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**EL-HAYEZ, BAHARIYA OASIS, EGYPT.
1ST SURVEY REPORT BY THE CZECH INSTITUTE OF EGYPTOLOGY**

**EL-HAYEZ, OÁZA BAHARÍJA, EGYPT.
PRVÁ ZPRÁVA O PRŮZKUMU ČESKÉHO EGYPTOLOGICKÉHO ÚSTAVU**

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1. Introduction

Between 28. 2.-25. 3., 2003, in accordance with the permission granted by the Permanent Committee of the Supreme Council of the Antiquities, Egypt, the Czech Institute of Egyptology, Charles University, Prague, carried out an archaeological survey in the area of El-Heyz in the southern part of the Bahariya oasis. The participating institutions were the Supreme Council of Antiquities, Inspectorate of Antiquities, Bawiti; the Czech Institute of Egyptology (Charles University Prague); the Laboratory of Geoinformatics (University of Jan Evangelista Purkyně, Ústí nad Labem); and the Institute of Archaeology (Czech Academy of Sciences, Brno). Personally, this mission was attended by Assist. Prof. Dr. Miroslav Bárta, director of the mission, egyptologist, Prof. Dr. Miroslav Verner, deputy director, Eng. Vladimír Brůna, geoinformatics specialist, Assist.

Prof. Dr. Jiří Svoboda, archaeologist, and Mr. Sami Mohammad Shriaw, inspector of the SCA, egyptologist.

Nowadays, this area (Figs. 1-2) is only sporadically inhabited, and its history is largely unknown. The first scientific investigations into the history of the area were carried out by Ahmed Fakhry (1974, pp. 110-124). Prehistoric research was previously realised only by F. Hassan (1979). More recently, there were archaeological activities carried out by the Bawiti Inspectorate of Antiquities at sites of El-Riz and Ayin el-Khabata during the last decade of the 20th century. Undoubtedly the peak of scientific popularity focused on Bahariya several years ago, due to the unprecedented discoveries of Zahi Hawass made at the Valley of the Golden Mummies (Hawass, 1991).

The first stage of the current project has been designed for a period of two years (2003 and 2004). Its primary objective is to provide an overall archaeological map which presents the principal sites, along with a description of their potential, character and stage of preservation, structure, and their relationship to the monuments within the ancient landscape.

2. Methods used

The prehistoric and historic survey was conducted systematically in the areas of Bir el-Showish, Umm el-Okhbain, Gard el-Sheikh, Ayin el-Ezza, Mannsaf, Ayin el-Khabata, Qasr Mas'ouda, Tabla Amun and El-Riz. Additional orientation surveys focused on Gebel Mitteli Radwan, Pyramids area (site with two hills in a shape of pyramids), and the marginal escarpments. The plays received special attention as favourable areas for prehistoric settlement and the lithic outcrops as sources for the tool production.

During the mapping of the area the following maps were utilized.

- Map Egypt 1:500 000 Sheet 4, Bahariya Oasis,
- Map Egypt 1: 250 000, Sheet 4-D, Bahariya Oasis,
- General Geological Map 1: 2 000 000.

Already at the very beginning of the project it became clear that the current maps are unsuitable for the intended detailed archaeological work and the ensuing analysis. Therefore, in addition to archaeological objects, additional features were mapped during the survey when considered necessary for the topography of the cultural landscape. These were so-called basic topographic objects: principal roads connecting the sites (desert tracks and asphalt roads), current settlement and vegetation boundaries, water areas, wells, and hill tops when related to archaeological situations. In most cases, it became clear that these elements play a major role in understanding and interpreting past settlements, cemeteries and areas of cultivation. It is probably not coincidence that most Roman settlements concentrated in the areas that are inhabited even today.

