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Preliminary Report on the Study
Season 2004 of the ACACIA
Project in the Western Desert

Report on the study season 2004 of the ACACIA Project

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The 2004 season of the ACACIA project focussed on the study of material from Prehistoric, Protohistoric and Pharaonic sites excavated or surveyed during the last three years in the Western Desert north and southwest of Dakhla Oasis. Despite the material from the Prehistoric and Protohistoric sites of the Egyptian Limestone Plateau, the Pharaonic material is related to the Abu Ballas Trail that were the object of the 2002 and 2003 ACACIA reports for ASAE. The new evidence from different sites of the Trail adds a number of details, however, it does not change the general scenario that was drawn in the former reports as well as in other preliminary publications (KUPER, R. 2001; KUPER 2003; FÖRSTER / KUPER 2003). For that reason, the following paper will concentrate on the new evidence derived from the study of the Prehistoric and Protohistoric material of the Egyptian Limestone Plateau. There a huge number of archaeological sites can be dated to the Holocene wet phase, c. 9500-5000 BC (calibrated). These sites were surveyed and excavated between 1998 and 2002, and the 2004 study campaign is hoped to be the last session on material before the final publication forthcoming. Only very little material can be dated to the period between 5000 BC and the beginning of the Egyptian occupation in the oases in the 4th Dynasty, because the desert then was dried up and the people concentrated in the oases and the Nile Valley. However, a valuable assemblage of pottery, stone artefacts and other archaeological remains was collected from the El Karafish desert area north of Dakhla Oasis. It might represent a desert outpost of the Sheikh Muftah cultural unit that is dated to the period from the Late Predynastic to the end of the Old Kingdom.

The last objective to which this paper should point, is the great role that remote sensing cartography and digital elevation models of satellite data can play for survey and reconnaissance programmes in field archaeology. Moreover, it helped to classify the physiographic landscape units and topographic features of the remote desert territories for which useful maps do not yet exist. These is a fundament for archaeological survey interpretation that has to include the relations and adaptational patterns of human settlement activities as a response to past environment.

1. The Prehistory of Djara and Abu Gerara

Excavations and surveys on the Prehistoric occupation of Djara and Abu Garara situated in the desert on the Egyptian Limestone Plateau between the Nile Valley and the oases were conducted between 1998 and 2002. During that work more than 70 sites were discovered, surveyed or excavated in Djara and its surroundings (KINDERMANN 2003a; 2003b), and about 100 sites on the southern Egyptian Limestone Plateau including the areas of Abu Gerara, El Karafish and the Farafra Sand Sea (RIEMER 2003). The bulk of sites were dated to the Mid-Holocene period of the Holocene wet phase, approximately 6400-5300 BC (calibrated). This period is subdivided into two major cultural units, Djara A (c. 6400-6100 BC) and Djara B (c. 5800-5300). At 5300 BC the begin of the rapid deterioration led to the depopulation of the desert after 5000 BC. The dwellers turned to the oases and the Nile Valley where permanent water was available.

The 2004 season was the last of the several study campaigns on the artefacts gathered and excavated in the former years. The study of the material was concentrated on the lithic assemblages of sites discovered and surveyed during the 2002 campaign. The spectrum of artefacts during the Djara A and B phases contains stone tools with facial or bifacial retouchment, as leave shaped and stemmed arrow heads, side-scrapers and knives. In Djara B this technique became the most important modification of stone tools, and the standard of retouchment was refined to a very regular surface retouch (pressure flaking). However, it was never observed that the bifacial tools were ground before the final

surface treatment, such as known from many Naqada knives, axes and planes. Now for the first time traces of a grinding process before the final pressure retouchment were observed on a knife and a plane from two different sites of the Djara area. The knife that is an isolated find, and the plane that came from a Djara B assemblage in connection with side blow flakes, knives, arrow heads, side-scrapers among others were made on tabular flint or naturally weathered flint sherds. As a first step, they were roughly thinned by bifacial retouch. After both surfaces were ground (second step), they were modified with fine regular (pressure) scars on both surfaces (third step) (fig. 1).

2. The Sheikh Muftah and Old Kingdom evidence of El Kharafish

In 2002 the survey campaign through the Farafra Sand Sea led to the discovery of a site that can be dated to the Sheikh Muftah phase in Dakhla (Late Predynastic or Old Kingdom). A brief survey and two test excavations produced a surprising high number of potsherds, stone artefacts and botanical remains. The material is now being under study, and some preliminary results can be presented.

The pottery contains large roughly made bowls of the Sheikh Muftah unit (fig. 2,1) (HOPE 2002) as well as Clayton rings and disks (fig. 2,2) (RIEMER / KUPER 2000; RIEMER 2002). A small number of sherds show red-slipped and polished surfaces, indicating a dating into the Old Kingdom. Rim fragments of a broad convex cup can be dated to the final Old Kingdom or rather to the First Intermediate Period (fig. 2,3) (SOUKIASSIAN et al. 1990: 144). A sample of wood charcoal of *Acacia* sp. was extracted from the interior of a rounded bottom of a Sheikh Muftah bowl. It produced a calibrated age about 3000 BC which might show that the site was used over several hundred years.

