

SCHEDIA, ALEXANDRIA'S HARBOUR ON THE CANOPIC NILE (KOM EL GIZA / DEPARTMENT OF BEHEIRA). PRELIMINARY REPORT ON THE SECOND SEASON 2004

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With contributions by Kris Strutt and Ralph Rosenbauer

General information

Thanks to the friendly approbation of the Egyptian Antiquities Services, a second season of research at Schedia, the Ptolemaic-Roman harbour city at the Canopic Nile, was carried out in the autumn of 2004.¹ Schedia was located about 28 km southeast of Alexandria at the starting point of the canal connecting the Canopic Nile to the capital city. As the pivotal reloading point for goods destined to and coming from Alexandria the ancient settlement was of great strategic and economic importance and spread itself over a large area. Several isolated settlement hills of up to ten meters height (Kom el Giza, Kom el Hamam, Kom el Sherif, Kom el Nashwa) attest to this fact. However, the greater part of the former city area is covered by the small fields typical for the Nile delta region and can therefore not be recognized visually today. The river channel and the former canal linking the Nile to Alexandria, also, have altogether disappeared from the landscape.

Between 1981 and 1992 the Egyptian Antiquities Service conducted emergency excavations at different sites in the area of Kom el Giza and Kom el Hamam. The first season of the current project (spring 2003) concentrated on the documentation of the older excavations. Moreover, a stratigraphical examination of a large brick pillar building at Kom el Hamam was

¹ For the localisation and identification of ancient Schedia, see the preliminary report on the first campaign 2003 (ASAE 2003, in print).

This project is carried through by the Institute for Classical Archaeology of the University Goettingen in cooperation with the German Archaeological Institute and the Archaeological Prospection Service of the University of Southampton. Further support came from the American Academy in Rome which provided one magnetometer for the geophysical survey and the Centre d'Études Alexandrines under its director Jean-Yves Empereur, whom we thank gratefully. The German Research Foundation provided the funding. The directors of the season were Marianne Bergmann and Michael Heinzelmann. Further participants were: Ralph Rosenbauer (organization and surveying), Gerd Herbst, Anton Herbst and Mildred Knebel (surveying), Benjamin Ducke and Krist Strutt (geophysical prospections), Archer Martin (ceramics), Hans Christoph Noeske (numismatics), Burckhardt Emme and Albrecht Matthaei (sondage supervisor), Dorothee Heinzelmann (graphic documentation), Ashraf Abd el Menem (conservation).

We would like to thank the Director General of the Egyptian Antiquities Service, Dr. Zahi Hawass, as well as the director of the Antiquities Service in the Delta, Dr. Mohamed Abd el-Maqsoud, for the permission to work at Schedia. For help and support we thank the head of the Antiquities Service for the Department of Beheira, Fawzi el Choulani. We also thank the two inspectors Fawzeya Rabbi and Fehmi Fehmi for their competent support.

The season began on September 15th, 2004. The material discovered was taken to the store of the Egyptian Antiquities Service at Kom el Firin on October. The season ended on October 28th, 2004, when all sondages were covered with sand and earth for better conservation.

Translated by Tobias Fabricius, MA (Fellow of University College, University of Durham, England).

performed. The second campaign, carried into execution in 2004, set itself several targets: first, the cartographic documentation of the original area of settlement; second, the establishment of a net of benchmarks necessary for future research campaigns; third, an initial broad-scale geophysical exploration which aims to establish the extension of the settlement and to determine the topography of the river and of the canal; fourth, further documentation work and stratigraphical sondages at the older excavation sites of Kom el Giza; and finally, the completion of the research at the brick pillar building of Kom el Hamam.

Topographical survey (Ralph Rosenbauer)

The field work done at Schedia in 2004 not only consisted of excavation work and geomagnetic prospection, but also concentrated on geodetic measurements.²

In order to integrate the results of the excavations, the results of the geomagnetic investigations, and the outcomes of future archaeological prospections (by means of aerial photographs and drilling) into a unified CAD- or GIS system, it was necessary to establish a raster of fixed points for the whole site of investigation. To this end, in addition to the 10 fixed points already identified in 2003, 75 fixed points were permanently marked and tacheometrically determined (Fig. 1). On the basis of the data a network adjustment was carried out. Furthermore, the positions of buildings suitable as remote targets were established tacheometrically. To achieve an exact integration into the Egypt altitude system, water level marks in the surroundings of the ancient settlement were measured and transferred into the net of benchmarks via geometrical levelling. After the introduction of the net, relevant points of the newly established fixed point system and of the points already marked in 2003 were measured using a real time GPS (Leica GPS 530; Fig. 2) to determine the parameters of transformation for the implementation into the Egypt Blue-Belt-1907 system.



Fig. 1: Total station



Fig. 2: Working with a real time GPS

² The topographical survey was carried through by Gerd Herbst, Anton Herbst, Mildred Knebel and Ralph Rosenbauer.

As a result, subsequent cadastral survey measurements could be executed by real time GPS, which resulted in a substantial saving of time in comparison to the tacheometric recording conducted in 2003. The cadastral survey of the modern surroundings of ancient Schedia was for several reasons indispensable. With regard to the planning of the geomagnetic prospection and the stratigraphic sondages a detailed knowledge of the modern topography (especially of the canals, streets and field borders) is of great importance. Furthermore it is possible to draw conclusions about the ancient landscape from its current shape. This holds good for the relief of the terrain, which reveals areas of settlement as well as the course of the Canopic Nile in ancient times. To a certain degree also the course of today's streets and field boundaries can disclose characteristics of the ancient topography.

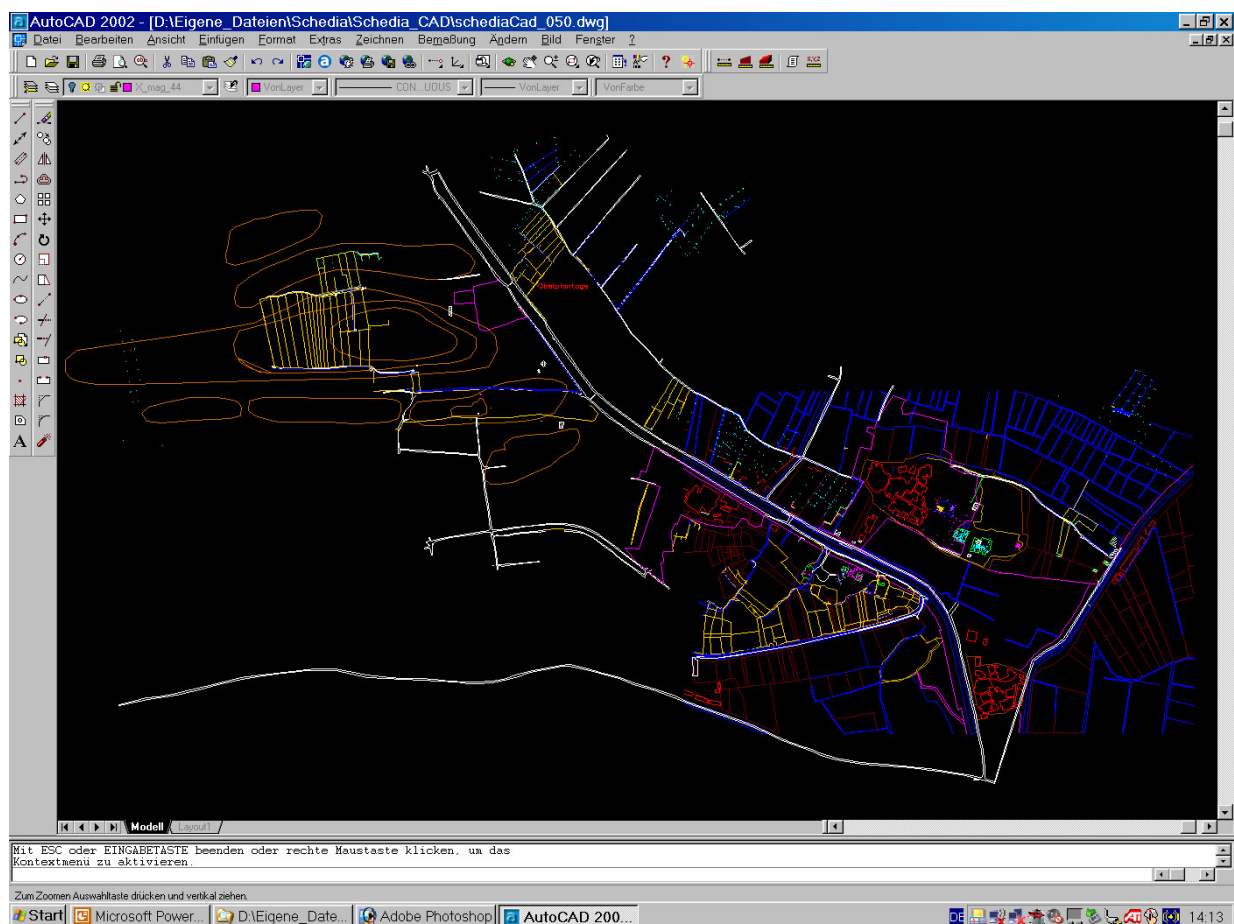


Fig. 3: CAD system with results of the topographical survey 2004

The landscape in the area of the ancient settlement Schedia has undergone severe changes caused by an extensive removal of soil over the last decades.³ Therefore all maps and

³ For example a whole south of Kom el Nashwa of 500 m length and 80 m width has been removed almost completely to supply material for the production of bricks in a factory nearby.

cadastral maps available were included into the CAD system.⁴ The geodetic work will be continued in the following campaign of 2005. The emphasis will be on the expansion of the fixed point system to the peripheral areas of the ancient settlement a completion of the cadastral mapping, and on the revision and densification of the digital terrain model.

Geophysical Survey (Kris Strutt)

A geophysical survey was conducted at the site in October of 2004 by the University of Southampton, to assess the archaeological remains of the area surrounding the Schedia excavations. The survey was carried out using magnetometry. Prior knowledge of the sediment and archaeological deposits at the site suggested that use of a magnetometer would be most successful in recording the remains of sub-surface archaeological structures. Archaeological features such as brick walls, hearths, kilns and disturbed building material are clearly represented in the results of magnetometry,⁵ together with more ephemeral changes in soil.⁶



For the geophysical survey, grids of 30m by 30m were set out using a total station. Magnetometer survey was undertaken using a Geoscan Research FM36 Fluxgate Gradiometer. In most cases readings were taken on 1m traverses, every 0.5 m in every 30 m by 30 m grid, although for the main kom site at Kom el Giza readings were taken on 0.5 m traverses at 0.25 m intervals. The decision was made to use an automatic encoder trigger, allowing relatively rapid and efficient survey over the large open areas around the excavations. Survey data were processed using Geoplot 3.0 software. The post-survey processing of data was necessary to remove any effects produced by changes in the earth's magnetic field during the course of the survey, and to minimise any interference in the data from surface scatters of modern ferrous material and ceramics. The data were despiked to remove any large peaks or 'spikes' from the data produced by material on the surface of the field. A mean traverse function was then applied to average out any changes in the data produced by the drift in the earth's magnetic field. Filters

⁴ All in all six cadastral maps on a scale of 1:2500 (dating from different years), a map on a scale of 1:25000, and a map on a scale of 1:25000 were implemented in the form of raster images. In addition, a map from 1866 was added to the background, which provided interesting evidence about the course of the Canopic Nile and the ancient canal.

⁵ Scollar, I., Tabbagh, A., Hesse, A. and Herzog, I. 1990, *Archaeological Prospecting and Remote Sensing*. Cambridge University Press.

⁶ Clark, A 1996, *Seeing Beneath the Soil: Prospecting Methods in Archaeology* (2nd Edition). London; Batsford; Gaffney, C., Gater, J. and Ovendon, S 2002, *The Use of Geophysical Survey Techniques in Archaeological Evaluations*. Institute of Field Archaeologists Paper 6.

were subsequently applied to smooth out any high frequency, small disturbances in the data. Finally 0.5m values were interpolated from the existing readings to improve the spatial resolution of the results across the traverse lines, mainly for aesthetic reasons. The final images of the geophysics results were derived from Geoplot 3 as bitmaps. These were then geo-referenced back into an Autocad map of the modern topography.

The preliminary results of the survey (Fig. 5. 6) indicate a good rate of preservation for the archaeological remains to the west of Kom el Giza, but with less satisfying results from the badly disturbed and denuded kom sites to the south west of the village and canal. In the fields to the west of the village, a large difference was noted in results from the fields to the south west of the farm track, and the fields to the north east. Results to the south west show the existence of buried structures, predominantly extensive buildings including possible storage houses and larger rectilinear structures, even a possible temple platform. These buildings stretch alongside a linear feature that marks the possible edge of the Canopic Nile, and are bounded to the south west by a quieter zone, possibly demarcating a broad road-way or open area beyond the main settlement. The zone to the north east comprises alluvial sediment, cut occasionally by evidence of drainage channels.

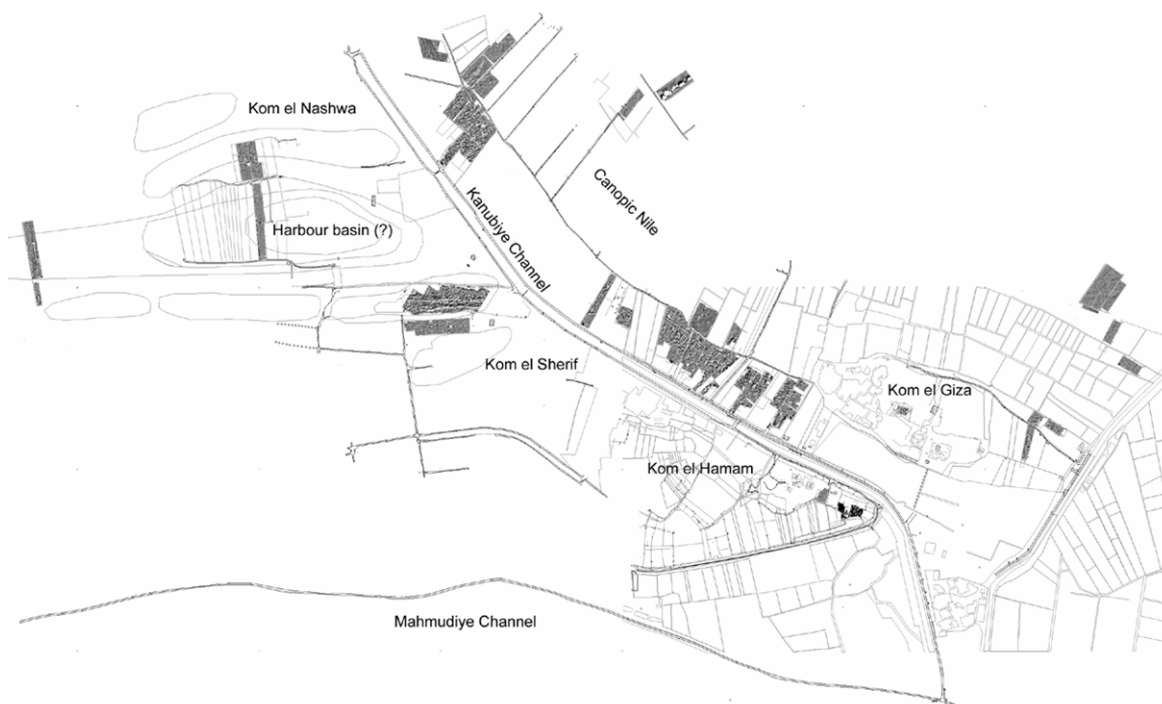


Fig. 5: Geophysical survey 2004, overview

Two kiman around Kom el Giza were also surveyed as part of the 2004 season. The first of these, situated across the canal from the village, located a number of large structures aligned with the course of the modern canal, including large wall footings and a potential large building measuring 80m across. The second kom, situated 0.5 km to the north-west, elicited a poorer response to the magnetometry, with only one or two badly truncated structures and a possible canal edge showing clearly. It was evident from the surface that this zone had been

completed erased, in some areas down to the level of the water table. A number of transects were also surveyed further to the west and north, in an effort to locate the line of a canal that supposedly ran from the west to the Canopic Nile. Although some smaller anomalies were located in the results, including some linear features alongside a broad hollow in the modern topography, no definite canal edge was found in the results.

To conclude, the results of the first geophysical survey season at Schedia were successful in locating and mapping a number of structures associated with the ancient settlement. These results are however preliminary, and as more work is carried out in future seasons, the gaps in the survey will be filled, and the end result will provide a clearer picture as to the layout of the ancient site. Although the magnetometer results in themselves are clear, it would be beneficial to augment this method with other techniques of prospecting or analysis. In particular it would be useful to use some limited augur surveying in conjunction with the geophysics to provide comparative data for the magnetometer survey results.

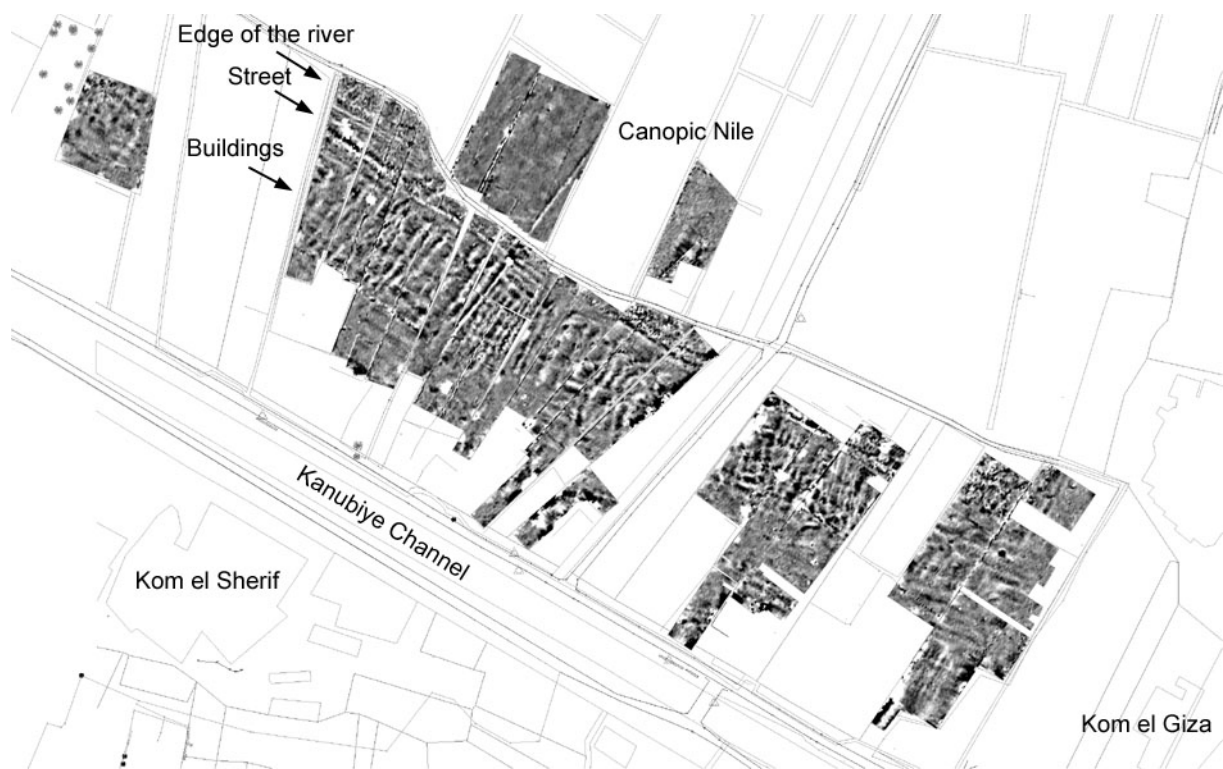


Fig. 6: Geophysical survey 2004, detail

Documentation and supplementary examinations of the old excavations

To complete the documentation of the rescue excavations done by the Egyptian Antiquities Authorities between 1981 and 1992, several areas were cleaned. Architectural drawings and sections in a scale of 1:50 were executed of the Hellenistic round baths in area 3, of the wine press in area 7 and of the wine press and basins in area 8. In order to facilitate this work a special photogrammetrical documentation system was used for the first time.

In addition, a series of capitals, bases and other pieces of architecture have been drawn in the scale 1:10.

In order to get some new information about the dating of the buildings which were uncovered by older excavations, a series of small scale stratigraphical sondages were executed in area 7 (wine press), in area 1 (villa suburbana), and in sector 3 (round baths).