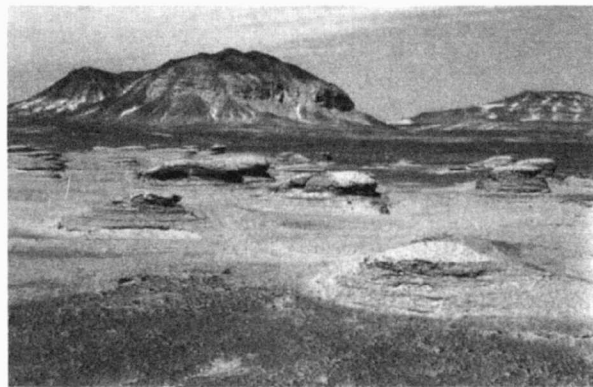


Fig. 1.-2. Landscapes of the southern Bahariya Oasis.
Above: Gebel-el-Showish. Below: Umm el-Okhbain playa.
Krajina v jižní části oázy Baharíja. Nahoře: Gebel-el-Showish, dole: playa Umm el-Okhbain.

As far as the archaeological objects are concerned, settlements, cemeteries, significant tombs and surrounding irrigation networks were mapped (in our case mainly old fields, gardens and watering systems – so-called manawars).

The tracing of monuments visible on the surface was carried out during the walking surveys. All discernible monuments were located with help of GPS GeoExplorer 3 Trimble receiver (1-The data have not yet been differentially corrected for the area of Egypt). The databases established in this way were processed by GPS Pathfinder Office 2.7 software. In the next step, the data were imported into GIS software bundle ArcGis 8.2. This software enabled the combination of the graphic, attributes and photographic databases and the production of the topographic layout.

3. Recorded archaeological history of the area of El-Hayez: An overview

3.1 Prehistory

As a result of the sedimentary conditions, the geomorphology of the Bahariya landscape is structured into the levels of the escarpments and table mountains, slopes and pediments, terraces, and the basal plain. All types of landscape were test-surveyed and the following types of sites and artifact distribution were recorded:

1. isolated artifacts,
2. random artifact accumulations,
3. settlements,
4. workshops.

Location of workshops is always related to the rich lithic outcrops of the area, whether it is the cherts weathered from the Cretaceous limestone coverage of the escarpment or the quartzite outcrops forming the caps of certain table mountains (more than 200 m a.s.l.). The settlements, on the other hand, are concentrated around the playa deposits on the basal plain (120-140 m a.s.l.). Occupation of the terraces and pediments is generally scarce, but some isolated artifacts and random accumulations are dispersed in all types of landscape.

Based on preliminary evaluation of the collected material, and on comparison with the results from the previously surveyed oases (Kharga, Dakhla), the following chronological and cultural framework may be suggested:

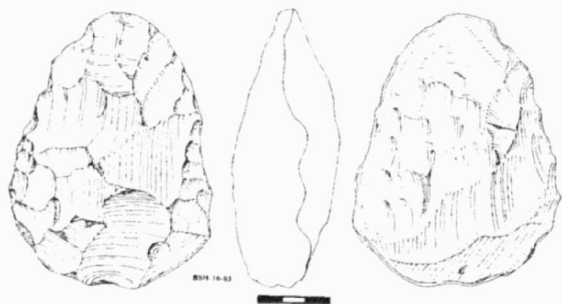


Fig. 3. Bir-el-Showish, example of an eolised Acheulian biface.
Bir-el-Showish, příklad eolizovaného acheulského pěstního klínu.

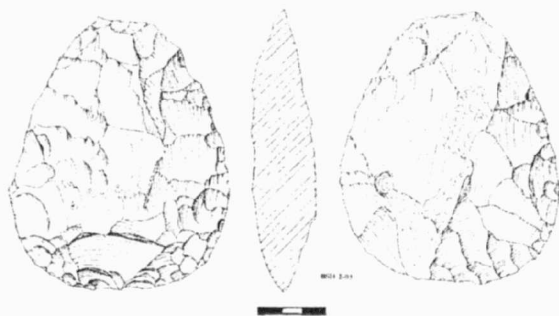


Fig. 4. Bir-el-Showish, evolved Acheulian biface.
Bir-el-Showish, pěstní klín vyvinutého acheuléenu.

The Acheulian

Four bifaces of the Acheulian type were collected in the area of Bir el-Showish and Gebel el-Showish. Two are „archaic” and more eolised (Fig. 3), whereas the other two, finer and more fresh, suggest a more evolved Acheulian stage (Fig. 4), thus possibly covering a longer time-span of occupation. Some of the associated debitage is probably related to this stage.

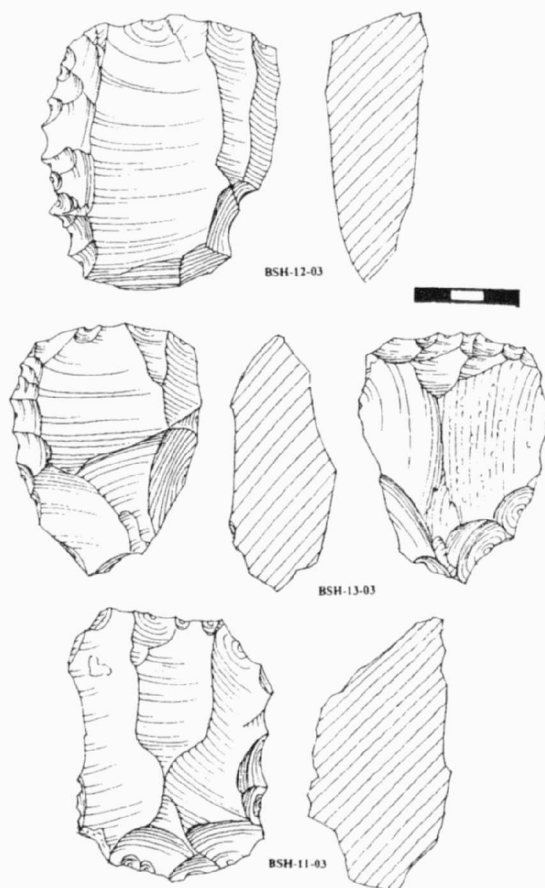


Fig. 5. Gebel-el-Showish, selected cores from the Middle Paleolithic workshops.
Gebel-el-Showish, výběr jader z ateliérů středního paleolitu.

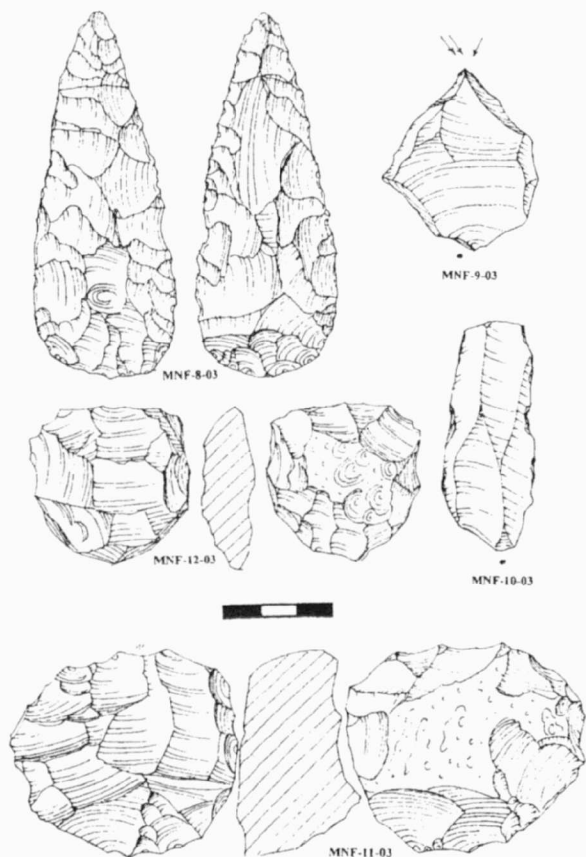


Fig. 6. Mannsaf playa, Terminal Middle Paleolithic industries.
Playa Mannsaf, industrie terminálního středního paleolitu.

Undifferentiated Middle Paleolithic

This stage is most widely dispersed across the surveyed landscape. Several specialised lithic workshops, with a high density of Levallois flakes and cores, were recorded at the quartzite outcrops on top of Gebel el Showish (Fig. 5). Isolated artifacts and random accumulations were encountered in almost all surveyed areas, starting at the chert outcrops on Gebel Gharbi in the south, over Bir el-Showish to the Pyramids area and the Gebel Mitteli Radwan ridge in the north. Besides the typically Levallois nature of cores and flakes and the associated bifacial technique, however, the laterally retouched artifacts are almost absent and, as a result, it is difficult to classify this horizon more precisely in terms of typology.

Terminal Middle Paleolithic

At some of the basal plain sites, especially around the playas, we encountered rather small-dimensional Levallois and blade industries. Given the fact that some of these sites are of settlement character, as at Ayin Umm el-Okhbain, Mannsaf (Fig. 6), and Ayin Khabata, we also recorded more retouched tools such as bifacial leafpoints, burins, sidescrapers, and borers. This typological structure, together with the smaller size of cores and flakes and an increased amount of blades, would place this horizon somewhere around the Middle-to-Upper Paleolithic transition, on the level of the „Khar-gan” or Aterian technocomplexes.

The Epipaleolithic/Neolithic

As opposed to the widely dispersed earlier industries, the sites of this horizon are smaller, more concentrated, and spatially restricted. A specialised workshop for blade and microblade production was recorded at the Cretaceous chert outcrops on top of the Gebel Gharbi, whereas settlement sites were found at Ayin Umm el-Okhbain (Figs. 7-8), Mannsaf, Bir Ayin

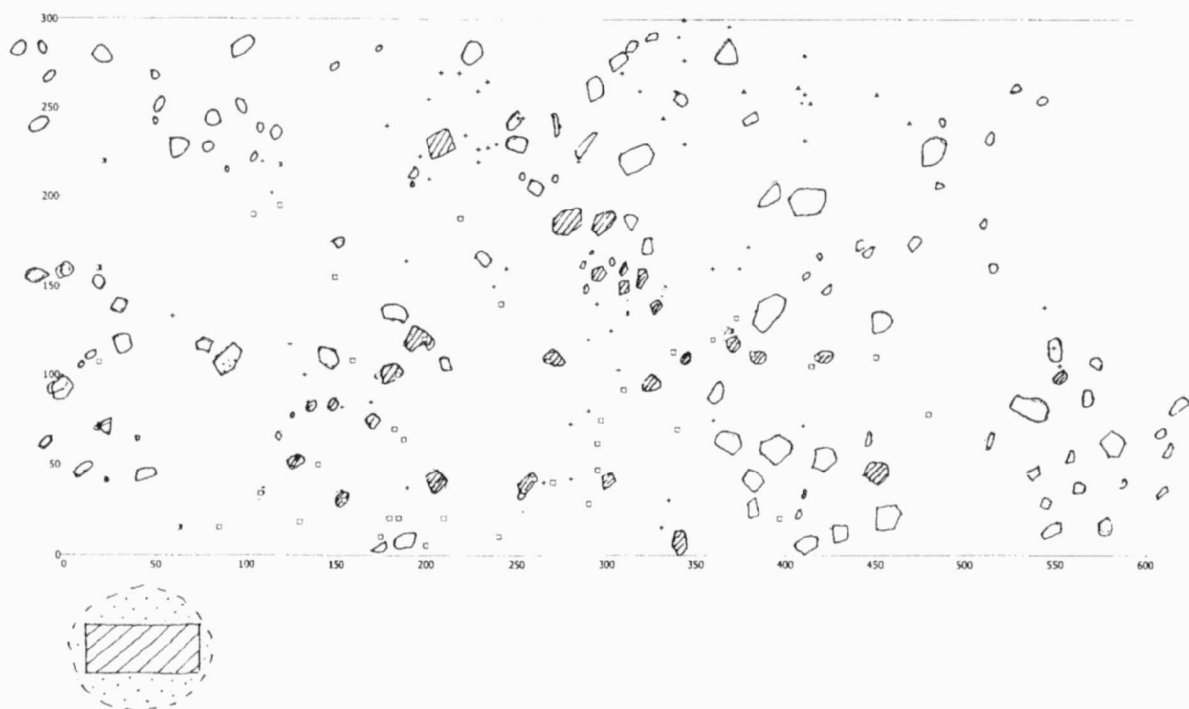


Fig. 7. Umm el-Okhbain playa, plan of the Epipaleolithic settlement and artifacts distribution (crosses, squares).
Playa Umm el-Okhbain, plán epipaleolitického osídlení a distribuce artefaktů (křížky, čtverečky).

	<i>Umm Ayin Okhbain</i>	<i>Bir Ayin Naga</i>
analysed area	3 x 6 m	3 x 3 m
elongated triangles	2	-
backed points	2	1
backed microblades	2	-
tanged point	-	1
burin	-	1
laterally ret.blades	5	1
ret. fragments	-	3
blades, microblades	29	13
flakes, fragments	30	131
cores	-	2
quartzite artifacts	40	9
colised artifacts	6	-
Total	116	162

Table 1. Typology if the Epipaleolithic industries.
Typologie epipaleolitických industrií.

Naga and the Pyramid playa. Typologically, the Umm el-Okhbain site provided two elongated microlithic triangles, backed blades and bilaterally retouched blades, whereas the Bir Ayin Naga assemblage included a tanged point, a backed point, and a bilaterally retouched blade (Table 1). At the both sites, we also recorded the planigraphy and spatial distribution of the artifacts.

Lithic production during the historic times

As the last stage in the lithic production, we have also documented an intensive production of heavy picks of quartzite and chert (Fig. 9), associated with historic occupation and manawar constructions at Bir el-Showish and Ayin el-Khabata.

3.2 Historic period

Larger settlement and what appears to be estates were identified in Bir el-Showish, Ayin el-Khabata and Qasr Mas'ouda. They probably date mainly to the Roman period when the occupation of the oasis perhaps reached its demographic peak. This conclusion is substantiated not only by the individual areas of settlement but also by the size of the underground irrigation systems and adjacent fields.

Bir el-Showish

This site is situated near the contemporaneous village of Gharbia. The largely deserted area consists of three core settlements. These settlements are indicated only by scattered posherds and inconspicuous house walls remains on the surface. In some cases pottery kilns could also be traced. The settlement is surrounded on the east by a complicated network of manawars, a system of regularly spaced wells connected by underground tunnels designed to collect water from large areas of the slightly sloping plain. Fields lay close to the terminals of the irrigation systems. In the case of Bir el-Showish also some parts of the original field extensions could be located. The examined area shows that the settlements covered an area of at least 8 ha and the manawars network was some 15 kms long and collected water from an area of about 700 ha.

The eastern plain with several hillocks was used as a cemetery. It seems that the hillocks were reserved for rock-cut tombs of the elite of the settlement whereas simple pit graves were sit-

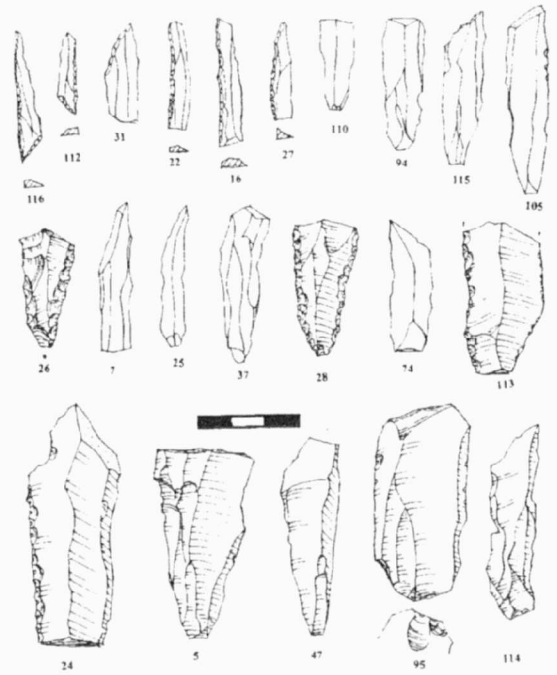


Fig. 8. Umm el-Okhbain playa, the Epipaleolithic industry.
Umm el-Okhbain, epipaleolitická industrie.