The lithic material gathered and excavated on site was numerous. Flint nodules and weathered sherds could be gathered all around the site from the surface of the plain hamada landscape. Tested nodules and all stages of the primary working are present on site. The blank production is characterized by less-standardized flakes and the absence of preparation scars. The spectrum of retouched tools is rather small, including a high percentage of borers, denticulates, side- and end-scrapers. Arrow heads only make about 1% of the tools. Only one fragment of a bifacial flint knife was found.

3. Remote sensing cartography and satellite data as base for digital elevation models

Since 1999 new satellite data from different sources are available. For the Western Desert of Egypt we use data from the TERRA-Satellite (ASTER-sensor, e.g. ABRAMS 2000, HIRANO et al. 2003) as well as from the Quickbird Satellite (TOUTIN / CHENG 2002). The ASTER-Data have a resolution of 15 m (pixel) and are stereoscopic and multispectral. Therefore it is possible to calculate satellite images and digital elevation models with remote sensing software. The multispectral Quickbird-Data have a resolution of 0,61 m (!). This very high resolution is comparable with that of high quality air photos and allow an identification and a rectification of even small objects like excavation areas, car tracks or single camel tracks as part of a camel route (fig. 3,1). With the use of the elevation models and the satellite images it is possible

- to plan detailed survey routes,
- to locate small vegetation areas and
- to classify the landscape according to topographic and structural features.

All archaeological and geo-scientific data were compiled analysed within a geographical information system (ArcGIS). It can be deduce that during the Holocene wet phase different favourable relief positions with a surplus of water (e.g. escarpment forelands, megadune corridors, depressions and palaeochannels) existed for man (BUBENZER / BOLTEN 2003, BOLTEN et al. in review).

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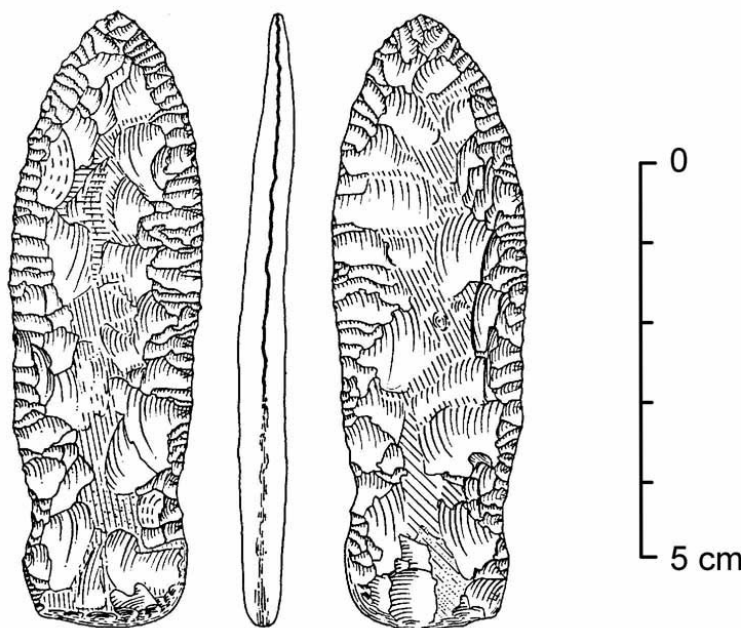


Fig. 1 Flint knife of Djara 02/1 showing traces of primary bifacial retouch, grinding of the surfaces, and a final regular retouch (pressure flaking).

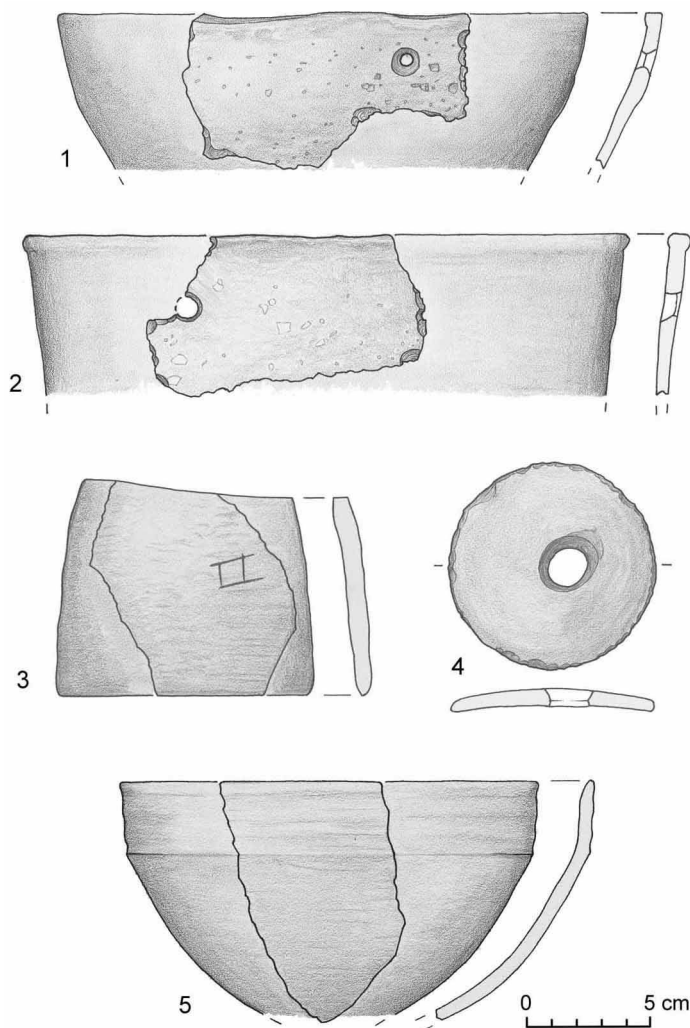


Fig. 2 Pottery of El Karafish 02/5: 1 Sheikh Muf-tah bowl, 2 Clayton ring and disk, 3 red-slipped cup.

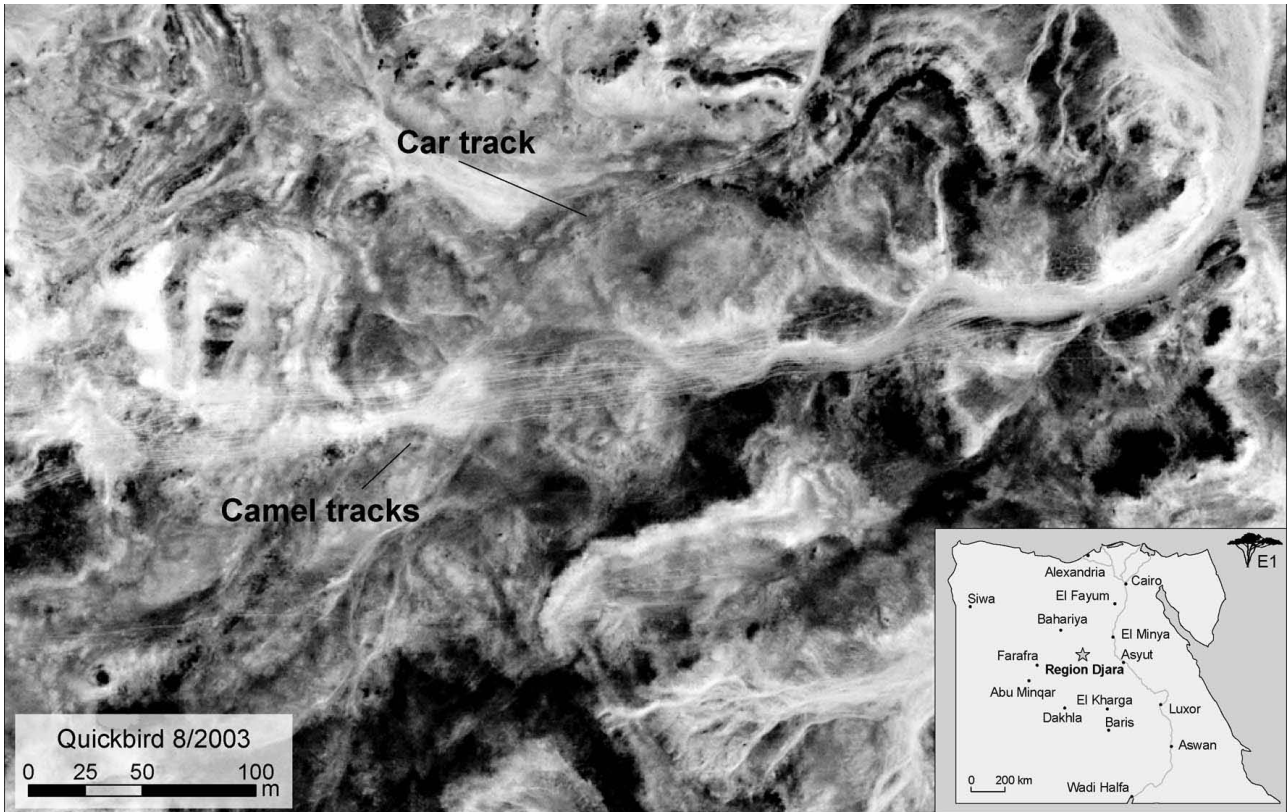


Fig. 3 Quickbird-Satellite image of the Djara region as part of the Egyptian Limestone Plateau. Note that even small objects as single rocks, camel and car tracks are visible.



Fig. 4 Traces of the camel road connecting Farafra and the Nile such as visible on the satellite image in fig. 3