

## GHAWR AŞ-SĀFