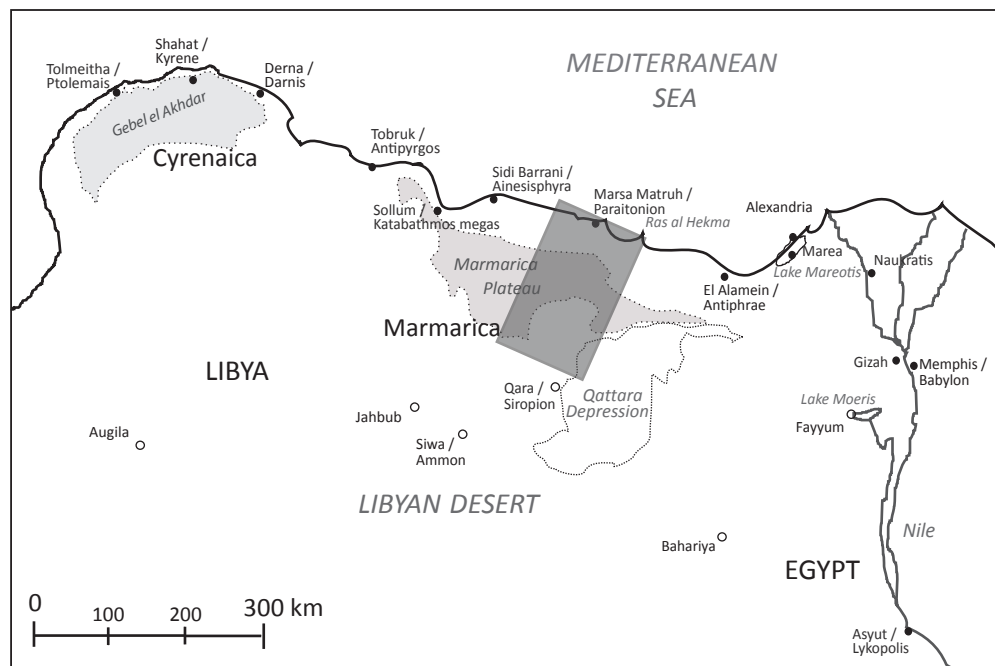


Fig. 1 Map of Northern Libyan Desert with the investigation area of the Eastern Marmarica-Survey (map A.-K. RIEGER)

1.2 The depression of Abar el-Kanayis – its geographical, ecological and hydrological situation

The site of Abar el-Kanayis lies on the Northern Marmarica-Plateau (Fig. 2) to the west of the modern road to Siwa that follows an old trail called Masrab Istabl. A pass between two mesas of the *qaret* (hills) el-Kanayis was presumably used as a landmark by travelers on the 300-km-journey to Siwa (Fig. 3). A natural depression of approximately 1 km² size is situated southwest of the pass.

The Northern Marmarica-Plateau, where the depression of Abar el-Kanayis is to be found, belongs, from an ecological point of view, to a desert environment, however less extreme than on the Central Marmarica-Plateau, beginning at 90 km coastal distance or the hyper-arid extreme desert, south of 150 km coastal distance⁶. The geological underground of the Marmarica-Plateau consists of limestone, dolomite and marls. Both sand and loess are rare here, not enough to form considerable deposits as dunes. On

the Northern Marmarica-Plateau – a zone of less extreme aridity with a natural, predominantly scattered vegetation cover – the relief is characterised by a cuesta plain. The altitudes on the plateau range between 200 and 250 m a.s.l., while mesas and intermittent plains or depressions dominate the topography. In the Arabic terms, relief units and prominent relief features are denoted as continent, hill (*qaret*), spur (*minqar*), grazing ground (*hatiya*), camp (*ghot*) and depression (*deir* or *ghot*).

Vegetation cover, cistern density and rainfall records are indirect evidence that rainfalls and overland flow are common on the Northern Marmarica-Plateau, receiving winterly rainfalls between 80 mm (north) and 45 mm (south)⁷. Overland flow plays an important role for vegetation distribution, sediment relocation from higher locations into depressions, and coherent water drainage patterns. Depressions serve as sinks for overland flow, adding a surplus of water and accumulating colluvial material that serves as water storage (Fig. 3, 5a). The ecological conditions in depressions thus may be more favourable than zonal agro-meteorological parameters indicate.

⁶ For the ecological zoning see TH. VETTER ET AL., *Routes*, generally adopting the view of K. STAHR ET AL., *Veränderung von Böden und Vegetation am Übergang von Halbwüste zur Vollwüste zwischen Mittelmeer und Qattara Depression in Ägypten*, in: *Geokodynamik* 6, 1985, pp. 99–120, where the boundary between semi-desert and (full) desert is marked by the 50 mm isohyet. TH. VETTER ET AL., *Routes* introduces transition zones based on field observations (see here in Fig. 2); see also TH. VETTER, *Zum rezenten Niederschlags-*

geschehen an der ägyptischen Nordwestküste, in: *Zentralblatt für Geologie und Paläontologie*, Teil 1, Heft 1/2, 1998, pp. 185–195 (hereafter TH. VETTER, *Niederschlagsgeschehen*).

⁷ The cistern density in that zone of the Marmarica is around 5/100 km² equivalent to an average distance between the cisterns of 5 km which is indirect evidence for suitable water availability conditions (see TH. VETTER ET AL., *Routes*, Fig. 2).

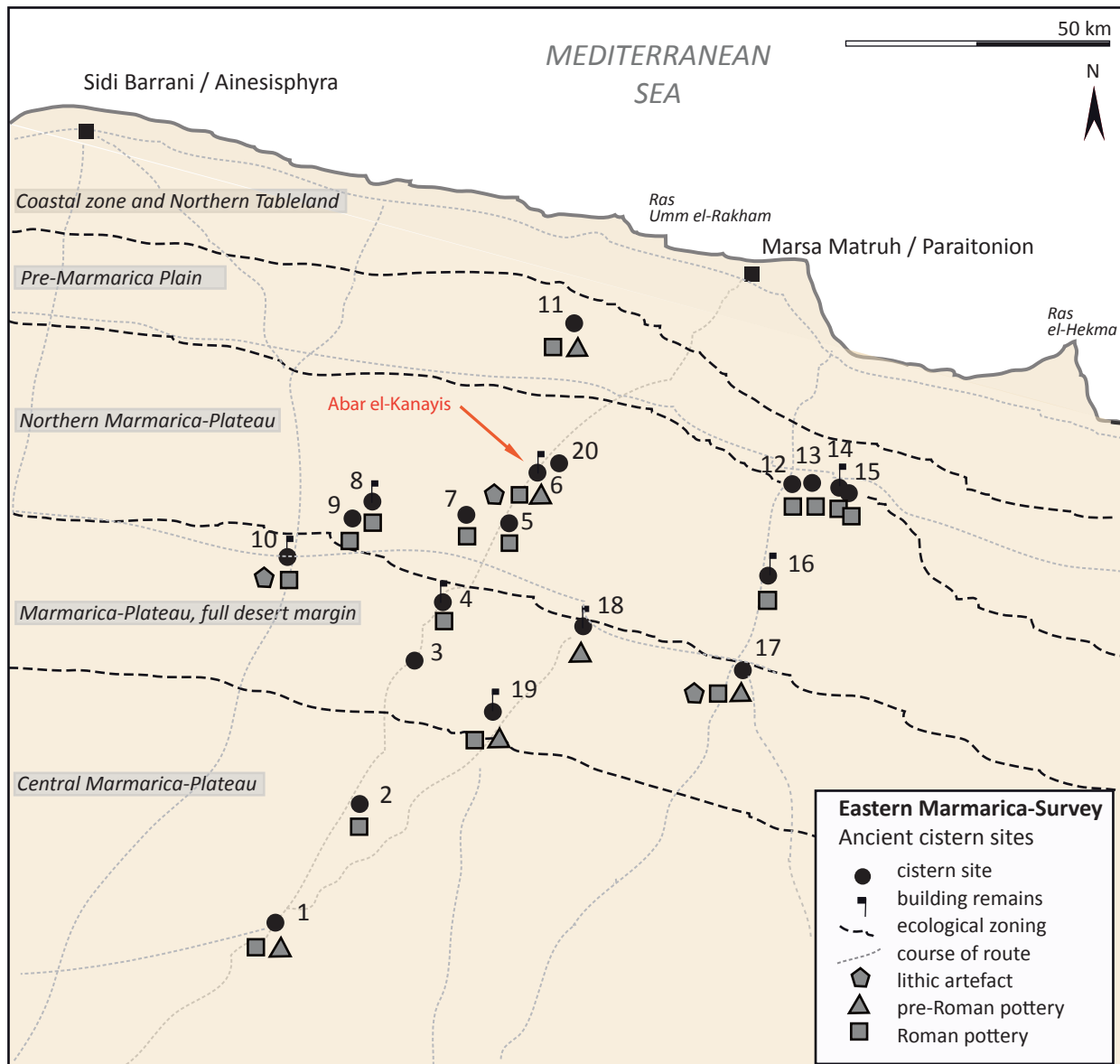


Fig. 2 Cistern sites along routes on the Marmarica-Plateau (detail): 1 Bir el-Nuss, 2 Bir Fuad, 3 Bir Istabl, 4 Bir Hilw, 5 Bir Emtiha, 6 Abar el-Kanayis, 7 Bir el-Awra, 8 Bir Abu el-'Igl, 9 Bir el-Qatir, 10 Bir Qatrani, 11 Abar Abu Imama, 12 Bir Abu Shayit, 13 Bir Abu Batta, 14 Bir Siayim, 15 Bir Abu Kirdu, 16 Bir Khalda, 17 Bir Abu Mukhayat, 18 Bir Quseir, 19 Bir Qasr es-Sirr, 20 Bir el-Naga (map A.-K. RIEGER)

Compared to the rocky, stony bedrock outcrops, the depressions may indeed appear as *hatiyet*, as grazing grounds, where camel breeding remains feasible (Fig. 5b). Due to the calcareous bedrock, wells or springs tapping groundwater are rare on the plateau, with springs becoming somewhat more frequent on the descent to the Qattara Depression, which is the other side of the karstic underground drainage of the plateau. Shallow leptosols dominate, while in depres-

sions such as Abar el-Kanayis, calcisols may occur due to colluvial import from the catchment areas⁸. Bedrock outcrops constitute a significant fraction of the land surface (Fig. 5a).

Although soils in depressions may show an increase in exchangeable sodium and electric conductivity, plenty of depressions accommodate a denser vegetation cover than is typical for the general ecological conditions. The good underground drainage

⁸ O. KLAMMER, *Differenzierte Ressourcenausstattung an der semiariden Nordwestküste Ägyptens – nomadische und sesshafte Lebensformen in einem physisch-geographischen Raum*, in: R. KATH/A.-K. RIE-

GER (eds.), *Raum – Landschaft – Territorium. Zur Konstruktion physischer Räume als nomadischer und sesshafter Lebensraum*, *Nomaden und Sesshafte* 11, Wiesbaden 2009, pp. 55–70.

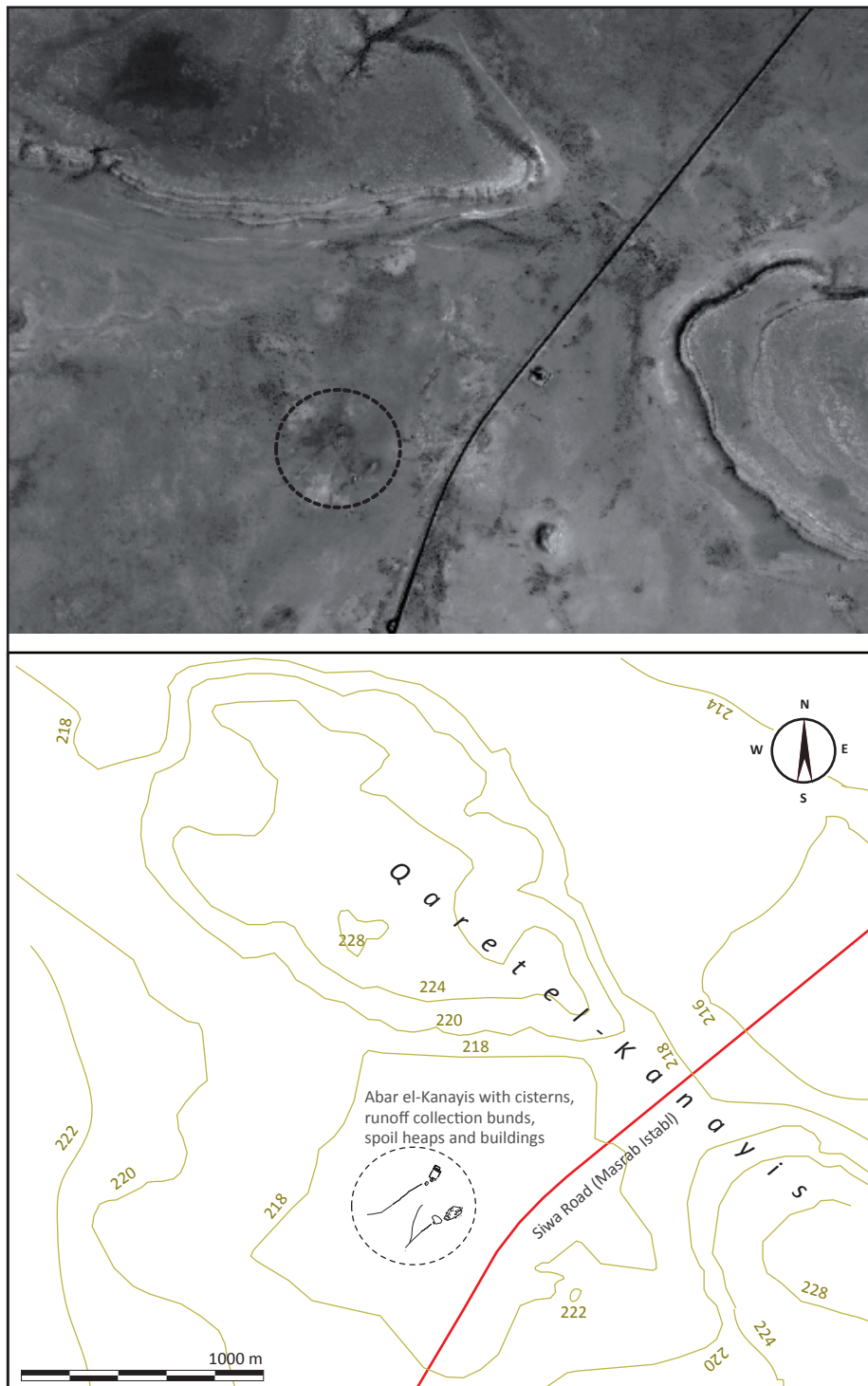


Fig. 3
Topographical map and
satellite image of the area at
Abar el-Kanayis (map TH.
VETTER, satellite image
Quickbird, Eurimage)

certainly plays an important role in leaching soluble salts. Even though sand is generally rare on the plateau, some patches occur in the Abar el-Kanayis depression and enhance the conditions for drought-tolerant shrub vegetation (Fig. 5). *Acacia* trees, shrubs of

species like *Artemisia inculta* and *Atriplex halimus* are today's endemic plants in the area⁹. Remains of a *Chenopodiaceae* type to which *Atriplex* belongs were scattered in the context of the ancient burials (AKA 70). A spine of an *Acacia* type from an archaeo-

⁹ M. M. ABDEL GHANI/R. BORNKAMM/F. DARIUS, *Plant Communities in Two Vegetation Transects in the Extreme Desert of Western Egypt*, in: *Phytocoenologia* 33/1, 2003, pp. 29–48; R. H. BORNKAMM/

H. KEHL, *Pflanzengeographische Zonen in der Marmarika (NW-Ägypten)*, in: *Catena* 14/4, 1987, pp. 275–289.

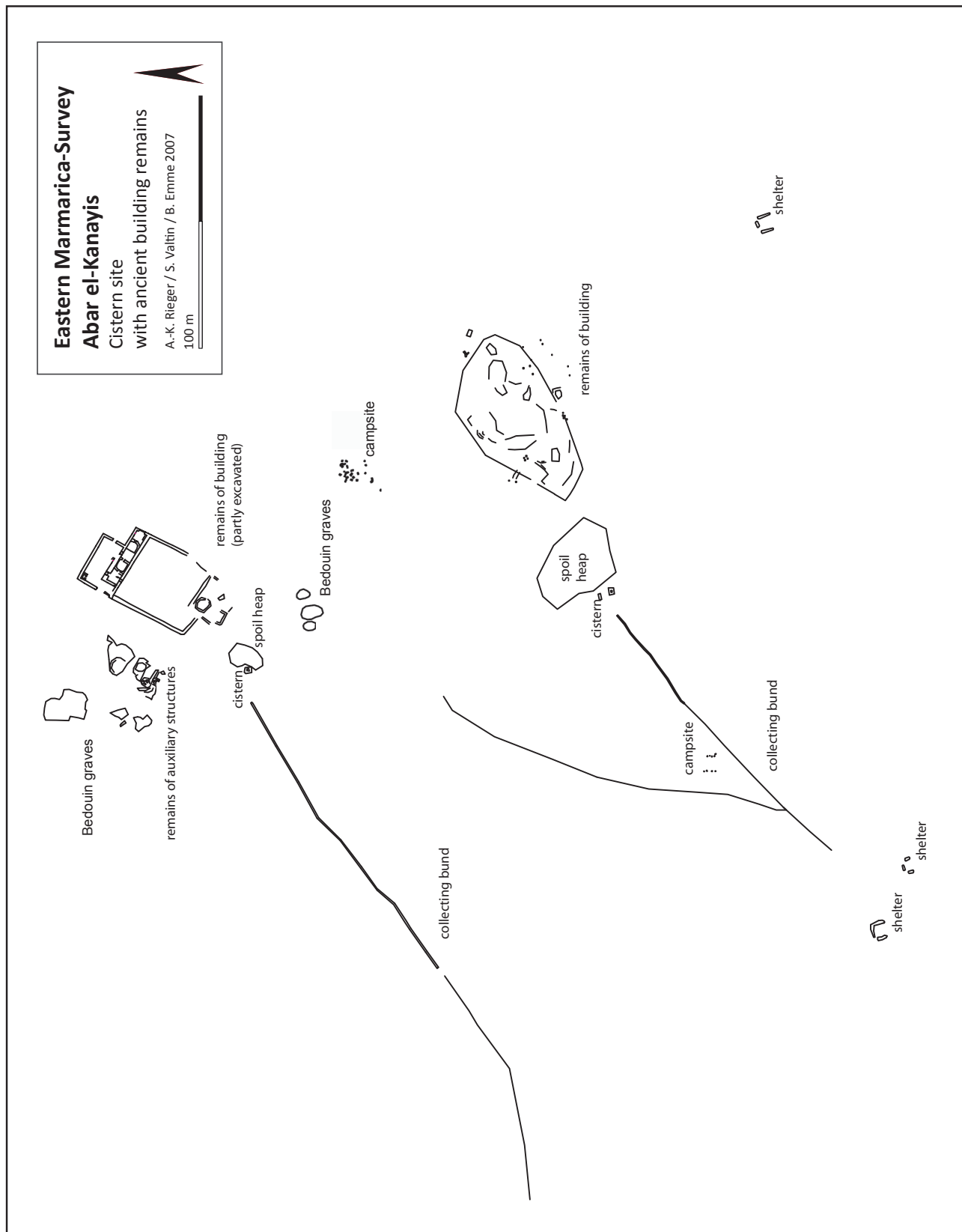


Fig. 4 Map of the site of Abar el-Kanayis (drawing A.-K. RIEGER/S. VALTIN/B. EMME)