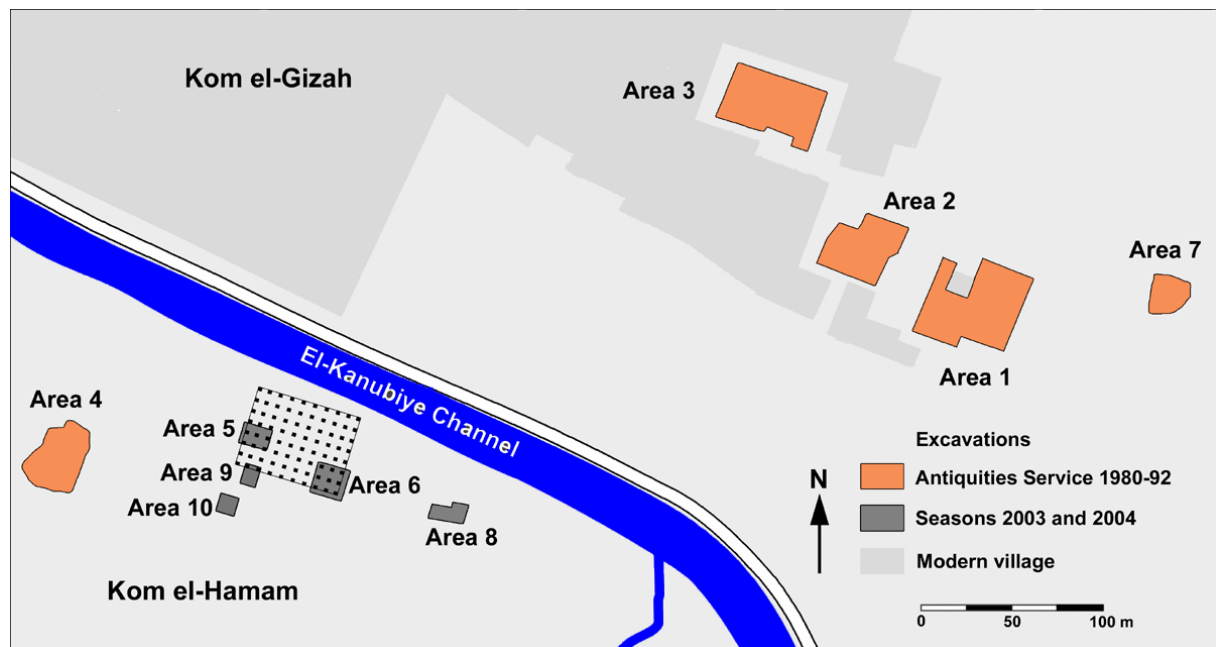


Fig. 7: Map with excavation areas

Furthermore, some of the small structures in area 1 and 2, which had been provisionally interpreted as tombs last year, were investigated again. Unfortunately most of them were already too damaged to offer a clear picture. Nevertheless, one structure in sector 1 seems to confirm this interpretation. It once consisted of a stepped pyramidal structure of ashlar blocks which have mostly been robbed in later phases. The core of the construction consisted of a cube of burnt bricks. Underneath these bricks several strata containing ashes, bones and ceramics have been found. Most of the bones are clearly coming from animals of different types. They do not show signs of burning. However a certain portion of bones concentrated in one area have been burnt and are in a very fragmentary status of conservation. It is possible

that they belong to a human cremation. According to a Hadrianic coin found within the ash layers this structure is probably to be dated to the 2nd century AD.

Investigation of the pillar building in Kom el Hamam

In order to investigate a huge pillar building of burnt bricks at Kom el Hamam during the season 2003 two trenches were begun (sectors 5 and 6). In both sectors work was continued in 2004 and a new trench on the south side of the building was opened (sector 9). It is now clear that the pillar building was constructed in the late 1st or 2nd century AD on top of the rests of earlier buildings. Its original purpose is still not clear. According to the results in sector 5 mud brick walls running in north-south direction were added in a second phase between the pillars, which means that the building was separated in a series of parallel naves. In a third phase, probably during the late 2nd or 3rd century AD, additional mud brick walls were added in order to create simple apartments. These habitations show two main phases of use. In sector 5 several rooms were found, some of them containing cooking installations. They revealed a huge amount of pottery, mainly amphorae as well as coarse and cooking wares (Fig. 9-13).



Fig. 8: Sector 5, detail

Probably in the 4th century AD these habitations were abandoned and levelled in order to install a granary. This grain storage was possibly in use until the 5th century AD, when it was destroyed by fire. On the ruins of the completely destructed pillar building a simple settlement of rural character was installed thereupon, with extensive reuse of old materials. Up to now the latest datable coin found in the building belongs to the middle of the 5th century AD, but the pottery indicates a later date for the life of the last settlement in the 6th or 7th century AD. Unfortunately the high water table did not allow to investigate the earlier occupational phases underneath the pillar building.

South of the pillar building a new trench (sector 10) was opened to investigate a possible street running from East to West. However, this trench reached only the latest phases of occupation and has to be completed in the next season.

Examination of the finds

The materials of the season 2004 could only in part be analysed on site. Part of the pottery was by Archer Martin (American Academy in Rome) classified, and for some stratigraphical units first statistical data were recorded. Preliminary results based on the examination of a few contexts indicate that Schedia presents pottery assemblages that are within the norm for Mediterranean coastal sites with good trade connections both in the mid imperial period and late antiquity: that is, with percentages of amphorae well over 50% of the number of sherds. However, these preliminary results show an interesting contrast between the two periods: the earlier contexts contain very little imported material but the later ones regularly have a considerable amount of imports, coming mainly from the Levante, Asia Minor and Northern Africa. If this contrast is confirmed by further investigation, it will be necessary to what change in Schedia's role it reflects. Furthermore nearly all of the 100 coins found in this season were cleaned and identified. Thanks to the excellent work of the conservator Ashraf Abd el Menem about 10 vessels were restored.