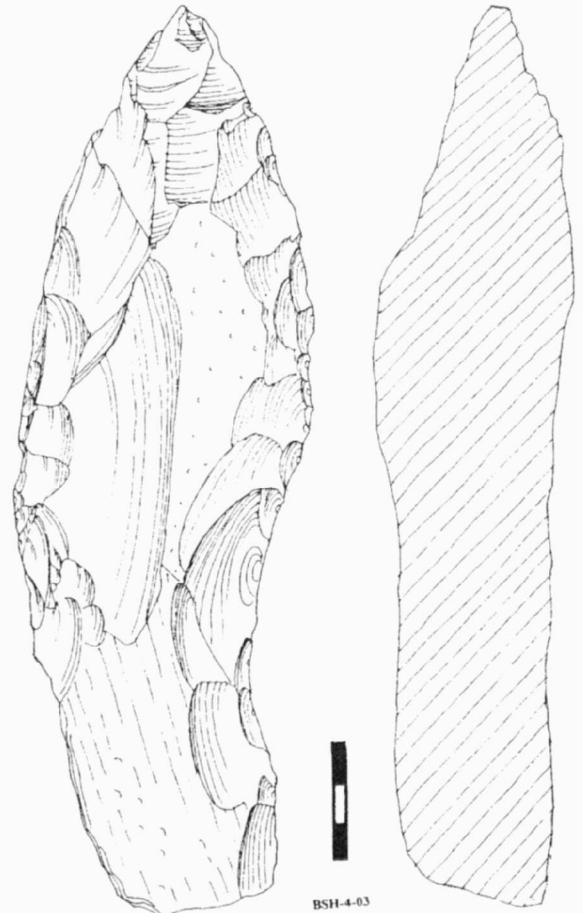


Fig. 9. Bir-el-Showish, historic digging tool (pick).
Bir-el-Showish, kopáč z historického období.

uated in the lower plain. It may be estimated that there are no less than several hundreds of burials in the area, most of them robbed in the past.

Ayin Umm Khabata

This site is formed by one core settlement area with nearby hills used for rock-cut tombs. The settlement extended over 2 ha and the network of manawars covered an area of cca 5.5 kms (180 ha) to the west of the village. Within the settlement, one potter kiln, a wine cellar and a well were identified.

The site had recently (at the beginning of the 1990ies) been partly examined by the local Inspectorate of Antiquities at Bahariya.

Qasr Mas'ouda

This is a site dominated by the mudbrick fortress of about 18 x 18 m, built on and around a rocky knoll of the desert plateau. The fortress dominated a smaller settlement covering an area of about 0.80 ha. The mapping of manawars has not yet been finished this season. Already now, however, the manawars cover an area of 110 ha with a length of 6.4 kms.

Bir Ayin Naga

This place is dominated by a settlement extending in an area of approximately 3.5 ha. It lies already within the area that is traditionally considered to belong to the Qasr Mas'ouda district. In addition to this system of wells there are two more springs, Ayin el-Ghazal and Ayin el-Nakhl, in a close vicinity. These three sites formed major topographic elements in the given microregion.

Tahuna

Tahuna is represented by what appears today as two sites separated by a dune. The first site, much smaller in size than the second one, is most likely a place where olive presses once existed (judging by the three huge limestone wheels and dense layers of olive stones). The second site extends over a large area partly covered by the fore-field of the approaching sand dunes. Together, the two sites cover an area of 5.2 ha.

Tabla Amun

This is a bigger site with remarkably well preserved groundplans of some of the mudbrick housing structures. The area may be today only estimated as 2.3 ha. To the west and north of the site seem to extend large cemeteries.

Ayin Gomaa

Ayin Gomaa is a rather small-sized settlement to the north of the contemporary village of the same name. Part of this ancient site is covered by the gardens and orchards. The settled area was at least 2.2 ha large.

El Riz

This is by far the largest settlement in the El-Hayez oasis. It covers an area of cca. 10 ha, and once it had undoubtedly formed a real centre of the whole area. The site is dominated by a Roman fortress, once briefly explored by A. Fakhri. Not far from the fortress lies an early Christian church. Near the fortress can also be seen the remnants of orchards (two obviously very old nabq trees).

The site has recently (about 10 years ago) been partly excavated by the local Inspectorate of Antiquities at Bawiti. During these excavations were revealed the remnants of a palace (of the commander of the fortress?) and a wine cellar. In the surroundings of El-Riz extend large cemeteries which have also been partly excavated by the aforesaid Inspectorate from Bawiti.