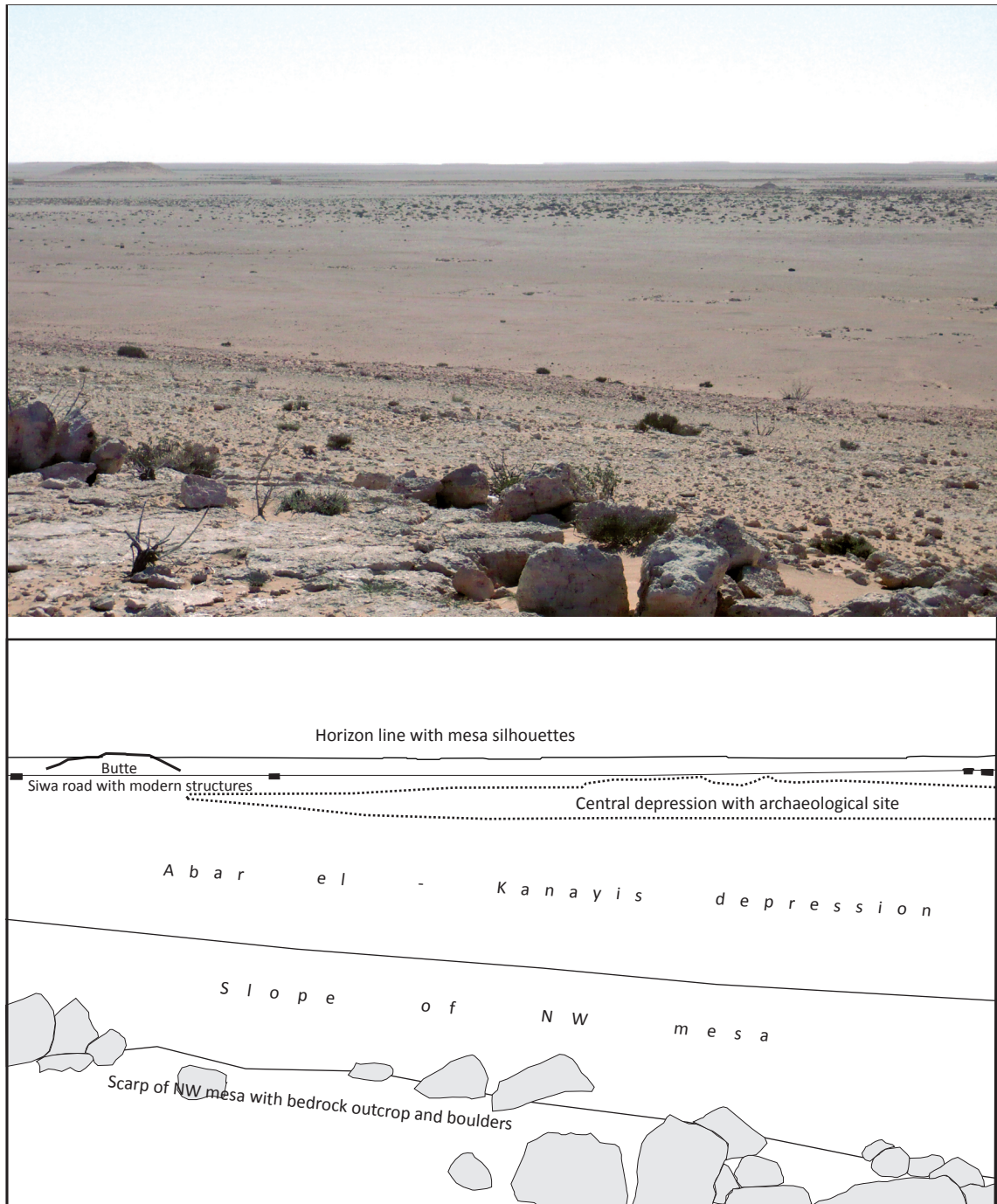


Fig. 5a Terrestrial view of the Northern Marmarica-Plateau at Abar el-Kanayis (map TH. VETTER, photograph A.-K. RIEGER)

logical stratum dated to Late Roman times reflects that most probably the natural flora at the desert margin was the same in antiquity as it is today¹⁰. *Sal-sola*, a shrub belonging to the family of Amaranthaceae, was also found in that chronological context

as well as in the sand layers after the abandonment of the building.

Because of the favourable runoff conditions in the depression, two cisterns were laid out in former times, as testified by the Graeco-Roman pottery frag-

¹⁰ For the phases see Tab. 1. It remains unclear whether *Acacia* trees grew directly in the depression or the wood was brought from another area onto the Plateau to serve as fuel.



Fig. 5b
Camels in the depression of Abar el-Kanayis with shrub vegetation. In the foreground is the wall of the courtyard of the northwestern building, in the background the *qaret* (cf. Fig. 3, photograph A.-K. RIEGER)

ments (Fig. 3, 4, 8a). The surface runoff flows to the north, even though the surface gradient does not exceed 0.2 %. Assuming a size of the cisterns' catchment area of 1 km² and a harvest of 1 mm of rain, which is a very conservative estimate, the rainwater harvest would amount to 1,000 m³. This volume clearly exceeds the cisterns' storage volumes of approximately 370 m³. However, it has to be considered that the effectively contributing part of the depression may be smaller, the runoff coefficient may be much greater and, most importantly, there is a high interseasonal rainfall variability¹¹.

(TH. V./U. TH./V. A.)

2. The site

2.1 Remains and finds at Abar el-Kanayis

The site itself consists of various parts and features belonging to different time periods: There are the cisterns, their spoil heaps, manholes and bunds as well as two heaps covering building structures, situated to the northeast of the cisterns (Fig. 4, 6a, b). Additionally one can see Bedouin graves and remains of

campsites, fireplaces, and shelter footings (Fig. 7a–c) scattered in the depression, associated with fragmented pottery (Fig. 8a). The most recent occupation of the site, leaving remarkable remains, took place in WW II, when a camp of British Commonwealth troops was installed on the eastern side of the track to Siwa, where a butte forms a mark in the landscape (Fig. 7d)¹². Littered cans, bullet casings and other small metal fragments give evidence of the site's utilisation by the military also on the western side of the track, where the cisterns lie (Fig. 8b).

The oldest find in the depression of Abar el-Kanayis is a bifacial, long tanged arrowhead made from a beige platesilex (Fig. 8c). The material differs remarkably from the reddish silex material available at the site, particularly on the *qaret* to the north of the depression. The preliminary assessment of the surface find alongside photographs was conducted by K. KINDERMANN and H. RIEMER (Cologne), who see a resemblance with pieces from the Western Desert of the Middle and Late Holocene, at the earliest from the 6th/5th millennium BCE, and with pieces from the Oases in the Western Desert produced up to the 5th millennium BCE. The serrated edges, however, are characteristic of later, i. e. Negade or Predynastic, arrowheads from the Nile Valley¹³. If no comparable finds can be added, it will remain open for discussion

¹¹ TH. VETTER, *Niederschlagsgeschehen*.

¹² Cf. A. ROSS, *The Official History of New Zealand in the Second World War 1939–1945*, Historical Publications Branch, Wellington 1959, p. 100. The layout of the tent camp from 1940–42 is still re-

cognisable in the sands, while plenty of uniform buttons testify to the presence of soldiers.

¹³ We thank K. KINDERMANN and H. RIEMER (Forschungsstelle Afrika) for the assessment of the arrow head.



Fig. 6a
Spoil heap and
water collection bund of the
southeastern cistern at Abar
el-Kanayis, (cf. Fig. 4), view
to northeast (photograph
TH. VETTER)



Fig. 6b
The northwestern building
at Abar el-Kanayis and its
courtyard wall, covered by
drifted sands. At the northern
end of the building the higher
debris heap marks the chain
of rooms (cf. Fig. 10), view
to northeast (photograph
O. KLAMMER)

whether the arrowhead as a surface find could be considered a marker for human activity at Abar el-Kanayis during these early times.

There are some more signs of human presence mainly to the south of the depression, for example u- and crescent-shaped stone settings that may have served as tent or shelter footings or simply markings

(Fig. 7a). Unfortunately they do not offer any features that could indicate their precise function or chronology. Intentionally accumulated stone heaps are sometimes associated with a small amount of sherds (Fig. 7b)¹⁴. They may have been fireplaces, since some of the stone cobbles show signs of firing, but they show neither typologically recognisable forms nor

¹⁴ The wheel-made pieces are not diagnostic and the hand-made fragments belong to a thick-walled Northern Libyan Desert Ware (see A.-K. RIEGER/H. MÖLLER, *Northern Libyan Desert Ware – News*

on Shell Tempered and Other Hand Made Pottery from Eastern Marmarica, in: *LibSt* 43, 2012, pp. 11–31, hereafter A.-K. RIEGER/H. MÖLLER, *Northern Libyan Desert Ware*).



Fig. 7a Crescent-shaped shelter footing (photograph A.-K. RIEGER)



Fig. 7b Fireplace (burnt limestone and pottery fragments, scale bar 50 cm, photograph A.-K. RIEGER)



Fig. 7c Campsite with scattered stones and ashlar as tent footing (photograph A.-K. RIEGER)



Fig. 7d View on the WW II camp at the foot of the butte east of the modern road (photograph A.-K. RIEGER)

chronologically diagnostic characteristics. For one campsite (Fig. 7c) people used the stones from the buildings, indicating a *terminus post quem* after their abandonment in the 6th century CE. The scattered surface finds consist mainly of pottery sherds dating to Graeco-Roman times, with a clear peak in Late Roman times (Fig. 8a–c).

Apart from the installations for water supply (cisterns and collection bunds), there are also solid structures at Abar el-Kanayis erected to the northeast of the cisterns, thus not facing the water, when coming from southern directions (Fig. 3, 4, 6a). The walls of the buildings are partly undestroyed and still visible under a layer of drifted sands (Fig. 6b), partly ruined with some ashlar scattered around or used for recent camp sites (cf. Fig. 7c) or as cover for Bedouin graves.

In the northwestern building, more detailed examinations were undertaken since it is less covered

by drifted sands than the southeastern building. Due to the excavation we were able to evaluate the chronology and layout of the northwestern building; the southeastern untouched *tell*, however, seems to be very similar according to the dimensions, layout and material.

2.2 The northwestern building at Abar el-Kanayis – construction technique and layout

The general layout of the building is still roughly recognisable on the surface: A large courtyard of more than 600 m² is bordered by a row of rooms on its northern and southern sides (Fig. 4). On the northern side, a smaller courtyard completes the building. The northern part of the complex was investigated more closely by opening seven trenches (Fig. 9, trench 2, and 6 to 11).

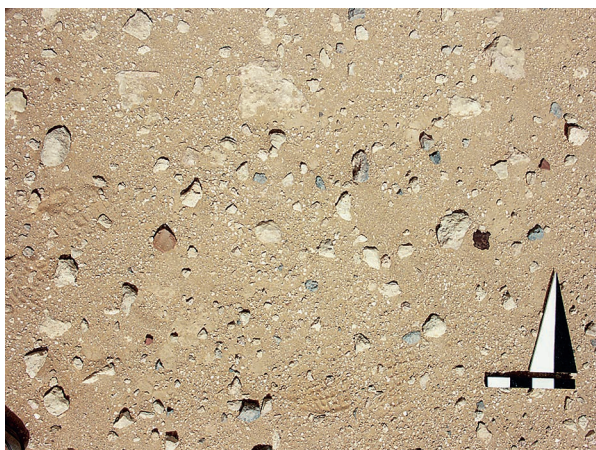


Fig. 8a Typical surface at Abar el-Kanayis in the surroundings of the northwestern building with little and fragmented pottery (scale bar 20 cm, photograph A.-K. RIEGER)



Fig. 8c Lithic arrow head, surface find (photograph H. MÖLLER)



Fig. 8b Surface artefacts from different periods of use at Abar el-Kanayis (photograph A.-K. RIEGER)

The building material consists of a lacustrine limestone that heavily weathers when exposed to climatic impacts, and of mudbricks (Fig. 6b, 10, 11). The double-faced base walls are made of well cut limestone ashlar, filled with cobbles and earthen, loamy mortar (Fig. 10b, 12). They reached a height of at least 1.20 m, as the preserved four courses of ashlar in wall 61 and 113 testify (Fig. 12b). The base walls of ashlar were erected directly on the natural rock (58, only with a thin levelling layer beneath, 57 in case of wall 113, 42 in case of wall 11, 69 in case of wall 61, and 93 in case of wall 10; Fig. 14a, b, 12b, 17c) without any construction pit due the negligible soil strata on

the desert margin, which generally do not exceed 30 cm.

Above that, mudbrick is used for the mural construction (walls 1, 10, 11, 61, 83, 95, 113; Fig. 11). A remarkable amount of straw and rachis of barley (*Hordeum vulgare*) was found to serve as tempering for the mudbricks (e. g. of wall 96, Fig. 13)¹⁵. Loamy soils and water were available on site in the depression; but the temper – barley straw – had to be brought to Abar el-Kanayis, a place on the desert fringe, where the sebhka soil and water conditions are not at all suitable for crop cultivation.

Two different base wall dimensions are recognisable: Smaller walls, used for the separation of single rooms (wall 10, 113), are quite constantly 1.0 m in width, while the thicker walls around the large and the small courtyard measure 1.2–1.3 m (61, 13). In the staircase on the northeastern wall of the rooms, the usual narrow width of 1.0 m is doubled to 1.9–2.0 m (wall 89, Fig. 9, 12c, 16a) – likely to carry a corridor in the upper part. The three different base wall dimensions correspond to four, five or eight lines of mudbricks in the rising construction, since the mudbricks measure 24 × 24 cm (Fig. 11b), which is slightly smaller than mudbricks found in settlements in Eastern Marmarica on the Northern Tableland¹⁶. In some instances, courses of mudbricks are still preserved (up to four courses on wall 95, and four bricks side by side, on wall 10, Fig. 11a). The stone fundament is raised high

¹⁵ Even though the amount of loam (as well as water and temper) needed for the walls is high, the depression of 1 km² with ca. 30 cm soil layer provides sufficiently the material.

¹⁶ A.-K. RIEGER ET AL., *Water, Soil and Agriculture – A Geoarchaeological Approach to an Unknown Arid Region* (in preparation, hereafter

A.-K. RIEGER ET AL., *Water, Soil and Agriculture*): mudbricks measure 35/37 × 35/37 cm in the Graeco-Roman settlements of Wadi Umm el-Ashdan and Wadi Qasaba.

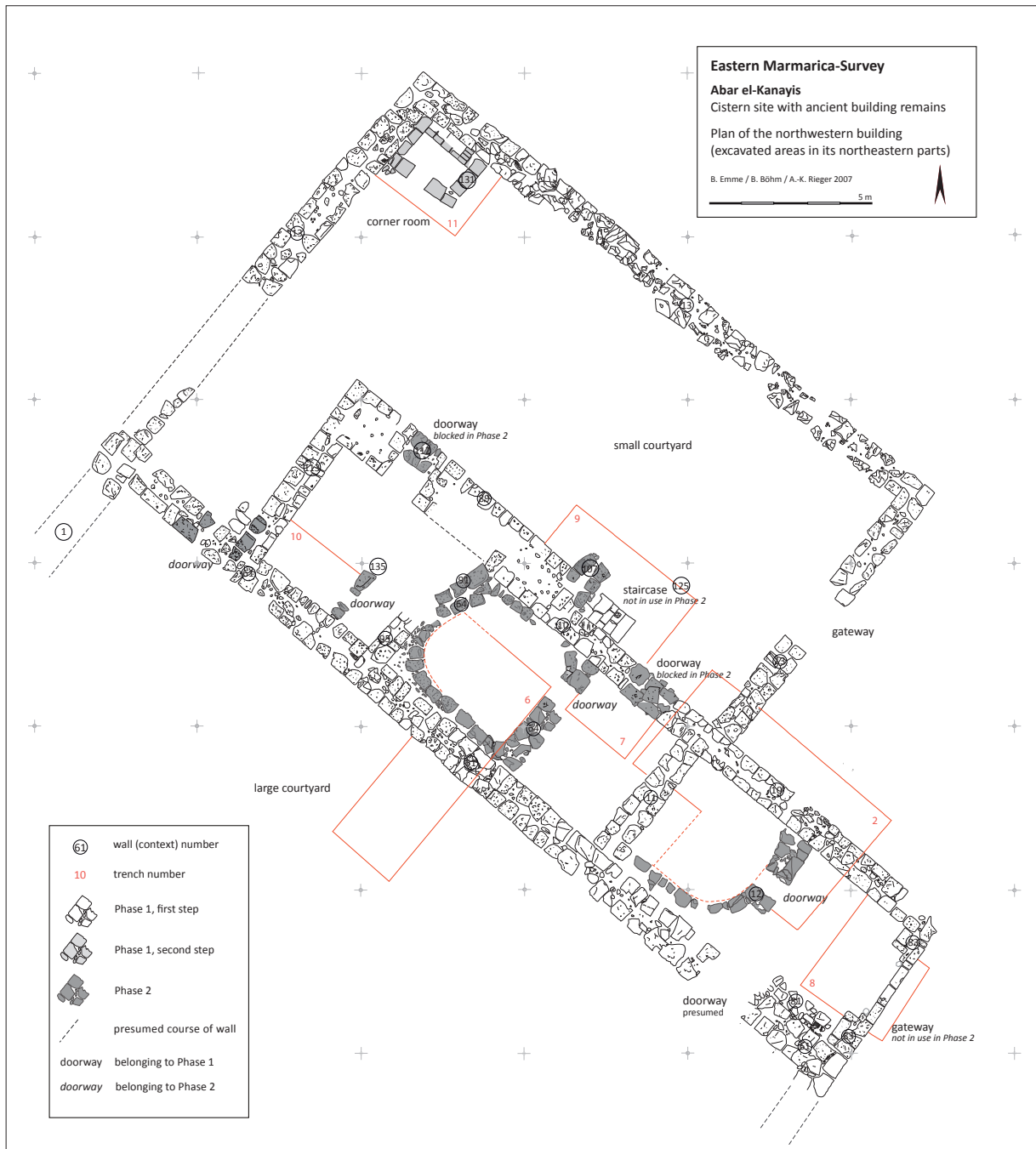


Fig. 9 Plan of the northern part of the northwestern building of Abar el-Kanayis (drawing B. EMME/B. BÖHM/A.-K. RIEGER)

enough to fulfill its purpose as protection of the loamy building material from the humidity of the underground and occasional splash waters.

In a later phase (see below, pp. 151–153) roughly cut blocks and rubbstones were used for secondary walls (12 and 64; Fig. 10a, 14a) that are rather negligently stacked. The stone-built parts of the later walls reach a maximum of 1.0 m in height; no traces of the rising parts are preserved, but presumably they were also made from mudbricks.

The walls form three rooms on the northern side of the courtyard in the primary layout of the entire complex – each of them covers 15 to 20 m² – and is likely to be mirrored on the southern side. The south-eastern room opens to the outside through a large gateway (Fig. 9, 15a). This room may have been connected to the large courtyard by a presumed doorway in wall 61. A doorway to the building was found at its eastern part (Fig. 9). No inner doorways connect the rooms. Two doorways lead from the small court-

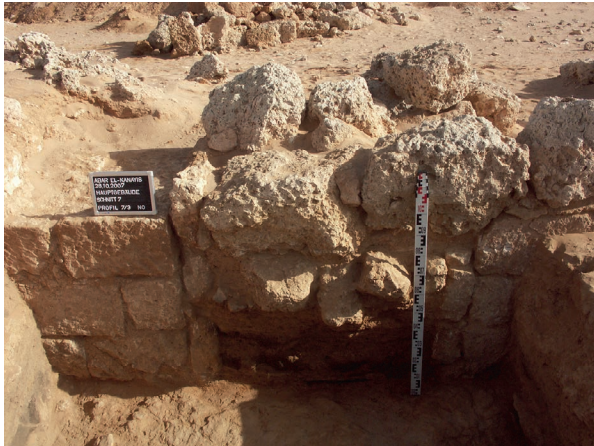


Fig. 10a Walls made from lacustrine limestone ashlar of Phase 1 of the building, and doorway blocked with weathered blocks during Phase 2 (trench 7, view from southwest, cf. Fig. 14a, photograph B. EMME)



Fig. 11a Remains of the rising mudbrick on wall 10 (photograph S. VALTIN)



Fig. 10b Ashlar of lacustrine limestone with tool marks (scale bar 30 cm, photograph B. EMME)



Fig. 11b Mudbricks with the standard side length of 23 to 25 cm, typical for the site (scale bar 20 cm, photograph B. EMME)

yard (see below, pp. 152–153) in the northern part of the complex to the northwestern rooms and were later blocked (Fig. 15b).

The long northern wall backing the rooms is adjoined by stairs leading to a second storey. Six steps are preserved, with complete slabs forming the steps, each reaching a height between 20 and 25 cm (Fig. 16a, b). A presumed seventh step led to the top of the wide stone base along the northwestern parts of the building (wall 89), that served as landing and/or corridor. The stairs were blocked by wall 107 in a later phase – we assume, that the second storey was not in use any

more at this time (Fig. 16a). The stone foundations of this part of the northern wall have a width of 1.9–2.0 m and thus have the capacity to carry a second storey made accessible by the staircase (Fig. 12c, 16a). The debris of collapsed construction material reaches the highest extension in this part of the building, which corroborates the assumption of a second storey above the northwestern rooms of the building (Fig. 6b)¹⁷. Whether there had been a second staircase to the northwestern rooms of the upper floor leading up from the large courtyard, was not recognisable after a cleaning of wall 61.

¹⁷ For the stability of mudbrick walls in modern buildings see G. MINKE, *Das neue Lehm-Bau-Handbuch. Baustoffkunde, Konstruktionen, Lehmarchitektur*, Staufien 2009, p. 34. The stability of mudbricks, produced with antique techniques and using no modern

materials, was recently demonstrated by the reconstruction of a part of the city wall in Hattuša, cf. J. SEEHER, *Die Lehmziegel-Stadtmauer von Hattuša. Bericht über eine Rekonstruktion*, Istanbul 2007.



Fig. 12a Double-faced walls 61 and 113 (trench 10, view to southeast, photograph B. EMME)

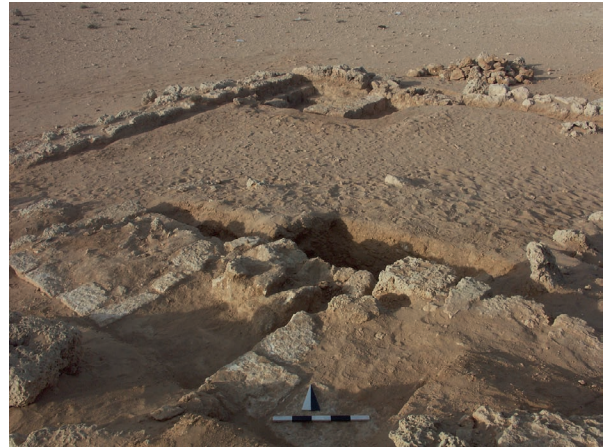


Fig. 12b Wall foundation of four courses of ashlar based on the natural rock (trench 10, photograph S. VALTIN)



Fig. 12c View on wall 89, the secondary courtyard (wall 13) with the corner room showing the different wall dimensions (northwestern part of the excavated area, photograph S. VALTIN)



Fig. 13 Remains of barley (*Hordeum vulgare*) used as temper for mudbricks (Abar el-Kanayis, context 96, photograph A. THEISS)

A second courtyard is adjacent to the northern part of the building, surrounded by wall 13, which was made to the same high quality standard as walls 10 and 61 (Fig. 9, 12c). It is based directly on the natural bedrock. The courtyard itself is only filled with blown sands (Fig. 17a, b), corresponding to the stratigraphy in the large courtyard (Fig. 17c); the only artificial fea-

ture is the levelling layer, that represents the living floor (Fig. 17a), similar to the rooms defined by walls 10, 11, 61, 95 and 113). A floor in the literal sense of the word was not recognisable in the first phase of the building. The trenches in the courtyards yielded no finds. According to the masonry's characteristics and the general layout we assume that this smaller court-

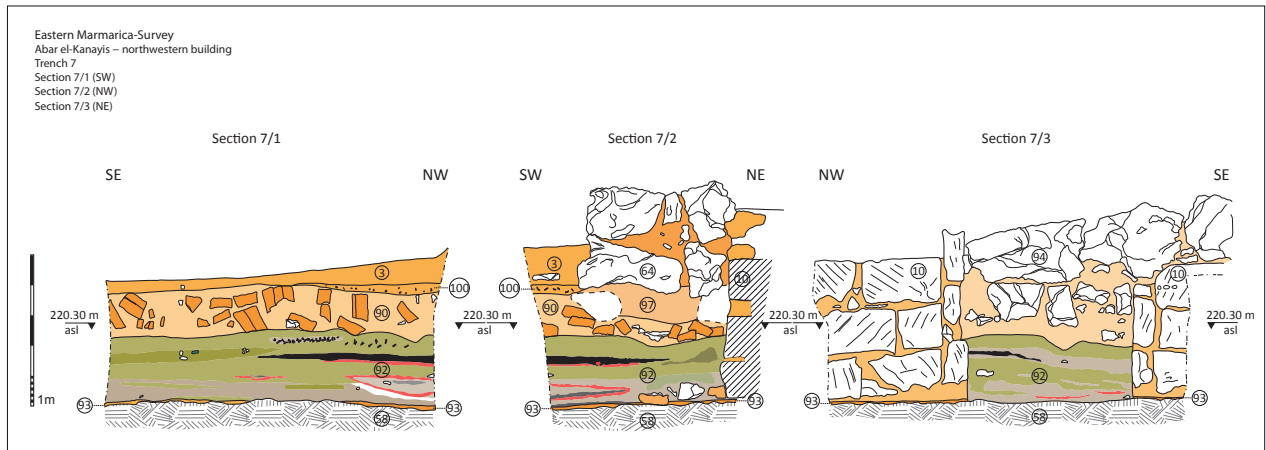


Fig. 14a Section of trench 7: levelling layer, layer of destruction debris (ashes, burnt mudbrick), later wall (drawing B. EMME/J. BECKER)

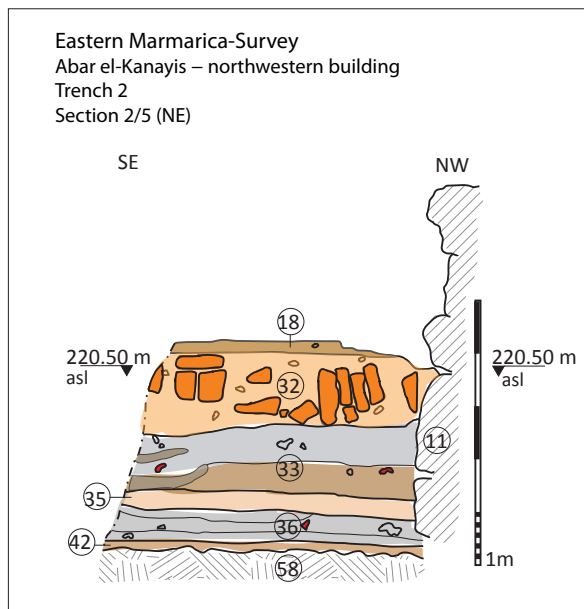


Fig. 14b Section of trench 2: layer of destruction debris (ashes, burnt mudbrick) and wall 11 from Phase 1 (drawing S. VALTIN)



Fig. 14c Section of trench 7: levelling layer, layer of destruction debris (ashes, burnt mudbrick) and later wall (photograph B. EMME)

yard was built contemporaneously with the rooms and the large courtyard, although its surrounding wall was erected with a butt joint to walls 10 and 61.

In the northern corner of the smaller courtyard lies a single room separated by a stone wall and enclosing an area of 1.6×1.4 m with an entrance (0.6 m wide) in the southeastern wall (Fig. 9, 12c, d). A mudbrick pedestal or bench is added to its northwestern wall 13 (0.5 m deep). Since the stone wall is erected with a butt joint to the courtyard's wall 13, the room was an addition, but its chronological relation to the courtyard appears to be contemporaneous, since the levelling layer is the same as for wall 13. Based on the debris material, the mudbrick bench was inserted in a

following step. The bricks differ in their dimensions from the ones of the walls described above ($30 \times 15 \times 6$ cm in the corner room in comparison to $24 \times 24 \times 5$ cm for the walls of the main building), which may result from using different brick sizes for different purposes such as construction of a wall or a small bench.

(A.-K. R./S. V.)



Fig. 15a Gateway on the northeastern side of the building (trench 8, scale bar 50 cm, photograph A.-K. RIEGER)



Fig. 16a Stairs, leading from the secondary courtyard to the second storey (trench 9, photograph S. VALTIN)



Fig. 15b Doorway from the main building/rooms to the second courtyard, blocked in Phase 2 (photograph S. VALTIN)



Fig. 16b Stairs, leading from the secondary courtyard to the second storey (trench 9, view from northeast, scale bar 50 cm, photograph S. VALTIN)

3. The history of the northwestern building

3.1 The phases of construction and utilisation

The diagnostic artefacts at the site, either on the surface or in the stratified contexts, are mainly potsherds¹⁸. Thus we can provide an archaeologically established chronology for the northwestern building; the southeastern, second building, being its twin, may have been in use at the same time.

Inside the northwestern building, a substantial layer of destruction debris (parts of collapsed walls,

burnt mudbricks, ash and charcoal accumulations), recognisable all over the northern part of the building, divides the life span of the building in two stages (Fig. 14, 18a–c): After its erection and first phase of use, the later reuse of the building that is recognisa-

¹⁸ Some organic material (bones, charred and uncharred wood), suitable for C14-dating, are awaiting examination at the IFAO, Cairo.

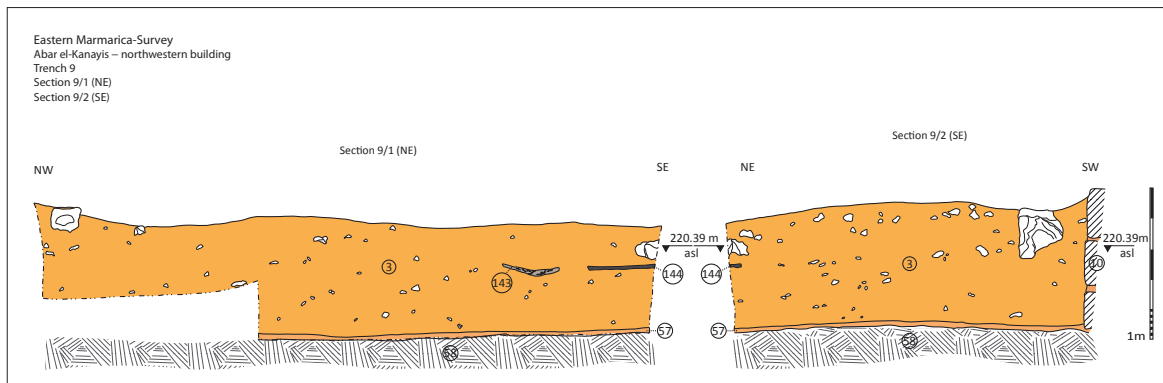


Fig. 17a Section in the secondary courtyard with layers of drifted sand (trench 9, drawing S. VALTIN/J. BECKER)



Fig. 17b View on section of trench 9 in the secondary courtyard, showing only drifted sands (view to southeast, scale bar 50 cm, photograph B. EMME)

ble in the construction of several walls on a higher level can be considered a second phase¹⁹.

In a first step of stable constructions on the site, the outer walls 10 and 61 running from southeast to northwest as well as 83 and 113 running southwest to

northeast were erected, since they are based directly on the bedrock (Fig. 12b, 14, 17). The shorter walls that separate the single rooms (11 and 95) were brought up in a second step of this construction phase, since more substantial levelling layers of compacted soil

¹⁹ The phase of reuse will be considered in B. GROSSKOPF/ A.-K. RIEGER/S. VALTIN, *Byzantine Burials at Abar el-Kanayis on the*

Marmarica-Plateau – A Trace of Anchorites in the Libyan Desert? (in preparation).

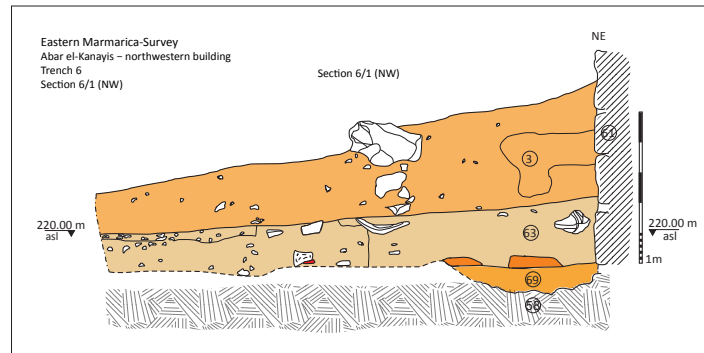


Fig. 17c Section of trench 6 in the large courtyard, showing only drifted sands (view to southeast, drawing D. HAAS/J. BECKER)



Fig. 17d Corner room (trench 11) in the northwestern corner of the secondary courtyard, view from south (scale bar 50 cm, photograph B. EMME)

were spread underneath the ashlar (36 in Fig. 14b). Especially wall 95 is interwoven with wall 10, i. e. built in one sequence (Fig. 9). The same applies to the corner room in the smaller courtyard.

There are very few diagnostic sherds contained in the lowest stratigraphical layer (levelling layer on the bedrock) that could pinpoint the construction of the building. A rim of African Red Slip Ware (ARS A/D) from that layer belongs to HAYES Form 31 (K3, Fig. 20) and suggests the *terminus ante quem non* in the middle of the 3rd century CE. The intensive use of the site from Roman Imperial times onwards is emphasised by several finds of Roman local Egyptian Amphorae (AE 3.1) mixed into later layers (e. g. K9, K11, K32, K40 from the debris in the corner room). Within the same level containing material from the destruction a foot of an imported Greek Amphora (Fig. 21, K12)

was found, made in the 1st or 2nd century CE, while Ptolemaic material does not appear in any stratigraphical layer. This composition of finds in the archaeological contexts of the building suggests that its construction took place already in later Roman Imperial times, however not even before the second half of the 3rd century CE.

The pottery finds do not allow for the determination of different uses of the rooms. Only the higher quantity of potsherds in the rooms testifies to a rather more intensive use in comparison to the lower quantity in the courtyards.

The building in its current layout with a large and a small courtyard and a suite of rooms on the two floors between the courtyards stood for some centuries, and was used by people who came to the cisterns as travellers, traders or herders. According to the stratified finds the main period of frequentation of the building and the site took place in the 6th century CE, ending with a sweeping fire that struck the entire complex and destroyed large parts of it²⁰. A thick layer of debris (up to 60 cm deep), formed by burnt mudbrick, ash, and collapsed walls testifies to this moment of catastrophe at the cistern site on the Marmarica-Plateau (Fig. 14, 18). The finds in the destruction layers (= end of Phase 1) were blackened and some sherds were secondarily overfired, which points to the high temperatures that occurred. An almost complete Late Roman Amphora (K16, Fig. 21) from Cilicia, dating to the second half of the 6th century CE is the youngest piece in the destruction layers, brought to the site before the moment of destruction.

The courtyard itself was apparently not affected by fire and destruction. The layers here show a subse-

²⁰ The scattered ashlar of the second building to the southeast show signs of a strong fire, too.

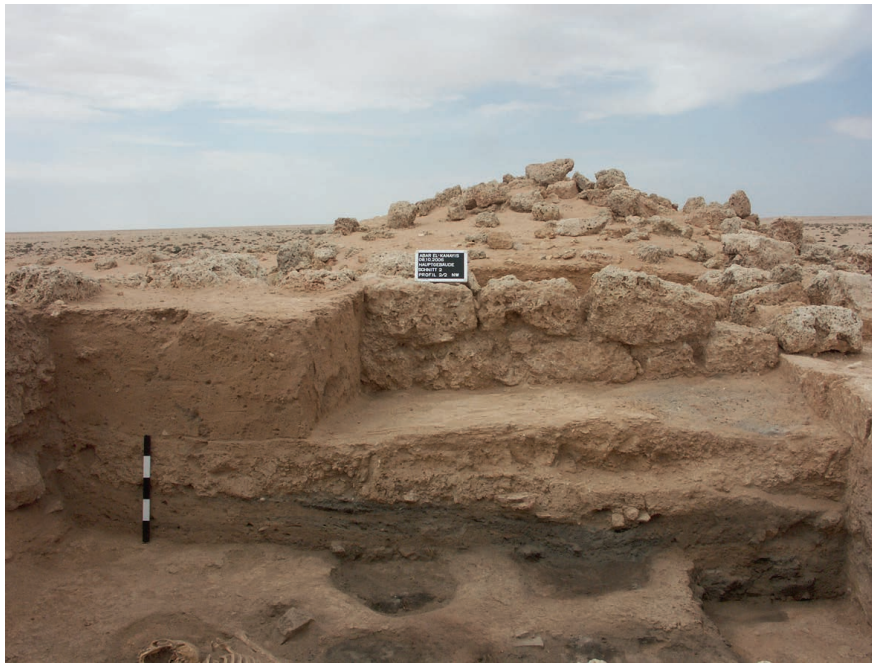


Fig. 18a
First living floor (lower right of the picture), layers of destruction debris, and drifted sands accumulated above (left of the picture), (trench 2, view to northwest, scale bar 50 cm, photograph S. VALTIN)

Tab. 1 Phases of use in the northwestern building of Abar el-Kanayis (table A.-K. RIEGER/H. MÖLLER)

Time	Phase	Use/event
3 rd ? to 5 th /6 th century CE	Phase 1	Construction (walls 10, 11, 13, 61, 83, 89, 95) and use of the building
6 th century CE	End of Phase 1	Destruction by fire (contexts 33–36, 123, 127, 60)
6 th century CE	Phase 2	Reuse of the building (walls 12, 64, 135), change of the room layout, burials (contexts 9, 70, 111, 119)
End of 6 th century CE	End of Phase 2	Abandonment of the building
7 th to 21 st century CE	Phase 3	Use of cisterns only (probably with interruptions), installation of campsites, Bedouin graves, fireplaces in drifted sands (context 3)

quent accumulation of levels by blown sand over time, with some bricks, pottery, and stones (Fig. 17). Above that, the drifted sands covered the courtyard and rooms after the abandonment of the building; the same is true for the smaller courtyard on the northwestern side, where only layers of continuous use appeared.

The reasons for the heavy fire and collapse of the building in Byzantine times remain unknown. It may have happened due to a fatal accident, but may also be correlated with raids by nomadic tribes of the Libyan Desert against both Cyrene and the Nile Valley as attested by sources from the 3rd to the 5th century CE, and lead – amongst other necessities – to the military

reorganisation and protection measures taken in the region in the 6th century CE²¹. Why the building at Abar el-Kanayis as a part of the route system on the Marmarica-Plateau was not restored to its former dimensions to serve its purpose as a station, may result from the political and social disturbances in the 6th and 7th century CE driven by Berber interest, Byzantine claims and Arab invaders. After the break in the 6th century CE at Abar el-Kanayis, the smaller, simpler walls allowed only for a reduced use of the complex.

The destruction material was levelled, forming a layer of 40 to 50 cm in depth, for a new utilisation of the building, where the rooms' layout was reshaped (Phase 2). The rough construction technique of the

²¹ The threat to the settled regions posed by the tribes of *Mazikes* or *Mastitai* are mentioned by SYNESIOS, *Epistulae*, 57, 58, 129, 130 col. 1512; SYNESIOS, *Catastasis* I, col. 1568 ss.; IOHANNES AN-TIOCHENUS, fr. 313; on Goniotai see the report POxy 46, 3292, l.12/13; POxy 33, 2681, l. 6, 9; BGU 3, p.935; CODEX IUSTINIANUS,

Edict 13, mentioning a *Limes Libycus* (cap. 18, 20) and special troops stationed there (cap. 18) as part of the conquest of North Africa; see also M. BRETT/E. FENTRESS, *The Berbers*, Oxford 1996, pp. 50–119, esp. 70–80.

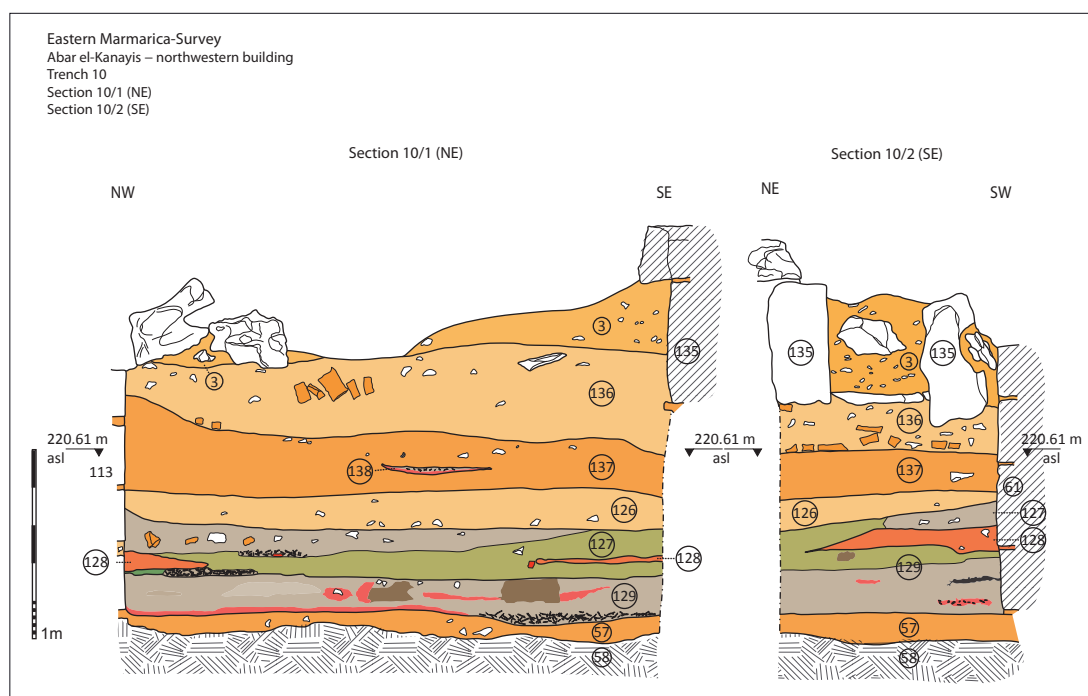


Fig. 18b Sections of trench 10 (drawing B. EMME/J. BECKER)

new walls differs remarkably from the refined ones of Phase 1 (see above, p. 145 and Fig. 10, 12b). Again the pottery finds within the contexts belonging to this phase are low in number: A highly fragmented, but almost complete jug (K21, Fig. 22) probably dating to Late Roman times and a hand-made cooking pot were found next to residual finds, mainly locally produced Roman amphorae (AE 3.1). In some of the rooms walls were set against the former ones of Phase 1 (e. g. wall 64), maybe as a measure of stabilisation, others were inserted to create new, smaller rooms (f. e. wall 12, Fig. 12). Doorways were blocked, so that the passage between the rooms and into the smaller courtyard in the northeast was not possible any longer (Fig. 9, 10a, 15b). Access was provided on a higher level by small doorways facing southeast. The second storey presumably was out of use in this phase – at least the stairways (context 125) did not function anymore, since they were blocked by the later wall 107 (Fig. 9, 16a). The four burials found in the excavated area were placed in the ground during Phase 2 of the building, which began directly after the destruction since their pits do not cut any layers of drifted sands²². Even though the building seems to have lost its character as a roadside inn, the cisterns and the route must have been in use in order to provision these people.

This period of reuse was very limited, and the final abandonment of the building happened at the end of the 6th century CE (end of Phase 2) since the youngest pottery pieces from that phase can be dated to this time (K15, Fig. 21). A piece of palm tree wood (*Phoenix dactylifera*), coming from the first level of drifted sands above the living floor of the building is dated to the 7th century CE by C14-dating and confirms that the building was subsequently covered by sands from this time onwards. It is difficult to gain a more detailed insight into the activities taking place at the site after the abandonment of the building, since the artefacts in the drifted sand layers belong to the Roman/Late Roman period, while younger material (Medieval pottery) is absent. The only sign of human presence in these centuries are fireplaces preserved in the wind blown sand layers. Thus, we assume that at least herders, maybe also travellers, frequented the depression and the cisterns at Abar el-Kanayis continually. Some campsites, making use of the ashlar from the building, as well as Bedouin graves show the presence and activity of people at the site. Hand-made pottery (NLDW), that existed continuously and without any change in type from Roman times to the 20th century, is scattered around the site (see below, p. 163)²³. The latest intensive period of use is testified by the relics of WW II.

(A.-K. R./H. M./S. V.)

²² See FN 19.

²³ A.-K. RIEGER/H. MÖLLER, *Northern Libyan Desert Ware*, pp. 23–30.

3.2 The pottery finds in the northwestern building

General overview and spectrum of wares

The material – pottery from the surface surveys and from the contexts of the building in Abar el-Kanayis – does not reach more than 85 individual vessels (Minimum Number of Individuals = MNI). This number is very low, taking into account that Abar el-Kanayis was frequented as cistern site from at least Graeco-Roman times until nowadays with a peak during the existence of the building in Late Roman times. This might be due to the fact that the place was continually used, not recurrently like settlements where more debris is produced in a shorter time²⁴.

As shown above the chronological spectrum of finds in general including surface finds covers mainly the Roman and Late Roman period up to the 6th century CE and corresponds to the existence of the building. There are hardly any finds to prove the frequentation of the site after the time of the abandonment of the permanent construction except some sherds of the Northern Libyan Desert Ware (see below, p. 163). The same applies to pre-Roman finds: Only one amphora handle – a surface find – is of Ptolemaic origin.

The spectrum of pottery with regards to functional groups is quite variable. The range of types represented in each group instead is very limited. This differs from the material that was found on coastal sites and shows once more the different character of the cistern site on the Northern Marmarica-Plateau²⁵.

Amphorae (39 %; MNI: 32) and Coarse Ware (33 %; MNI: 27) are the main groups on the site, followed by hand-made pottery (15 %; MNI: 12) – only Northern Libyan Desert Ware –, Fine Ware (6 %; MNI: 6) and wheel-made Cooking Ware (7 %; MNI: 8) (Fig. 19a)²⁶.

Local wares prevail over imported ones, but a few Amphora imports, as well as Fine Ware and Cooking Ware imports, can still be observed, especially in Late Roman times (Fig. 19b).

This observation is consistent with the fact that in Roman times presumably just until the 4th century CE the production of goods and containers on the coast – as new research in the Marmarica could show –

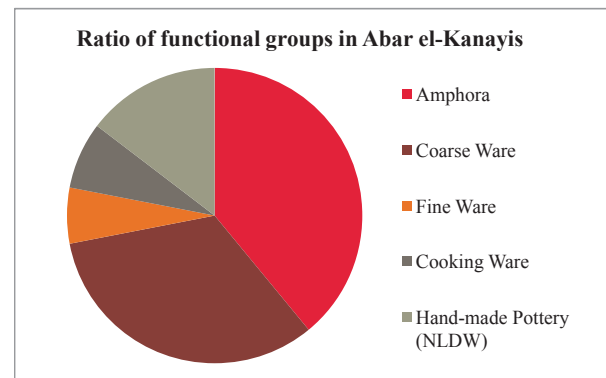


Fig. 19a The different pottery groups present at Abar el-Kanayis and their ratio (graph H. MÖLLER)

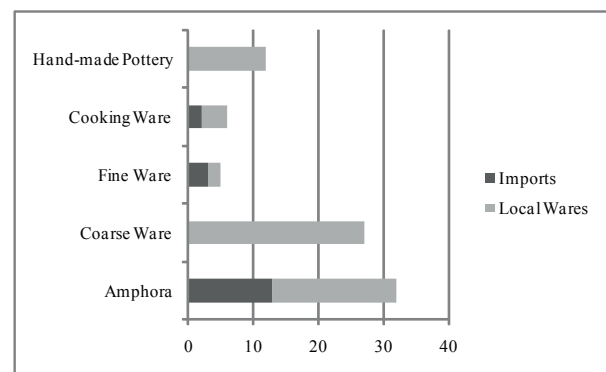


Fig. 19b Ratio of imports and local wares in the functional groups (graph H. MÖLLER)

reached its peak, and afterwards nearly stopped since hardly any production sites can be found on the western coast of a later date²⁷. Instead of that, imports show that the demand of commodities – primarily wine and its derivatives, but also other goods – from outside still existed in Siwa and had to be replaced by imports from the Eastern, but also Western Mediterranean. Additionally some Egyptian ware made of alluvial clay occurred originating from the Nile Valley²⁸.

(H. M.)

Catalogue of finds

The catalogue includes not all diagnostic sherds, but all types found in the excavated areas of Abar el-Ka-

²⁴ *Loc. cit.*, pp. 11–31.

²⁵ A.-K. RIEGER ET AL., *Water, Soil and Agriculture*.

²⁶ The quantification comprised account of all rim, base and handle sherds found in Abar el-Kanayis without considering the chronology.

²⁷ Only one site in Wadi Hashefi might have produced pottery in Late Roman times (presumably Cooking Ware and a type of bag-shaped Amphora).

²⁸ In contrast to Dakhla and Kharga, see D. DIXNEUF, *Amphores égyptiennes. Production, typologie, contenu et diffusion (IIIe s. av. J.-C. – IXe s. apr. J.-C.)*, Alexandria 2011 (hereafter D. DIXNEUF, *Amphores égyptiennes*), pp. 227–229, research on pottery in Siwa Oasis is rather young, only unpublished reports by L. BAVAY and oral information by B. BÖHM provide some initial ideas about the find spectrum in the oasis itself.

nayis, while surface finds are excluded. It is organised by functional groups, fabrics and types as appropriate. Its aim is to give an overview of the types and fabrics rather than trying to develop a seriation of types bedded into a chronological frame. The latter is not possible due to the limited amount of sherds, and the character of contexts is often of a mixed date.

Fine Ware: Egyptian Fine Ware

Only two fragments of Egyptian Fine Ware (Fig. 20, K1, K2) are among the material. The large dish or bowl with in-turned rim (K1) is of 'calcareous' clay²⁹. The fabric is dense with some very small white inclusions. The surface is abraded and covers a darker reddish slip. The other one – a plate (K2) – is made of alluvial clay with a reddish thin slip on the outside and inside of the vessel and belongs to Egyptian Sigillata Group K³⁰.

K1 – ID 1330, Bef. 11, DM 34 cm³¹.

Fabric: brownish in colour, homogenous, dense with some very small white opaque inclusions. The surface is abraded and slipped with a dark, thick, reddish slip. The fragment is secondary overfired. In-turned rim, rounded, slightly grooved outside. Type: large red slipped dish/bowl.

Context: Phase 1.

K2 – ID 1114, Bef. 33 and 34, DM: 22 cm.

Fabric: alluvial clay, reddish-greyish in colour. Break slightly inhomogeneous. Silty, with little white opaque inclusions. Surface slipped with a thin, reddish slip. Blackened by soot and grime outside. Slightly grooved, thickened rim.

Type: plate.

Context: End of Phase 1.

Fine Ware: Imported Fine Ware

Imported Fine Wares (Fig. 20, K3–K5) are rare: one diagnostic sherd of African Red Slip Ware (ARS A/D) probably to HAYES 31 (K3) of Roman date (middle of the 3rd to the 4th century CE)³², an almost complete form of ARS C HAYES 50 B³³ (K4) and a rim of a Late Roman C dish HAYES 3 (K5) produced in the 5th century CE in Turkey, probably the Phocaea region³⁴.

K3 – ID 1104, Bef. 10, DM: 42 cm.

Fabric: reddish, sandy with some greyish-white opaque inclusions visible. Surface slipped with a reddish rather thin slip. ARS A/D?, HAYES 31.

Type: Bowl.

Context: Phase 1.

K4 – ID 1354, Bef. 121, DM: 21 cm.

Fabric: reddish-yellowish, silty, but dense, hardly any inclusions are visible except some very small white opaque ones. Surface slipped with a light reddish thin slip. ARS C, HAYES 50 B.

Type: Bowl.

K5 – ID 1147, Bef. 2 and 3, DM: 25 cm.

Fabric: light reddish to brownreddish, silty but dense with some white opaque inclusions. Surface very thinly slipped outside, inside abraded. LRC-Ware, HAYES 3.

Type: Bowl.

Context: Phase 3.

Amphora: Egyptian Amphora

All in all a very limited selection of Egyptian Amphora (Fig. 20, K6–K11) was found, subsumed as Egyptian Amphora AE 3 (Amphore Égyptienne 3)³⁵ (K6–K11).

²⁹ For the definition of fabric and the problem of the terminology see A.-K. RIEGER/H. MÖLLER, *Kilns, Commodities and Consumers – Greco-Roman Pottery Production in Eastern Marmarica (Northwestern Egypt)*, in: AA 2011/1, pp. 141–170 (hereafter A.-K. RIEGER/H. MÖLLER, *Kilns*).

³⁰ Congruent to Group K (M. RODZIEWICZ, *Ceramika Późnorzymska w Aleksandrii, Aleksandria I*, Warsaw 1976) = Egyptian Red Slip B (ERS B, J. HAYES, *Late Roman Pottery*, London 1972 (hereafter J. HAYES, *LRP*)) = Sigillée égyptienne, groupe 2 (M. EGLOFF, *Kellia. La poterie copte*, Geneva 1977 (hereafter M. EGLOFF, *Kellia*) = Egyptian Red Slip H (ERS H, D. M. BAILEY, *Excavations at El-Ashmunein V. Pottery, Lamps and Glass of the Late Roman and Early Roman and Early Arab Periods*, London 1998 (hereafter D. M. BAILEY, *El-Ashmunein*). On the production sites see L. BAVAY/J.-L. BOVOT/O. LAVIGNE, *La céramique tardive et byzantine de Tanis*, in: CCE 6, 2000, pp. 39–76, 52 (hereafter L. BAVAY/J.-L. BOVOT/O. LAVIGNE, *La céramique tardive*).

³¹ Abbreviations: Bef. = Befund = context, DM = Durchmesser = diameter, ID = Identity number.

³² M. BONIFAY, *Etudes sur la céramique romaine tardive d'Afrique*, Oxford 2004, Type 11.

³³ J. HAYES, *LRP*, pp. 69–73.

³⁴ LRC-Ware is congruent to Phocaen Red Slip Ware, see J. HAYES, *LRP*, p. 329; see also S. LADSTÄTTER/R. SAUER (mit einem Beitrag von G. SCHNEIDER/M. DASZKIEWICZ), *Late Roman C-Ware und lokale spätantike Feinware aus Ephesos*, in: F. KRINZINGER (ed.), *Spätantike und mittelalterliche Keramik aus Ephesos*, Vienna 2005, pp. 143–201, saying Phocaea was the main production site with the biggest export radius, but other pottery workshops producing LRC-Ware do exist.

³⁵ J.-Y. EMPEREUR/M. PICON, *A la recherche des fours d'amphores*, in: J.-Y. EMPEREUR/Y. GARLAN (eds.), *Recherches sur les Amphores Grecques*, BCH 13, 1986, pp. 103–126 (hereafter: J.-Y. EMPEREUR/M. PICON, *Fours d'amphores*).

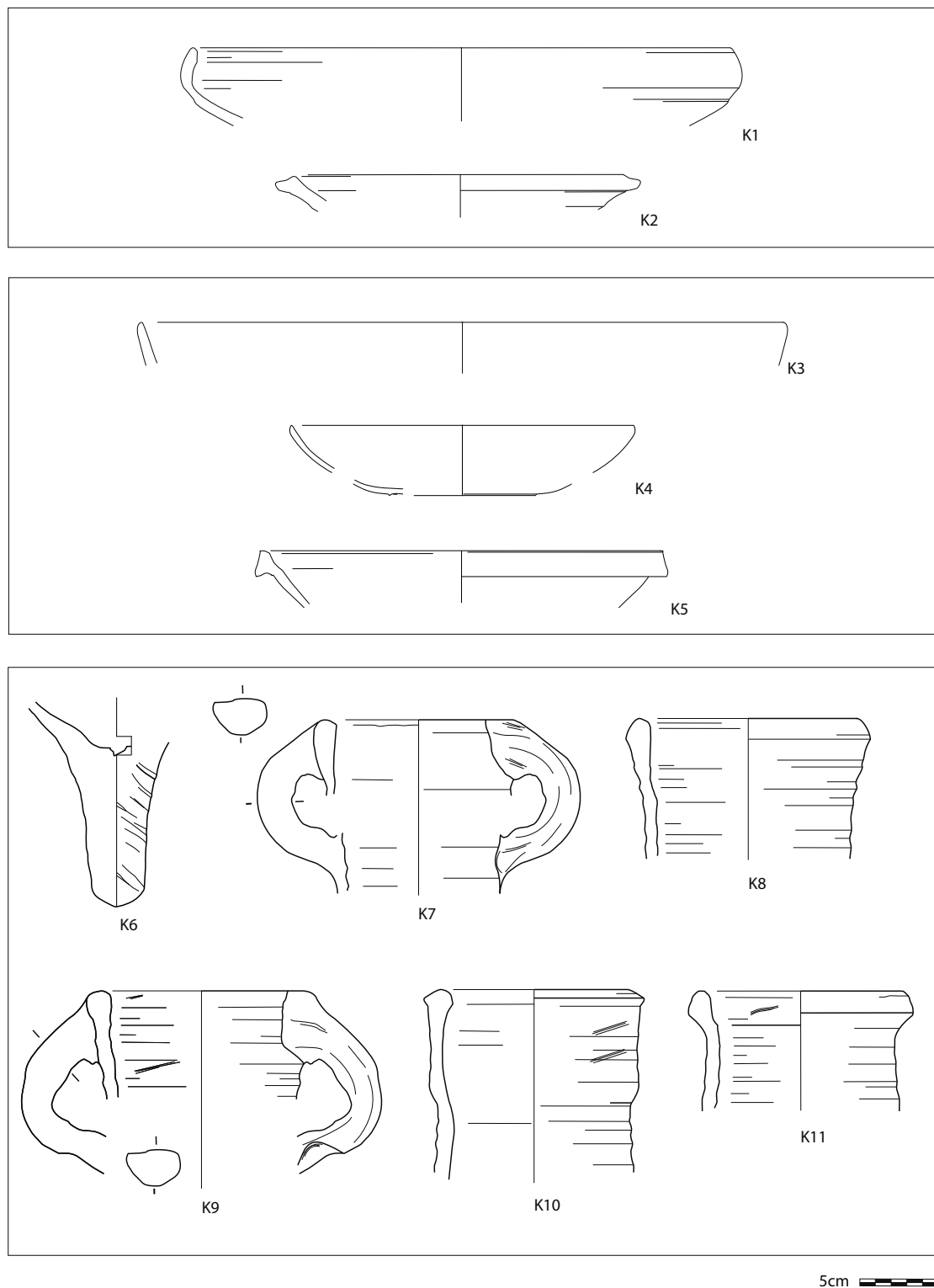


Fig. 20 Pottery finds from Abar el-Kanayis. Egyptian and imported Fine Wares, Egyptian Amphorae
(drawing H. MÖLLER/B. BÖHM/S. VALTIN)

The finds at Abar el-Kanayis were produced on the western coast of Egypt, either in the Marmarica (see above, p. 154) or the Mareotis region, both made from a very similar fabric due to the same geological condition. Either a silty, reddish, quartzous, more or less carbonate rich, ferreous 'calcareous' clay (F1) occur³⁶ or a brownish-greyish silty, quartzous and slightly carbonate rich 'calcareous' clay with grey-opaque inclusions (F2)³⁷. No amphorae made of alluvial clay coming from the Nile Valley or Delta seem to have arrived at the site. Three different subtypes can be distinguished, all variations of DIXNEUF AE 3-1. They were probably produced from the end of the 1st century CE to the 3rd century CE as related subtypes in externally dated layers elsewhere suggest³⁸. Presumably wine and its derivatives was the primary commodity that was packed in these amphorae as recent research in the Marmarica and its economic potentials has shown³⁹.

There is no indication of any Egyptian Late Roman Amphora in the find spectrum of Abar el-Kanayis.

K6 – ID 1097, Bef. 3.

Fabric: F1, Surface abraded. Base, solid spike, slightly twisted.

Type: Amphora, AE 3.

Context: Phase 3.

K7 – ID 1376, Bef. 105, DM: 15 cm.

Fabric: F2, Surface abraded. Rounded rim with small looped handles that are attached directly to the rim. Ribbed inside and outside.

Type: Amphora, DIXNEUF AE 3-1.2, variant A.

K8 – ID 1343, Bef. 3, DM: 15 cm.

Fabric: F2, Surface abraded. Rounded rim. Ribbed inside and outside.

Type: Amphora, DIXNEUF AE 3-1.2, variant A.

Context: Phase 3.

K9 – ID 1320, Bef. 130, DM: 15 cm.

Fabric: F2, Surface abraded. Rounded rim with small looped handles that are attached directly to the rim. Ribbed inside and outside.

Type: Amphora, DIXNEUF AE 3-1.2, variant A.

K10 – ID 1344, Bef. 64, DM: 15 cm.

Fabric: F2, Surface abraded. Rounded rim, stepped outside. Slightly ribbed outside and inside.

Type: Amphora, DIXNEUF AE 3-1.3, Marm. C1⁴⁰.

Context: Phase 2 (residual).

K11 – ID 1321, Bef. 130, DM: 13 cm.

Fabric: F2, Surface abraded. Rounded, and slightly everted, stepped rim. Slightly ribbed outside, inside more deeply.

Type: Amphora, DIXNEUF AE 3-1.5, variant A(?).

Amphora: Imported Amphora

Imported Amphorae (Fig. 21, K12–K17) are less frequent at the site. Only one base of a Greek Amphora, probably from Cnide (K12, see above, p. 151), dates from Ptolemaic to Roman times, the other imported Amphorae are Late Roman ones. They represent two types: KEAY LII Amphorae from Italy and Late Roman Amphorae (LRA 1) from Cilicia.

K12 – ID 1351, Bef. 92.

Fabric: yellowish-brownish, dense, silty with some inclusions, base, solid, ridged spike.

Type: Greek Amphora divers.

KEAY LII (K13, K14): One amphora (K13) of KEAY LII⁴¹ is almost complete and carries a *titulus pictus* on the neck towards its shoulder⁴². The writing (*d?ommnicum*) is greyish-black coloured and placed horizontally. Inscriptions on this amphora type are very rare. An extensive analysis is in progress. The fabric differs slightly: One is more granulous than the other, but

³⁶ Probably congruent with D. DIXNEUF, *Amphores égyptiennes*, Groupe C6 from the Mareotis region. Further petrological analyses will help to clarify their composition. For the clay see also A.-K. RIEGER/H. MÖLLER, *Kilns* and H. MÖLLER/A.-K. RIEGER/TH. VETTER, *Locally Made Pottery from the Eastern Marmarica in Graeco-Roman Times – First Results of Petrographical Observations on Calcareous Clay-fabrics*, in: CCE 10, forthcoming (hereafter H. MÖLLER ET AL., *Fabrics*).

³⁷ Probably congruent with D. DIXNEUF, *Amphores égyptiennes*, Groupe C9, see FN 36.

³⁸ D. DIXNEUF, *Amphores égyptiennes*, pp. 81–111.

³⁹ A.-K. RIEGER/H. MÖLLER, *Kilns*. On many of the large-scale production sites wine presses were surveyed in close neighbourhood. In Wadi Qasaba even the remains of a resin chunk was found for lining the inside of the amphorae, common for wine

containers; see also A.-K. RIEGER ET AL., *Water, Soil and Agriculture*. For AE 3 and their contents in general see D. DIXNEUF, *Amphores égyptiennes*, pp. 197–207, 215–222.

⁴⁰ H. MÖLLER ET AL., *Fabrics*.

⁴¹ S. J. KEAY, *Late Roman Amphorae in the Western Mediterranean. A Typology and Economic Study: The Catalan Evidence*, Oxford 1984, pp. 267–268, Fig. 114. KEAY Type LII, see also D. PIERI, *Amphores de l'antiquité tardive à Marseille*, unpubl. maîtrise, Université de Provence, 1992, pp. 41–45 (hereafter D. PIERI, *Amphores tardive*). See also E. PACETTI, *La questione delle Keay LII nell'ambito della produzione anforica in Italia*, in: L. SAGUI (ed.), *Ceramica in Italia: VI-VII secolo, Atti del Convegno in onore di J. W. Hayes, Rome 1995*, Florence 1998, pp. 185–208.

⁴² D. PIERI, *Amphores tardive*, Fig. 9 shows two more KEAY LII amphorae with *tituli picti*.

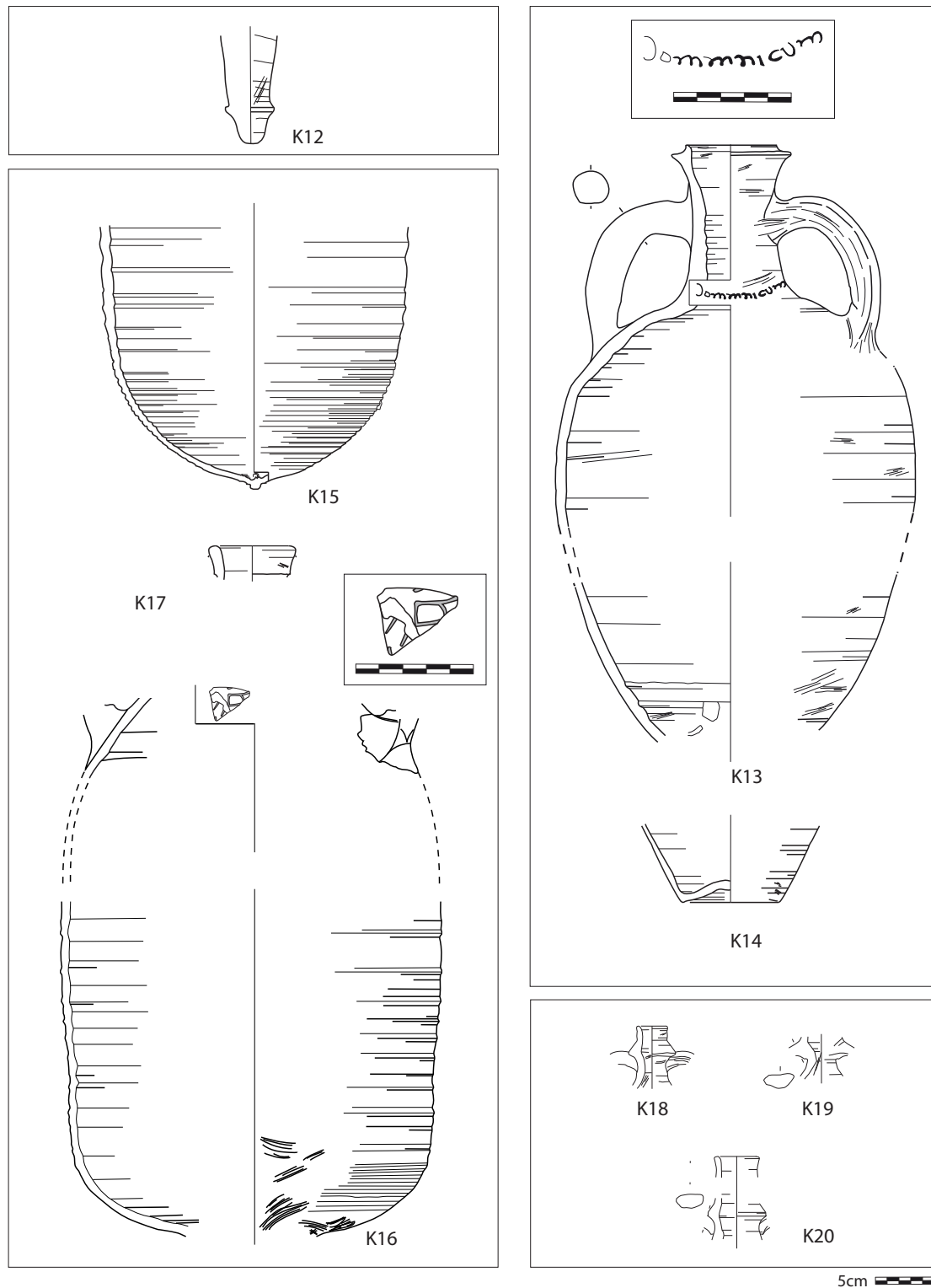


Fig. 21 Pottery finds from Abar el-Kanayis. Imported Amphorae, Egyptian Coarse Ware
(drawing H. MÖLLER/B. BÖHM/S. VALTIN)

both have the same beige-brown colour with white and black inclusions, reddish ones, quartz and some mica and are of South Italian origin, probably from Calabria or Sicily⁴³. The KEAY LII Amphorae were made in the 5th and the beginning of 6th century CE and became immediately abundant in the Eastern Mediterranean⁴⁴. South Italian wine was carried in the container as indicated by traces of resin inside⁴⁵.

K13 – ID 1146, Bef. 81, DM: 8 cm.

Fabric: beige-brown, silty with reddish, white and black inclusions, quartz and some mica. Surface abraded, whitish outside. Inside traces of pitch visible. Rim slightly everted, grooved on top. Globular handles are attached on neck and shoulder. *Titulus pictus*.

Type: Amphora KEAY LII.

K14 – ID 1113, Bef. 34, DM: 9 cm

Fabric: beige-brown, granulous with reddish, white and black inclusions, quartz and some mica. Surface abraded, whitish outside, base concave.

Type: Amphora KEAY LII.

Context: End of Phase 1.

Late Roman Amphora (LRA 1) (K15–K17): They include an earlier LRA 1A and one later developed type LRA 1B1. The fabric of the LRA 1A is quite fine, silty-beige to orange in colour with some small white and brown opaque inclusions and some chaff (K15). The surface is abraded⁴⁶. Grooves decorating the outside walls are very fine and regular. This type occurs from the end of the 4th until the end of the 5th century CE⁴⁷.

The production site of our piece remains uncertain, but Cilicia and Cyprus can be excluded due to a very different fabric. It is the only fragment of that fabric represented among the finds, other LRA 1 are made from a granulous, silty fabric full of many different opaque inclusions visible as well as quartz and mica. They were produced in Cilicia⁴⁸.

The LRA 1B1 replaces the LRA 1A completely by the 6th century CE and continues into the 7th century CE⁴⁹. Since the fabric shows a Cilician origin, it is most likely that our examples (K16, K17) belong to the first half of the 6th century CE, because in the second half of the century production decreased and they were replaced by Cypriot LRA 1 productions⁵⁰. One amphora (K16) carries a red dipinto on the shoulder⁵¹. The fabric of the earlier form is brownish, silty with some inclusions and of uncertain origin. The later samples have a dense fabric, that is coarse and with many inclusions, easy to identify and typical for Cilician productions. LRA 1 Amphorae of this origin are very common in Egypt in Late Roman times⁵². The earlier form was probably made in the 5th century CE, later mainly from the second half of the 6th century CE onwards. In general they were made to carry wine⁵³.

K15 – ID 1352, Bef. 3.

Fabric: beige to orange in colour, quite fine, silty with some small white and brown opaque inclusions and some chaff. Surface abraded. Small knobbed base, walls ribbed inside and outside. The grooves are very accurately made.

Type: Amphora LRA 1A.

Context: Phase 3.

⁴³ For the origin of the amphora see P. ARTHUR, *Some Observations on the Economy of Bruttium Under the Later Roman Empire*, in: *JRA* 2, 1989, pp. 133–142 and D. PIERI, *Amphores tardive*, p. 41.

⁴⁴ P. REYNOLDS, *Trade Networks of the East, 3rd to 7th Centuries: The View from Beirut (Lebanon) and Butrint (Albania)*, in: S. MENCHELLI/M. PASQUINUCCI/S. SANTORO (eds.), *LRCW3. Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry. Comparison between Western and Eastern Mediterranean I*, *BARIntSer* 2185, Oxford 2010, pp. 89–114, esp. pp. 94–95 (hereafter P. REYNOLDS, *Trade Networks*).

⁴⁵ D. PIERI, *Amphores tardive*, p. 44 with further bibliography. Traces of pitch and resin are often found on the inside wall of the Amphorae. Chemical analyses underlined that KEAY LII were used as amphorae since residue of wine could be substantiated on some examples.

⁴⁶ It could be congruent to the “second groupe” of D. PIERI, *Les importations d’amphores orientales en gaule méridionale durant l’antiquité tardive et le haut-moyen âge (IVe-VIIe s. apr. J.-C.)*, *Typologie, chronologie et contenu*, in: SOCIÉTÉ FRANÇAISE D’ÉTUDE DE LA CÉRAMIQUE ANTIQUE EN GAULE (SFECAG), *Actes du Congrès d’Istres, 21–24 mai 1998*, Marseille 1998, pp. 97–106 (hereafter D. PIERI, *Typologie*).

⁴⁷ D. PIERI, *Typologie*, p. 98.

⁴⁸ The fabric is probably congruent to D. PIERI “premier groupe”; see *loc. cit.* for the production sites of LRA 1 and D. PIERI, *Le commerce du vin oriental à l’époque byzantine (Ve-VIIIe siècles). Le témoignage des amphores en Gaule*, Beirut 2005 (hereafter D. PIERI, *Commerce*), p. 80; J.-Y. EMPEREUR/M. PICON, *Les régions de production d’amphores impériales en Méditerranée orientale*, in: *Amphores romaines et histoire économique: dix ans de recherche. Actes du Colloque de Sienna, Collection de l’École française de Rome* 114, Rome 1989, pp. 236–243.

⁴⁹ D. PIERI, *Typologie*, p. 98.

⁵⁰ D. PIERI, *Les centres de production d’amphores en méditerranée orientale durant l’antiquité tardive: Quelques remarques*, in: M. BONIFAY/J.-C. TREGLIA (eds.), *LRCW2. Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry I*, *BARIntSer* 1662, Oxford 2007, pp. 611–625.

⁵¹ A first systematic study of dipinti on LRA 1 was carried out by J.-L. FOURNET/D. PIERI, *Les Dipinti amphoriques d’Antinoopolis*, in: R. PINTAUDI (ed.), *Antinoe I*, Florence 2008, pp. 175–214.

⁵² Cf. for example in Alexandria: A. G. SENOL, *A Statistical Essay on the Distribution of Imported Amphorae Finds of the CEAlex Salvage Excavations*, in: *CCE* 8, 2007, pp. 57–76 (hereafter A. G. SENOL, *Distribution*).

⁵³ D. PIERI, *Commerce*, p. 81–84.

K16 – ID 2561, Bef. 127.

Fabric: dense brownish with many inclusions visible on the outside: Many greyish angular opaque ones, brownish and reddish rounded inclusions, small white round ones. Surface abraded. Walls ribbed inside and outside. Red dipinto.

Type: Amphora LRA 1B1.

Context: End of Phase 1.

K17 – ID 1309, Bef. 90, DM: 7 cm.

Fabric: dense brownish with many inclusions visible on the outside: Many greyish angular opaque ones, brownish and reddish rounded inclusions, small white round ones. Surface abraded. Rounded rim, handle directly attached.

Type: Amphora LRA 1B1.

Coarse Ware: Egyptian Coarse Ware

The spectrum of forms is very limited (Fig. 21, 22, K18–K30). Closed vessels are represented mainly by Table Amphorae and two handled jugs (filter jugs?) (K18–K20) of probable Late Roman date⁵⁴, a few other types of jugs (K21–K25) as well as some small jars (K26, K27). Open shapes are less frequent and reduced to basically two main forms: basins (K29–K30) and bowls (K28). The local Coarse Ware is made of the same or similar fabric as the Amphorae coming from the western coast of Egypt – a ‘calcareous’ silty, quartzous, more or less carbonate rich clay (see p. 157, F1/F2). Only one jug (K24) is made of a mixed alluvial/‘marl’ clay and therefore produced further east in Alexandria and the Delta region. Generally the surface is abraded, a whitish slip occurs often with Fabric F1.