Beside the principal sites mentioned above, lesser sites such as Umm el-Okhbayin (rock-cut tombs), Ayin el-Ezza (settlement) and Gard el-Sheikh (rock-cut tombs) were examined and mapped. All these sites date from the Roman period.

4. Conclusions

The most important results of the first stage of the archaeological survey of the El-Hayez oasis may be summarized as follows:

1. the prehistoric survey has clearly shown that there is an important palaeolithic history of the oasis beginning with the Acheulian (500-100 ky). Among the most significant results let us mention the Epipalaeolithic/Neolithic sites (11-7 ky) connected with the three playas examined so far:

2. so far there were noted no pharaonic monuments in the area even though some toponyms would indicate otherwise (Tabla Amun, Tahuna):

3. the peak of the popularity of the area was very likely attained during the Roman period when the data indicate that the occupation in this area was most dense: there was an elaborate system of settlements and irrigation network that required a systematic deployment of a large workforce:

4. the tabulation of the seven examined settlements size (Tab. 2, in ha) considered to be traditionally Roman indicates that the ancient area of El-Heyz was dominated by two principal sites situated on the extreme limits of the cultivated region: El-Riz on the east and Bir el-Showish on the west. Their size was close to 10 ha. Then followed three smaller sites ranging in size from 2.0-5.2 ha. Finally, the smallest size seems to be represented by a settlement adjacent to a fort in Qasr Mas'ouda (this may be only some kind of a supporting base for the fort garrison).

5. All the aforesaid sites had their own, local cemeteries. These were set up mostly on the slopes of the nearby hillocks. The two prevalent types of tombs in these cemeteries are:

a) undecorated rock-cut tombs with burial niches for the burials of the individual members of the family; these are in prominent locations,

b) simple pits occupying lower locations on the hill slopes.

<i>Site</i>	<i>Size (in ha)</i>
Bir el-Showish	8
Ayin Umm Khabata	2
Qasr Mas'ouda	0.80
Tahuna	5.2
Tabla Amun	2.3
Ayin Gomaa	2.2
El-Riz	10

Table 2. Tabulation of the seven examined settlements sizes.

Tabelace sedmi sídelních aglomerací podle velikosti (ha).

During the survey some of the Palaeolithic/Neolithic sites were sampled, and all the collected stone artifacts are deposited at the Inspectorate of Antiquities in Bawitti.

The primary goal for the 2004 season is to conclude the archaeological survey of the Qasr Mas'ouda and El-Riz areas. In the next season, the survey is intended to be combined with minor trial diggings in order to clarify the stratigraphy, dating, and character of some of the monuments (manawars, etc.).

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Resumé

Ve dnech 28.2.-25.3. 2003 proběhla první průzkumná sezona v prostoru el-Hayezu v jižní části oázy Baharija

v egyptské Západní poušti. Cílem bylo vytvořit sídelně-archeologickou mapu, včetně údajů o výpovědním potenciálu lokalit, stavu jejich zachování a struktury ve vztahu k minulé krajině.

Paleolitické osídlení, které zde dosud prakticky nebylo registrováno (cf. Hassan 1979), je nyní nejen doloženo, ale byla dokumentována i jeho chronologická a prostorová struktura. Počíná acheuléenem (izolované nálezy), pokračuje přes indifferntní střední paleolit (především rozsáhlé ateliéry u křemencových výchozů na vrcholech hor) a terminální střední paleolit (menší sídlení kumulace při úpatí hor) a uzavírá se epipaleolitem/neolitem (pravidelné sídelní aglomerace lemující předpokládaná fosilní jezera – "playas" a ateliéry na hraně escarpmentu). Dynastické období zatím doloženo nebylo (přestože by tak naznačovala některá toponyma). Osídlení vrcholů v římské době, kdy se formuje strukturovaná soustava sídlišť, pohřebišť a podzemních zavlažovacích systémů (manawary), jejichž budování evidentně vyžadovalo soustavné zapojení značné pracovní síly.

Průzkum a dokumentace bude pokračovat v roce 2004.