No imported Coarse Ware was represented in the material.

K18 – ID 1150, Bef. 79, DM: 3 cm.

Fabric: F2. Surface abraded. Rounded rim, flanged neck with two handles attached directly underneath.

Type: Two-handled Jug/Filter Jug?

Parallels: M. EGLOFF, *Kellia*, pl. 63.5 (middle of 5th century CE).

K19 – ID 1133, Bef. 60, DM: 4 cm.

Fabric: F2. Surface abraded. Rounded rim, slightly everted.

Type: Two-handled Jug/Filter Jug?

Parallels: M. EGLOFF, *Kellia*, pl. 67.2 (beginning of 5th century CE); Tanis: L. BAVAY/J.-L. BOVOT/O. LAVIGNE, *La céramique tardive*, fig. 24.

Context: End of Phase 1.

K20 – ID 1134, Bef. 60, DM: 4 cm.

Fabric: F1. Surface white slipped. Rounded rim, flanged neck with two handles attached directly underneath.

Type: Two-handled Jug/Filter Jug.

Parallels: Kellia: P. BALLET, *Kellia*, 181. Nr. 155 (Fabric alluvial).

Context: End of Phase 1.

K21 – ID 1136, Bef. 12, DM: 5 cm.

Fabric: F1. Probably secondarily overfired, greyish-greenish in color. Surface abraded. Rounded, on the inside slightly cut rim. Underneath two rather flat handles are attached. Walls slightly ribbed inside and outside. The body is of ovoid shape.

Type: Two-handled Jug/Amphoriskos.

Context: Phase 2.

K22 – ID 1333, Bef. 110, DM: 6 cm.

Fabric: F1. Surface white slipped. Rounded rim, slightly profiled.

Type: Jug.

K23 – ID 1123, Bef. 60, DM: 5 cm.

Fabric: F2. Surface abraded. Irregular formed, slightly spouted rim, short neck.

Type: Short-necked Jug.

Context: End of Phase 1.

K24 – ID 1130, Bef. 60.

Fabric: mixed clay (alluvial/‘calcareous’) reddish-brown. Break: ABA. A: brownish; B: reddish. Silty with some opaque inclusions. Surface white slipped.

Type: Filter jug.

Context: End of Phase 1.

K25 – ID 1153, Bef. 33, DM: 6 cm.

Fabric: F2. Surface abraded. Base concave.

Type: Jug.

Context: End of Phase 1.

⁵⁴ See related forms in Kellia: M. EGLOFF, *Kellia*, pl. 63–71 (“gargoulette” and “pichet”); P. BALLET, *Kellia. L’ermitage copte QR 195*,

Cairo 2003 (hereafter P. BALLET, *Kellia*), pp. 167–173 (with alluvial fabric).

K26 – ID 1140, Bef. 33, DM: 10 cm.

Fabric: F2. Surface abraded. Rounded, slightly everted rim.

Type: Wide-mouthed jar.

Context: End of Phase 1.

K27 – ID 1164, Bef. 33, DM: 8 cm.

Fabric: 'calcareous', relative fine reddish in colour, sandy, only a few very small inclusions are visible. Surface abraded. Rounded, slightly everted rim, thin walled.

Type: Thin-walled wide-mouthed jar.

Context: End of Phase 1.

K28 – ID 1101, Bef. 60, DM: 18 cm.

Fabric: F2. Surface abraded. Rounded, towards the inside slightly thickened rim.

Type: Bowl.

Context: End of Phase 1.

K29 – ID 1131, Bef. 60, DM: 22 cm.

Fabric: F2. Surface abraded. Flanged bowl. Rim flattened.

Type: Bowl.

Context: End of Phase 1.

K30 – ID 1121, Bef. 60, DM: 37 cm.

Fabric: F2. Surface abraded. Deeper (reeded) grooves on the rim, oriented nearly flatly. Ribbed walls outside.

Type: Basin.

Context: End of Phase 1.

Cooking Ware: Egyptian Cooking Ware

The quantity of Egyptian wheel-made Cooking Ware (Fig. 22, K31, K32) is very rare. Only two examples of two-handled globular wide-mouth cooking pots with flat, inside slightly undercut rim K31 made of the local 'calcareous' clay (see above, p. 157) are represented in the material next to one single lid made of alluvial clay. All are of uncertain dating occurring in contexts with a *terminus ante/ad quem* 5th/6th century CE. Espe-

cially K32 is a common form already attested in the 1st/2nd century CE until Late Roman times⁵⁵.

K31 – ID 1154, Bef. 33, DM: 22 cm.

Fabric: F1 more silty and quartzous. Surface blackened by soot and grime. Rounded rim, flat, inside slightly undercut. Two rounded handles are joined to the rim, terminated on the shoulder.

Type: Two-handled globular wide-mouth cooking pot.

Parallels: M. EGLOFF, *Kellia*, pl. 49.4.

Context: End of Phase 1.

K32 – ID 1318, Bef. 130, DM: 14 cm.

Fabric: alluvial clay, brownish-reddish in colour. Break: ABA, A: brownish, B: reddish. Silty, with white opaque inclusions visible. Surface abraded. Inclined cut rim.

Type: Lid.

Cooking Ware: Imported Cooking Ware

Two Late Roman cooking pots (Fig. 22, K33, K34) among the material are made of a non-Egyptian fabric. One vessel is almost completely preserved (K33). Both belong to two-handled ribbed cooking pots with a thickened, rounded rim. The fabric of both pots is similar: light brownish-yellowish in colour, silty, quartzous with opaque reddish and whitish-grey inclusions. The form resembles HAYES ribbed cooking pots of the 2nd and 3rd century CE from the Aegean region although the rim differs⁵⁶. It could be a later variation of that type concerning the context of the 6th century CE⁵⁷ and also related to RILEY's Late Roman Cooking Ware 3⁵⁸. Their origin remains unidentified; an Aegean origin can mostly be excluded.

K33 – ID 1369, Bef. 127, DM: 16 cm.

Fabric: light brownish-yellowish in colour, silty, quartzous with opaque reddish and whitish-grey inclusions. Surface blackened by soot and grime outside, some traces inside visible. Rounded, thickened rim with two rounded handles joined

⁵⁵ Cf. M. EGLOFF, *Kellia*, pl. 49.5.

⁵⁶ J. HAYES, *The Villa Dionysos Excavations, Knossos: The Pottery*, in: *The Annual of the British School at Athens* 78, pp. 97–169, esp. Fig. 5 and p. 105.

⁵⁷ With a slight variation see M. CAVALAZZI/E. FABBRI, *Cooking Ware from the Excavation of a 5th-7th Century Context in Classe (Ravenna, Italy)*, in: S. MENCHELLI/M. PASQUINUCCI/S. SANTORO (eds.), *LRCW3. Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean: Archaeology and Archaeometry. Comparison between Western and Eastern Mediterranean I*, *BARIntSer* 2185,

Oxford 2010, pp. 623–633, esp. Fig. 5.10, p. 624 with a 6th century CE datation, coming from the Aegean region. See also: J. VROOM, *Late Antique Pottery, Settlement and Trade in the East Mediterranean: A Preliminary Comparison of Ceramics from Limyra (Lycia) and Boeotia*, in: W. BOWDEN/L. LAVAN/C. MACHADO (eds.), *Recent Research on the Late Antique Countryside*, in: *Late Antique Archaeology* 2, Leiden/Boston 2004, pp. 281–331.

⁵⁸ J. RILEY, *The Coarse Pottery from Berenice*, in: J. A. LLOYD (ed.), *Excavations at Sidi Khrebish Benghazi (Berenice) 2, Supplements to Libya Antiqua V*, Tripoli 1979, pp. 91–466, esp. Fig. 107.564.

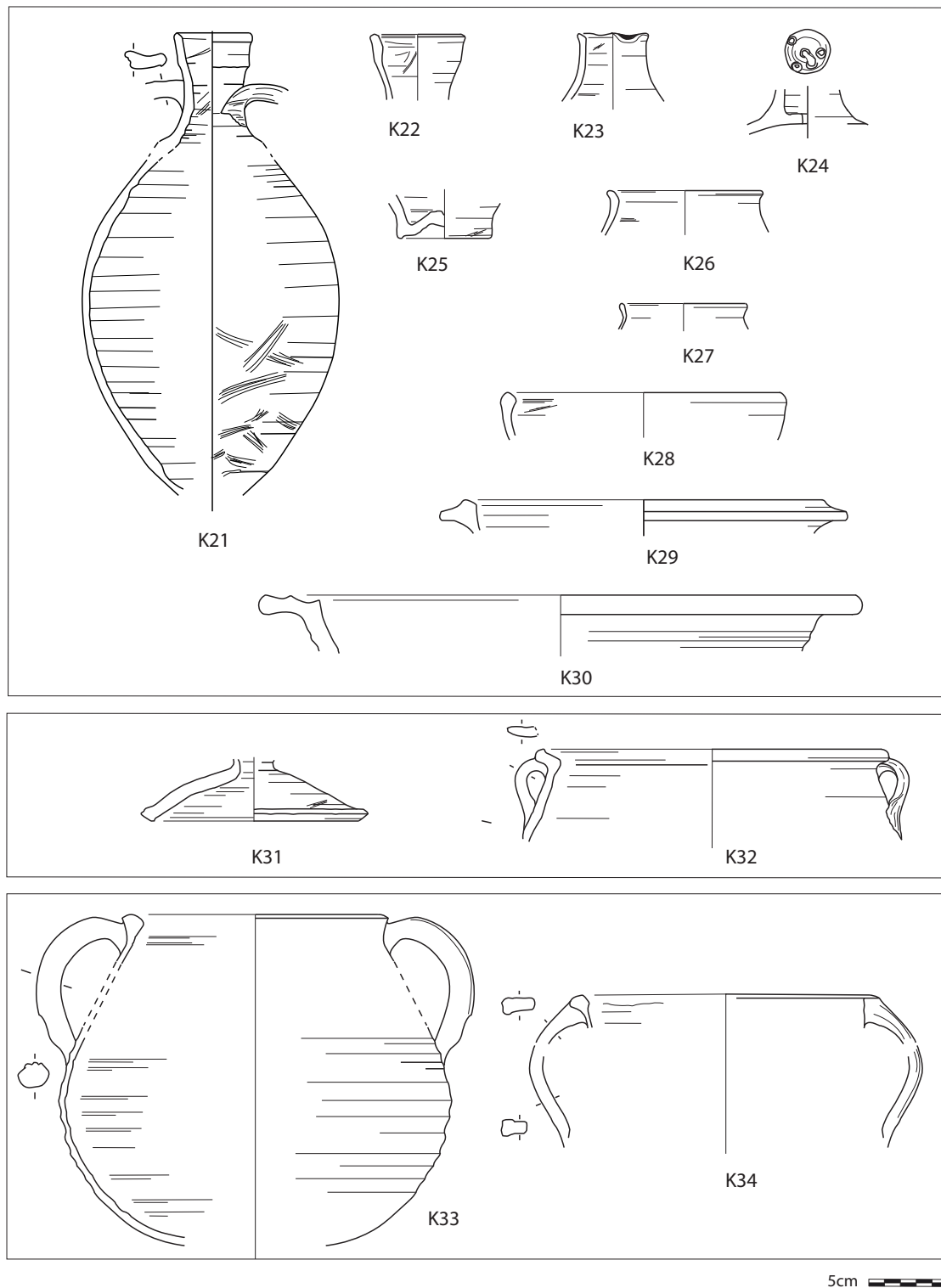


Fig. 22 Pottery finds from Abar el-Kanayis. Egyptian Coarse Ware, Egyptian Cooking Ware, imported Cooking Ware (drawing H. MÖLLER/B. BÖHM/S. VALTIN)

to the rim, terminated on the shoulder, globular ribbed body.

Type: Globular cooking pot.

Context: End of Phase 1.

K34 – ID 1377, Bef. 126, DM: 19 cm.

Fabric: light brownish-yellowish in colour, silty, quartzous with opaque reddish and whitish-grey inclusions. Surface blackened by soot and grime inside and outside. Rounded, thickened rim with two rounded handles joined to the rim.

Type: Globular cooking pot.

Hand-made Pottery

Quite a few vessels of Hand-made Pottery (Fig. 23, K35–K40) have been found in the stratified contexts of the building⁵⁹. It could be verified on the basis of the sherds from Abar el-Kanayis that this type of pottery, mainly tempered with shells and now subsumed under the name Northern Libyan Desert Ware (NLDW) is of antique origin and can be associated with the indigenous population of the Eastern Marmarica, with 'Libyans' or Berber tribes (see below, pp. 172–173)⁶⁰. The spectrum of stratified forms in Abar el-Kanayis covers two types: bowls and jars with inverted rims, whereas some carry a horizontal lug. Their fabric in general is brownish-red in colour, coarse and tempered by calcite grits, along with a few shells, black opaque and some powdery inclusions (SH 1) or next to calcite grits and shells tempered with fireclay with variations of reddish-yellow, reddish-brown, light and dark brown in colour (SH 2 with varia A and C) (K35–K38). Others (K39, K40) occur with a brownish-beige fabric, sometimes blackish in colour, tempered by quartz with reddish powdery and white opaque inclusions and chaff (FW 1) or a greyish-black fabric, sandy with reddish and yellowish-white powdery inclusions (FW 2(2))⁶¹.

Especially the jars with inverted rims were probably mainly used as cooking pots⁶² as shown by traces of soot and grime. Some occur with incised decoration such as floral motifs (K40).

K35 – ID 1126, Bef. 60, DM: 23 cm.

Fabric: SH 1. Surface abraded. Rounded rim.

Type: Bowl.

Context: End of Phase 1.

K36 – ID 1127, Bef. 60, DM: 20 cm.

Fabric: SH 2. Surface roughly abraded, burnished. Incurved rim, that thickens on the inside.

Type: Jar with inverted rim.

Context: End of Phase 1.

K37 – ID 1124, Bef. 60, DM: 13 cm.

Fabric: SH 1. Surface abraded, burnished. Incurved, plain cut rim with lugs made of horizontal bars with reverted ends.

Type: Jar with inverted rim and horizontal lug.

Context: End of Phase 1.

K38 – ID 1139, Bef. 33, DM: 21 cm.

Fabric: SH 2. Surface roughly abraded, burnished. Inclusions visible on the surface. Incurved, plain cut rim with lugs made of horizontal bars with rounded ends and a chain of notches for decoration.

Type: Jar with inverted rim and horizontal lug.

Context: End of Phase 1.

K39 – ID 1172, Bef. 3, 16 and 34, DM: 15 cm.

Fabric: FW 1. Surface abraded, burnished. Incurved, slightly stepped rim with lugs made of horizontal bars with rounded ends.

Type: Jar with inverted rim and horizontal lug.

Context: Phase 3.

K40 – ID 1331, Bef. 130 and 133, DM: ?

Fabric: FW 2(2). Surface abraded. Incised decoration on the outside, two branches, arranged horizontally and parallelly to each other.

Type: ?

(H. M.)

Miscellaneous finds

Lamps

One piece of a Roman lamp (Fig. 23, K41) of unknown, but non-Egyptian origin was found. The base

⁵⁹ A complete list of stratified finds in Abar el-Kanayis see in A.-K. RIEGER/H. MÖLLER, *Northern Libyan Desert Ware*, Tab. 2.

⁶⁰ For a first characterization see L. HULIN, *Sites with Shell-Tempered Pottery; Shell-Tempered Ware*, in: D. WHITE, *Marsa Matruh I. The Excavation. The University of Pennsylvania Museum of Archaeology and Anthropology's Excavation on Bates's Island, Marsa Matruh, Egypt 1985–1989, Prehistory Monographs 1*, Philadelphia 2002, pp. 91–103; for the new finds and chronological 'update'

see A.-K. RIEGER/H. MÖLLER, *Northern Libyan Desert Ware*. Cf. the Eastern Desert Ware, H. BARNARD, *Eastern Desert Ware: Traces of the Inhabitants of the Eastern Deserts in Egypt and Sudan during the 4th-6th centuries CE*, BARIntSer 1824, Oxford 2008.

⁶¹ For the description of the clay see also A.-K. RIEGER/H. MÖLLER, *Northern Libyan Desert Ware*, p. 15–18 and Fig. 2.

⁶² Loc. cit.

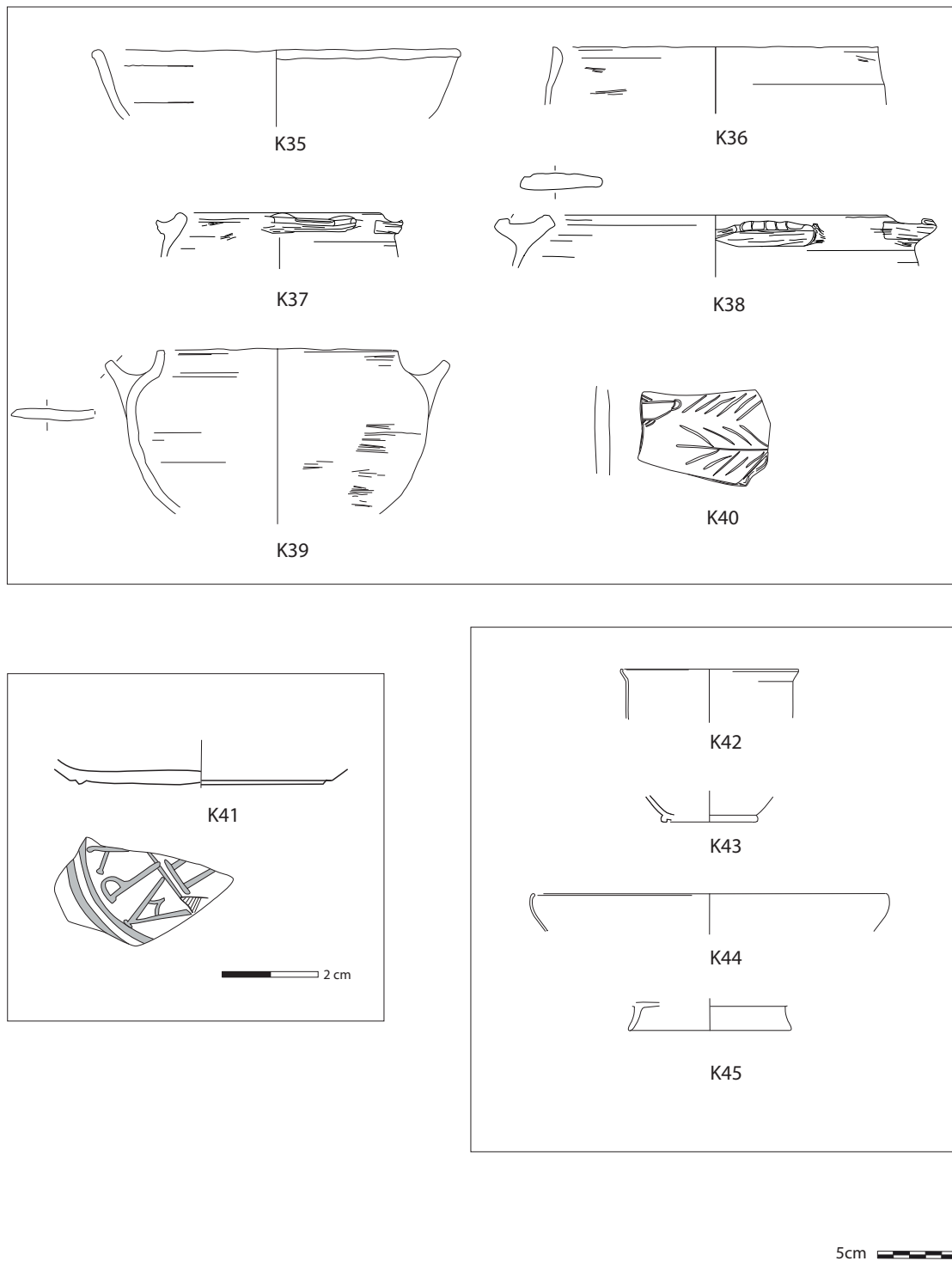


Fig. 23 Pottery finds from Abar el-Kanayis. Hand-made Pottery, Lamp, Glass (drawing H. MÖLLER/B. BÖHM/S. VALTIN)

carries incised letters [APY(...)]Π], the "A" is made with a cross-stroke. The fabric is beige, silty and very fine.

K 41 – ID 1143, Bef. 33.

Type: Base of a lamp with incised letters.

Context: End of Phase 1.

Glass

Besides modern glass, only a few pieces of Late Roman glass (Fig. 23, K42–K45) have been found. They all belong to the 4th to 6th century CE⁶³. One rim (K42) belongs to a Late Roman glass lamp. Two ring-bases of a different type, one to a plate (K45) were found in the debris layers of Late Roman time and belong to open forms as well as the rim of a bowl (K43). All are translucent, green or colourless and monochrome and were presumably produced in Egypt.

K42 – ID 1350, Bef. 92, DM: 11 cm.

Fabric: greenish, translucent. Rim slightly everted.

Type: Glass lamp.

Context: Phase 1.

K43 – ID 1192, Bef. 36, DM: 6 cm.

Fabric: colourless, translucent. Ring-base, probably dead-mould casted.

Context: End of Phase 1.

K44 – ID 1194, Bef. 60, DM: 22 cm.

Fabric: greenish, translucent. Rim slightly inverted.

Type: bowl.

Context: End of Phase 1.

K45 – ID 1193, Bef. 60, DM: 10 cm.

Fabric: greenish, translucent. Ring-base, probably dead-mould casted.

Type: plate.

Context: End of Phase 1.

(H. M.)

Coins

Only five coins were found at Abar el-Kanayis, four of them in the layers of drifted sands, where mixed materials from Late Roman to recent times appear. According to a first assessment based on photographs, the coins belong to the 4th century CE. Ptolemaic and

Alexandrian (1st to 3rd century CE) coinage and, referring to criteria such as weight and size the time of the Tetrarchy can be excluded. There is also no 'mass coinage' from the time of Constantius II (type FEL TEMP REPARATIO/falling horseman) of the years around 350 CE, and from the Valentinian or Theodosian dynasties, therefore the first half or the middle of the 4th century CE can rather be suggested as a date.

M1 – ID 1166, Bef. 3. Weight (uncleaned): 1.77 g, DM: 1,9 cm, thickness: 0.2 cm.

Follis, Type GLORIA EXERCITVS 2 standards, 330–335 CE.

M2 – ID 1167, Bef. 3. Weight (uncleaned): 3.33 g, DM: 1,9 cm, thickness: 0.9 cm.

Follis? Late Roman (4th century CE?)

M3 – ID 1168, Bef. 3. Weight (uncleaned): 1.43 g, DM: 1.3 cm, thickness: 0.23 cm.

AE, probably Type GLORIA EXERCITVS 1 standard (335–341 CE?).

M4 – ID 1359, Bef. 3. Weight (uncleaned): 1.53 g, DM: 1.6 cm, thickness: 0.32 cm.

AE Frag., Late Roman (4th century CE?).

M5 – ID 1338, Bef. 129.

AE, probably Late Roman⁶⁴.

(H.-C. N)

Discussion

We have to keep in mind that Abar el-Kanayis, however, is a place where no production – neither of commodities nor of pottery (when focussing on amphorae rather than Hand-made Pottery) – takes place, but all the more traffic and transport of goods in containers from the coast to Siwa and back again. In other words, all finds are imported, most of them in a regional sense and produced on the coastal sites, but also in an international sense, since imports from the Western and Eastern Mediterranean do exist in the material.

That the spectrum of finds is very limited can be explained by the function of the building as a way station: Thus we mainly expect pottery that is used at the station for preparing food and restocking provisions: jugs/jars, cooking pots including 'simple' tableware like dishes and bowls, which can be seen partly

⁶³ Personal communication with M.-D. NENNA (CNRS Lyon).

⁶⁴ Unfortunately the coin could not be handed out again for further investigations.

as the inventory of the building, partly as brought there by the people. Many of the ceramic vessels show the typical residues of use on open fire. People stopped by, prepared their food on the site (maybe even brought their food in containers, since there was no possibility to obtain food except by hunting), cooked it, restocked their provisions and left their litter. Other vessels probably broke accidentally while packing and unpacking the draught animals.

From another perspective the pottery also reflects up to a certain point the traded goods that have been transported between Siwa and the coast and *vice versa*⁶⁵. This includes mainly amphorae as containers for foodstuffs on demand (e. g. local AE 3, imported KEAY LII and LRA 1) and some assorted vessels, like Fine Ware, here to be quoted as sherds of African Red Slip Ware (ARS) that show a trade-connection to North Africa, today's Tunisia⁶⁶ and also to the Eastern Mediterranean as evidenced by one fragment of Late Roman C Ware probably produced in the Phocaea region in Asia Minor.

Noteworthy is the appearance of two imported cooking pots of unknown origin, which, at first glance, seem to be from the same category of traded good as the Fine Ware, since they are technically highly developed and therefore a kind of luxury alternative to the standard items. Since one of them does carry traces of soot and grime on the outside we have to conclude, that they have not only been traded, carried to Siwa for selling, but also have been used on the site itself and therefore functioned as a pot for the trader and not only as traded goods. This has to be kept in mind when considering the Fine Ware and glass as well: To what extent was it exported for a certain clientele at

Siwa, and to what extent used by the trader because of a certain personal preference?

Nevertheless their proveniences give a fragmentary idea of an exchange network of regional and intraregional scale. Even though the fact could be seen as merely coincidental, at first glance the demand of regional goods seems to be higher in Roman than in Late Roman times, and Egyptian Amphorae (see pp. 155–157) made at the coastal site prevail⁶⁷, while imported Roman amphorae are almost absent. This is noteworthy since in Alexandria, especially after the middle of the 3rd century CE, imports increase and Gazan Late Roman 4 Amphorae are almost as common as AE 3 from Egypt⁶⁸. They are even to a certain extent scattered all over the sites on the northwestern coast⁶⁹, which proves, that there was a trade route towards the west. The same applies to classical African Amphorae and Late Roman D Fine Ware, which can be found in the coastal zones and also in Siwa⁷⁰, but are not represented in the material of Abar el-Kanayis. This fact underlines again the fragmentary nature of the spectrum and random loss of goods in Abar el-Kanayis as the result of a passers-by station.

Even though only a tendency can be shown, in Late Roman times a shift to imported goods mainly from Cilicia is visible in the remains, supported by the absence of Late Roman Egyptian Amphorae. This matches the results of the Marmarica-Survey for the coastal area in that there is probably no pottery production in Late Roman times on the one side⁷¹ and hardly any imports from the Nile Valley and Delta region, the producers of Egyptian Late Roman Amphorae, on the other side⁷². All in all the number of production sites in the Marmarica and Mareotis⁷³ decreases

⁶⁵ There is no pottery from the Graeco-Roman period from Siwa published yet. Only L. BAVAY describes Rhodian and North African Amphorae, next to fragments of DRESSEL 1 A–B and 2–4 amphorae, both probably from Italy, and DRESSEL 7–11 of uncertain origin from a pottery dump of the mid-Roman period in the Ammonoion.

⁶⁶ Regarding African imports in Egypt see also P. BALLETT/M. BONIFAY/S. MARCHAND, *Africa vs Aegyptus: Routes, rythmes et adaptations de la ceramique Africaine en Égypte*, in: S. GUÉDON (ed.), *Entre Afrique et Égypte: relations et échanges entre les espaces au sud de la Méditerranée à l'époque romaine. Actes du colloque International, Limoges, 23./24. Septembre 2010*, Bordeaux, in print.

⁶⁷ These are made out of the same or similar clay composition as the pottery that has been produced in the coastal region and on the Northern Tableland in the Eastern Marmarica, cf. A.-K. RIEGER/H. MÖLLER, *Kilns*.

⁶⁸ Cf. the amphora finds at the Necropolis at Gabbari, A. G. SENOL, *Distribution*, diagramme 3.

⁶⁹ A.-K. RIEGER ET AL., *Water, Soil and Agriculture*.

⁷⁰ L. BAVAY mentioned finds of Africana I Piccolo and Tripolitanian Amphorae found in Siwa, cf. personal communication by B. BÖHM, University of Göttingen; for pottery spectrum in the coastal zones

see H. MÖLLER, *Ptolemäisch-Römische Keramik in der antiken Marmarica – Nordwestägyptens Wüstenrandgebiet als Produktionsort und Mittler* (PhD thesis in progress).

⁷¹ A site in Wadi Hashefi the Northern Tableland could have produced Late Roman pottery (Cooking Ware and bag-shaped Amphorae). Further investigations to corroborate this assumption based on surface finds have yet to be undertaken.

⁷² D. DIXNEUF, *Amphores égyptiennes*, pp. 135–176.

⁷³ For the Marmarica see A.-K. RIEGER/H. MÖLLER, *Kilns*, esp. Table 1 and pp. 165–167; for the Mareotis region see J.-Y. EMPEREUR/M. PICON, *Fours d'amphores*; J.-Y. EMPEREUR/M. PICON, *La reconnaissance des productions des ateliers céramiques: l'exemple de la Maréotide*, in: CCE 3, 1992, pp. 145–152; J.-Y. EMPEREUR/M. PICON, *Les ateliers d'amphores du lac Mariout*, in: J.-Y. EMPEREUR (ed.), *Commerce et artisanat dans l'Alexandrie hellénistique et romaine*, BCH Suppl. 33, 1998 (hereafter: J.-Y. EMPEREUR, *Commerce et artisanat*), pp. 75–91; H. SZYMAŃSKA/K. BABRAJ, *Marea. Excavations 2004*, in: PAM 16, 2005, pp. 43–54; F. EL-ASHMAWI, *Pottery Kiln and Wine-factory at Burg el-Arab*, in: J.-Y. EMPEREUR, *Commerce et artisanat*, pp. 55–64; A. ABD EL-FATAH, *Recent Discoveries in Alexandria and the Chôra*, in: J.-Y. EMPEREUR, *Commerce et artisanat*, pp. 38–53.

from hundreds of kiln sites to only a few from Roman to Late Roman times⁷⁴. These results are repeated elsewhere: In Alexandria trade relations with the Eastern Mediterranean, especially Cilicia, grow during the 5th century CE and after the partition of the Eastern and Western Roman Empire, as an abundance of Late Roman 1 Amphora in the city shows⁷⁵ while the percentage of Late Roman Egyptian Amphora decreases⁷⁶.

The lack of Late Roman Egyptian Amphorae on the site can therefore also be explained by the general fact that the local amphora production stagnated to a certain extent during that time. But we should also keep in mind that the way how to transport the goods could have changed within Late Roman times and therefore less Egyptian-made Late Roman Amphorae do exist, respectively none in Abar el-Kanayis: Maybe amphorae as containers for inland trade were substituted by easier-to-carry skins or barrels. Evidence for a change in transportation containers and even an 'off-loading' from transport amphorae into barrels and skins for further and easier trade in the inland/hinterland, for example, are suggested for late antiquity in Tunisia and maybe could be assumed for Egypt as well, at least to a certain extent⁷⁷.

The 'litter' left by the passers-by at the station of Abar el-Kanayis frequented in Roman and more intensively in Late Roman times gives an insight into the traded goods, containers and vessels and their changes over time – goods, that have been sold from the coastal sites to the oasis and *vice versa*, revealing the demands of regional and supra-regional character with Paraitonion as harbour and mediator for the desert trading centre at Siwa.

(H. M.)

Diet and transported (trade) goods

Referring to the traded goods, the amphora spectrum at Abar el-Kanayis, mainly AE 3.1 from the coastal zone, allows one to conclude that in Roman times locally produced wine and its derivatives were the premium good that has been transported to Siwa⁷⁸. Wine was grown extensively on the Northern Tableland and may have partly processed to vinegar for conserving vegetables and fruits⁷⁹. Later onwards the wine production seems to stagnate on the coast as testified by the disappearance of production sites latest in the 5th century CE. At this time imports from Italy and Cilicia complement or replace the wine supply to the south as shown by the amphorae produced in Italy and Cilicia represented in the spectrum of finds.

Archaeozoological analysis reveals the consumption of fish and pork at the cistern site, which could have been traded in the form of salted foodstuff or *garum*⁸⁰ (Tab. 2).

Among the archaeobotanical remains coming from the destruction layer date kernels (Fig. 24a) reflect the most famous good transported on the route from Ammon (Siwa) to Paraitonion⁸¹; and dates certainly represent part of the vegetal diet of the travellers. A peach kernel (Fig. 24b) (*Prunus persica*) points to the existence of fruit tree gardens either in Siwa or in the coastal area. Whether it remained in Abar el-Kanayis as part of a batch or the provision of a traveller is unclear. The remains of barley (*Hordeum vulgare*, Fig. 13), cultivated on the Northern Tableland to an extent that allowed it to be sold⁸², however, were used as mudbrick temper (see above, p. 144) on the site. Whether one considers this context of the cereal

⁷⁴ See M. RODZIEWICZ, *Wine Production and Trade in Late Roman Alexandria*, in: C. DÉCOBERT/J.-Y. EMPEREUR/C. PICARD (eds.), *Alexandrie médiévale* 4, Alexandria 2011, pp. 39–56, esp. p. 51. So far only three sites in Egypt are known for the production of Late Roman Egyptian Amphorae LRA 5/6, see D. DIXNEUF, *Amphores égyptiennes*, pp. 135–179; see also J. ENGEMANN, *À propos des amphores d'Abou Mina*, in: CCE 3, 1992, pp. 153–159 for one of these sites in Abu Mina. For LRA 7 see D. DIXNEUF, *Amphores égyptiennes*, pp. 154–173.

⁷⁵ A. G. SENOL, *Distribution*, p. 67. See also G. MAJCHEREK, *Alexandria's Long-distance Trade in Late Antiquity – The Amphora Evidence*, in: J. EIRING/J. LUND (eds.), *Transport Amphorae and Trade in the Eastern Mediterranean, Acts of the International Colloquium at the Danish Institute at Athens (September 2002)*, Athens 2004, pp. 229–237.

⁷⁶ Pelusium, cf. D. DIXNEUF, *Amphores égyptiennes*, pp. 223–227.

⁷⁷ See M. BONIFAY, *Africa: Patterns of Consumption in Coastal Regions vs. Inland Regions. The Ceramic Evidence (300–700 AD)*, in: L. LAVAN ET AL. (eds.), *Local Economies? Production and Exchange of Inland Regions, Late Antique Archaeology* 9, Leiden, forthcoming.

⁷⁸ On the AE 3 see A.-K. RIEGER/H. MÖLLER, *Kilns*, p. 163, Table 1 and Fig. 22–27.

⁷⁹ See COLUMELLA, *De re rustica* 12, about the importance of vinegar in ancient food production and conservation; STRABON, *Geographica*, 17, 1, 14 on wine in the northwestern coastal region of Egypt.

⁸⁰ For the detailed analysis of the animal bones, which is summarised here, see N. PÖLLATH/A.-K. RIEGER, *Insights in Diet and Economy of the Eastern Marmarica. Faunal Remains from Greco-Roman Sites in Northwestern Egypt (Abar el-Kanayis, Wadi Umm el-Ashdan and Wadi Qasaba)*, in: MDAIK 67, 2011, pp. 163–180, esp. pp. 168–73 (hereafter N. PÖLLATH/A.-K. RIEGER, *Insights*); D. DIXNEUF, *Amphores égyptiennes*, p. 210.

⁸¹ G. WAGNER, *Les oasis d'Égypte à l'époque grecque, romaine et byzantine, d'après les documents grecs*, Cairo 1987, p. 296 with the relevant sources (hereafter: G. WAGNER, *Les oasis*).

⁸² TH. VETTER ET AL., *Rainwater Harvesting*, esp. p. 20; A.-K. RIEGER/H. MÖLLER, *Kilns*, p. 144.

Tab. 2 Faunal composition resulting from the stratified bone finds at Abar el-Kanayis (NISP = number of identified specimens)

	Species	NISP	%	Weight (g)	%
Mammals	Cattle	3	0.5	8.5	0.2
	Sheep/goat	485			
	Sheep	40	85.9	2240.8	58.0
	Goat	30			
	Pig	19	2.9	64.3	1.7
	Dog	7	1.1	18.7	0.5
	Equid indet.	10	1.5		
	Horse	4	0.6	1070.4	27.7
	Donkey	20	3.1		
	Camel	4	0.6	297.4	7.7
	Domestic mammals total	622	96.3	3700.1	95.8
	Fox small	1	0.2	0.8	0.0
	<i>Gazella</i> sp.	18	2.8	158.4	4.1
	<i>Lepus europaeus</i>	1	0.2	0.7	0.0
	Rodentia indet.	4	0.6	0.6	0.0
	Wild mammals total	24	3.7	160.5	4.2
	Mammals ident. total	646	100.0	3860.6	100.0
	Mammal indet. (cattle size)	22		71.6	
	Mammal indet. (sheep size)	4		21.5	
	Mammal indet.	170		129.2	
Birds	Chicken	20			
	Ostrich, <i>Struthio camelus</i>	(40)	eggshells		
	Redshank, <i>Tringa erythropus/totanus</i>	1			
	White-fronted goose, <i>Anser albifrons</i>	1			
	<i>Athene noctua</i>	1			
	Bird, indet.	5			
Fish	Marine fish, unidentified	1			
	Cyprinidae, indet.	1			
	Fish, indet.	2			
Molluscs	<i>Eremina</i> sp.	7			

to be also proof of its consumption in Abar el-Kanayis or even its export to Siwa, is debatable. A piece of palm tree wood (*Phoenix dactylifera*), dated to the 7th century CE, to the phase after the abandonment of the building, arrived at Abar el-Kanayis from Siwa or the coastal zone as material for transport devices or fuel.

The organic remains from plants and animals as well as the pottery analyses concerning the content of amphorae show that the diet of the people stopping

at Abar el-Kanayis comprised besides some meat, eggs and milk products also of dates, peach and barley as the carbohydrate supply and were negotiated on demand either from north to south or south to north.

Livestock was part of the commodity that travelled from north to south – almost 60 % of the bone material at Abar el-Kanayis is from sheep and goat (Tab. 2). Since these animals were not raised in large quantities in the oasis, but in the steppe zones in the northern Marmarica, they were sought-after goods in

Siwa⁸³. *Vice versa* Siwa was not only famous for its dates, but also for oil and salt in antiquity⁸⁴, traded from there to the Mediterranean coast, but any trace of these goods in the remains from Abar el-Kanayis is missing. Also oil was exported from Siwa in a significant amount and may have been in demand in the coastal zones where no evidence of olive cultivation is testified. How it was transported remains unclear⁸⁵. Other goods from remote areas arriving in Siwa (gold, ebony) may have passed Abar el-Kanayis on the Masrab Istabl on their way to the Mediterranean coast, even though the important centres of Cyrene or Alexandria were connected to the oasis by direct routes⁸⁶. But the strong relationship between Siwa and Paraitonion is emphasised by the name "Ammonia" for Paraitonion serving as the harbour for Siwa and producing goods not available in the oasis (Fig. 25)⁸⁷.

The rather high rate of imported pottery at the site in comparison to places in the northern zones of the Marmarica reflects the demands in the oasis covered by a supra-regional exchange of goods. Evaluating the different proveniences of the imported pottery the Mediterranean Sea seems to be the more attractive trade partner than the Nile Valley and Delta region. The range of locally produced containers, however, counts as evidence that many regional goods were also traded to the oasis.

(A.-K. R./U. TH./V. A./N. P.)



Fig. 24a Remains of dates (photograph A. THEISS)

4. The function of the building as a roadhouse

4.1 Architectural comparisons

Looking for buildings comparable in layout, infrastructural position and facilities, the general concept of the structure at Abar el-Kanayis corresponds to a kind of way station along regional or transregional routes that is common all over the Mediterranean and Near East from antiquity to medieval times. But the architectural arrangements differ due to chrono-



Fig. 24b Remains of a peach (photograph V. ASENSI)

⁸³ G. WAGNER, *Les oasis*, p. 310.

⁸⁴ ARRIAN, *Alexándrou anábasis*, 3, 4; SYNESIOS, *Epistulae*, 148; PLINIUS, *Naturalis Historia*, 31, 39 and 46; see K.-P. KUHLMANN, *Roman and Byzantine Siwa: Developing a Latent Picture*, in: O. E. KAPER (ed.), *Life on the Fringe. Living in the Southern Egyptian Deserts during the Roman and Early-Byzantine Periods*, CNWS Publications 71, Leiden 1998, pp. 159–180; pp. 173–174; G. WAGNER, *Les oasis*, pp. 294–299.

⁸⁵ See POxy 2423 III 21. We do neither know anything about the production of amphorae in Siwa nor about the use of other oil containers.

⁸⁶ The relevance of trade connections in and through the northern parts of the Libyan Desert is shown in TH. VETTER ET AL., *Routes*, however, southerly routes are of higher economic importance, cf. G. WAGNER, *Les oasis*, p. 294; K.-P. KUHLMANN, *Das Ammoneion. Archäologie, Geschichte und Kulturpraxis des Orakels von Siwa*, AV 75, Mainz 1988, pp. 71; K.-P. KUHLMANN, *The "Oasis Bypath" or the Issue of Desert Trade in Pharaonic Times*, in: T. LENSSEN-ERZ (ed.), *Tides of the Desert – Gezeiten der Wüste*, *Africa Praehistorica* 14, Cologne 2002, pp. 125–170, pp. 160, 165, 172.

⁸⁷ STRABON, *Geographia*, 17,1,14.

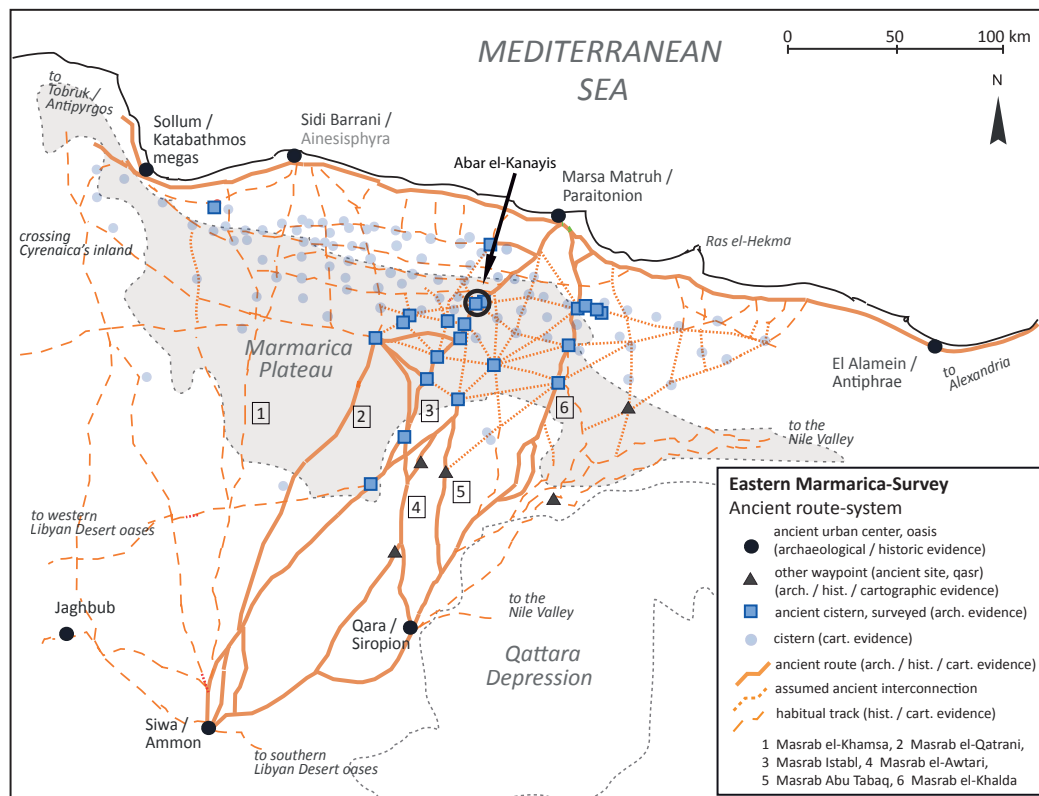


Fig. 25 Map of the ancient route system on the Marmarica-Plateau (map A.-K. RIEGER)

logical, regional and also religious contexts. If named *pandocheion* (Greek, and later Byzantine influenced Mediterranean regions), *hospitium*, *mansio* (Latin) or ὄδρευμα⁸⁸ and, later in history, *funduq* (Arabic-Greek), *manzil* (Arabic), *saray* (Persian) or *khan* (Selçuk, eastern Islamic world) – all these terms cover a topographically as well as architecturally wide range of buildings made for people who travel, itinerate, transport and trade goods, i. e. for non-locals who do not reside in a private homestead in the area, they are moving in.

Screening the literature about pre-modern way stations and caravanserais clearly shows the directions of research: There are topographically oriented studies, as well as the ones that concentrate on the development of such buildings as pilgrim houses. One searches in vain for comprehensive (including architectural and written sources) and comparative approaches on ancient way stations⁸⁹, starting with the problem that there is only a small number of well-documented ones. Only the stations along the Roman Imperial roads in the Eastern Desert of Egypt are

historically and functionally focussed on – due to their exceptional character.

Even though the main purposes of way stations for travellers, pilgrims or traders, who bring provisions or goods and pack animals with them, are predominantly the same, differences as reflected in the architecture do exist. A constitutive and thus analogous feature is a courtyard as a protected but wide space for persons, goods and animals as well as some separate rooms for administrative use or for the secluded sojourn of several persons. The number of separated rooms as well as additional facilities like baths can point to the use for travellers and pilgrims. The large dimensions of gateways and courtyards or lockable rooms are necessary for the use by traders arriving with piles of goods packed on animals, accompanied by sufficient water supply for men and animals. But still, a thorough comparison of way stations and inns bears methodological difficulties, since there are climatic, socio-economic and infrastructural differences to be considered when looking for analogies: For build-

⁸⁸ Cf. PLINIUS, *Naturalis Historia*, 17, 45 for the description of those buildings in the Eastern Desert.

⁸⁹ O. R. CONSTABLE, *Housing the Stranger in the Mediterranean World: Lodging, Trade, and Travel in Late Antiquity and the Middle*

Ages, Cambridge 2003, p. 4 about the changing meaning of words used for stopping places; p. 53 about the archaeological and architectural evidence which is "intriguing yet inconclusive".

ings situated on main routes used by many people a different layout pattern may be necessary because of a greater variety of passers-by than for facilities on a secondary route; cold and water-rich highlands result in different architectural arrangements and facilities for roadside inns than dusty and hot plains. However, the functional layout of a roadhouse with facilities like water and food/forage supply in combination with an infrastructurally convenient position (close to a road or bridge, in the middle between two towns/centers or in a town close to its economic centre) provides the best grounds to call a building a roadhouse, station or inn.

The topographically closest neighbours to the building at Abar el-Kanayis (and similar ones on the Marmarica-Plateau⁹⁰) are the ὕδρεύματα preserved along the routes in the Eastern Desert⁹¹. Since they are installed and maintained by a central administrative power for reasons of easy supply of the quarry and mining sites and transport of the geological resources between Nile Valley and Red Sea coast, they have a more standardised layout and defensive (military) character. The more elaborate ones possess – of course – water installations, towers, gates, stables or animal-tethering lines combined with the above mentioned features like courtyards and adjoining rooms. ὕδρεύματα appear as fortified watering stations rather than open cistern sites with further facilities, as the character of the Abar el-Kanayis' site can be summarised. Thus their layout follows more defined models depending on their protective purpose⁹². The topographically close comparisons result in a slightly different function.

The evidence is very poor when looking for comparable structures to the west of the Marmarica. Only

some remains in Mechili or Medinet Bu Hindi can be considered similar structures, both situated on an east-west route crossing the southern parts of the Gebel el-Akhdar⁹³. The complex at Medinet Bu Hindi, the crossroads with a route coming from Derna at the coast, is described as a trapezoid courtyard with two gateways, dating to Late Antiquity. More detailed information is not available⁹⁴. Of Mechili, lying ca. 90 km west of Bu Hindi, the only description known to the author is the one by R. G. GOODCHILD as a "watering-point and track-centre", whose Roman predecessor may be covered by an "Islamic" fortress⁹⁵.

In the Libyan Desert (Egypt, Libya) a survey of this type of edifice and institution has not been yet compiled for Roman and early Islamic times, not to mention a scholarly discussion of development and distribution of such buildings, which may be due to the historically more interesting implications offered by the way stations in the Eastern Desert. However, the finds at Abar el-Kanayis on the Marmarica-Plateau contribute to the question of roadside inns in that region, since the layout of the complex is comparable to the aforementioned type of building: A large courtyard surrounded by thick walls in combination with several rooms distributed on two storeys at each end of the courtyard provides shelter for travellers, traders or herders coming along. Goods and other commodities can be stored safely in either the rooms or the courtyard. A second smaller courtyard at the northern end of the building (some wall remains lead to the assumption of a courtyard here as well) may have been used as a pen for the draught animals. People can rest, prepare food, and spend the night in the rooms or even gather with their tents overnight in the courtyard at the cistern site, since foraging op-

⁹⁰ See TH. VETTER ET AL., *Routes*, where eight more cistern sites with roadhouses are considered.

⁹¹ S. E. SIDEBOTHAM, *Roman Economic Policy in the Erythra Thalassa*, 30 B. C.-A. D. 217, Leiden 1986, p. 3, 62–65; H. CUVIGNY (ed.), *The Route to Myos Hormos. L'armée romaine dans le desert Oriental d'Égypte. Praesidia du desert de Berenice I*, FIFAO 48, Cairo 2003, pp. 295–360; see N. PÖLLATH/A.-K. RIEGER, *Insights*, pp. 177–179, for a comparison of Abar el-Kanayis with a ὕδρευμα concerning the archaeozoological remains. For the archaeological remains they preserve see S. E. SIDEBOTHAM ET AL., *Survey of the 'Abu Sha'ar-Nile Road*, in: *AJA* 95, 1991, pp. 571–622 (hereafter S. E. SIDEBOTHAM ET AL., *'Abu Sha'ar-Nile Road*) and especially on water supply installations S. E. SIDEBOTHAM, *Berenike and the Ancient Maritime Spice Route*, Berkeley 2011, pp. 87–124.

⁹² There are also less standardised buildings and stations in the Eastern Desert like Wadi Belih and Bab el-Mukhenig (S. E. SIDEBOTHAM ET AL., *'Abu Sha'ar-Nile Road*, pp. 576–578, 587). *Hydreumata* in the oases of the Western (Libyan) Desert are to be translated as spring or well, not as a building for sojourn, cf. G. WAGNER, *Les oasis*, pp. 158–165, the list of *hydreumata* at Hibis (Kharga) or

pp. 203–204 (Dakhla), and A. BAKKER (paper delivered at the DOP conference 2007, not yet published).

⁹³ For the location of the sites see M. LUNĪ, *Il caravanserraglio di Cirene*, in: *QuadALibya* 10, 1979, pp. 49–65, fig. 11.

⁹⁴ See *loc. cit.*, p. 62 for the layout and date of the building at Medinet Bu Hindi; cf. S. СТУСНИ, *Architettura cirenaica*, Rome 1975, p. 480, Tav. V. The caravanserail adjoining the city wall in the southeast of Cyrene, in use from the 2nd century BC to Late Antiquity is not comparable, since it is the westernmost terminus of the infrastructural network on the Marmarica-Plateau and situated in the city, see M. LUNĪ, *op. cit.*, p. 58. It serves rather as a collecting and controlling point between the inner city and the outside than as a stopover along a route. However, the concept of courtyard, cistern (the visible remains of which go back to the 4th century CE) and some adjoining rooms matches the layout of the building at Abar el-Kanayis.

⁹⁵ For Mechili see R. G. GOODCHILD, *The Roman and Byzantine Limes in Cyrenaica*, in: *JRS* 43, 1953, pp. 65–72, p. 72. Its character as waystation (or caravanserai) has yet to be studied.

portunities for the animals and a protected storage place for the goods are more necessary than other amenities.

Thus the building of Abar el-Kanayis offered a safe and comfortable stay on the way between Siwa and the coast or on an East-West traverse of the Marmarica-Plateau between the Nile Valley and Cyrenaica. The cisterns provided water, the nearby rangelands in the depression provided food and rest for the draught animals and the livestock of roaming or trading herders.

The starting point for any consideration on who was responsible for the erection and maintenance of the roadhouse has to be the fact that there is no archaeological evidence for an extended influence by state authorities in the Eastern Marmarica south of the coast. Even though many cistern sites on the Marmarica-Plateau were increasingly frequented in Roman times⁹⁶, nothing points to a long-term infrastructural concept by the Roman administration applied to the route-system comparable to the Eastern Desert, but rather to increased surplus production, resulting in trade, traffic and thus the enhancement of the route infrastructure. A governmental (and bureaucratic) influence may not have reached further south than the Northern Tableland, as the informative PMarm. shows for a region to the west of the investigation area⁹⁷. Thus we assume, that the buildings at Abar el-Kanayis resulted from a rather decentrally organised collaboration of the inhabitants of the coastal sites, the nomadic inhabitants of the Tableland and the Marmarica-Plateau and the inhabitants of Siwa, regulated by regional economic demands⁹⁸. They had already started with the installation of vitally important cisterns between the coast and the oasis or along the east-west routes long before Graeco-Roman impacts on the region began. By way of usage agreements, easements, and a tenantry system, with a person on duty at the cistern site who took care of the building as well as the passers-by and the maintenance of the cisterns, the different parties (nomadic Berbers, oasisitic Berbers and sedentary coastal based inhabitants from the Graeco-Roman sphere) involved in the traffic may have found a convenient solution for the use of the site in Roman and Late Roman times.

(A.-K. R.)

4.2 Water, pots and passers-by

The roadhouse at Abar el-Kanayis as part of the route network of the Marmarica-Plateau served as an important staging post from Roman to Early Byzantine times for people who crossed the desert region between the Qattara-Depression and the Mediterranean coast. The water available from the two cisterns was and is the primary advantage the site offers. Besides the supply with this indispensable resource, two large buildings served as a kind of caravanserai, where people, commodities and draught animals found shelter and protection against weather conditions or other inconvenient occurrences on the plateau. Courtyards and rooms – even though there was no place to stay for longer periods – represented a location in the desert to rest and to meet. Goods as well as provisions and to a certain extent also fodder had to be brought to the site, and in cases of loss and breakage parts of those items remained there.

According to these left-overs (mainly pottery), that provides an insight into the spectrum containers and therefore the goods that were traded, the people who frequented the buildings belonged to a settled society, trading with goods and travelling for exchange reasons, or these persons had at least access to pottery made in the Graeco-Roman influenced sphere of the coast. Another group of users can be associated with nomadically living people, who came to the cistern site to water their flocks and herds, or as guides. At a site like Abar el-Kanayis we are able to focus on representatives of the archaeologically less visible people roaming the Marmarica-Plateau in antiquity, who used the roadhouse at the cisterns, too. Finds of Hand-made Pottery (NLDW) are clearly to be seen as a relict of indigenous people of the Eastern Marmarica, since these ceramic products can be made on the spot without special equipment and fired in an open fire. Besides the chronological importance of the pottery finds they provide information about the socio-cultural groups that gathered at the cisterns of Abar el-Kanayis on the Marmarica-Plateau: While wheel-made pottery like Amphorae, Coarse and Cooking Ware, but also Fine Ware belong to the coastal- or oasis-based traders and travellers with access to such pottery products, the type of Hand-made Pottery re-

⁹⁶ TH. VETTER ET AL., *Routes*.

⁹⁷ The tax lists by the Roman authorities does not affect dwellers on the Marmarica-Plateau but only in the coastal zone and on the Northern Tableland.

⁹⁸ See for the regional trading systems between Bedouins and Siwani in recent times (*sadaqa*) D. P. COLE/S. ALTORKI, *Bedouin, Settlers, and Holiday Makers: Egypt's Changing Northwest Coast*, Cairo 1998, pp. 137–143.

flects the presence of herders, pastoral nomads or hunters at Abar el-Kanayis who roam on the Marmarica-Plateau or serve as guides for caravans having a nomadic or semi-nomadic background and excellent knowledge of the area.

Even though it had later lost its function as a roadhouse, the remains of the northwestern building again gave shelter to a limited group of people in the late 6th century CE. But even in this and the later periods of the cistern site's life, when finds are rare and limited to fire places, campsites or scattered handmade pottery, the water supply along the route across the Marmarica-Plateau still functioned and Abar el-Kanayis was still a stop over and staging-post between the Mediterranean Sea and Siwa.

(A.-K. R.)

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Abstract

An ancient roadhouse was discovered on the route between the Mediterranean Sea and the Oasis of Siwa and partly excavated in the years 2006–2007. The site on the Marmarica-Plateau with two ancient cisterns shows a pattern of use and frequentation of this favoured area on the desert margin at least from Graeco-Roman to recent times.

One main phase of occupation and utilisation in Late Roman times is testified by two buildings, one of which was examined more closely: Its architecture, phase of construction and reuse as well as finds like pottery and archaeobotanical and -zoological remains help to understand how the route between Siwa oasis and the Mediterranean coast with harbour cities like Paraitonion was frequented and which goods people transported across the Marmarica-Plateau.

INHALTSVERZEICHNIS

NICOLE ALEXANIAN, WIEBKE BEBERMEIER, DIRK BLASCHTA	Untersuchungen am unteren Aufweg der Knickpyramide in Dahschur	1
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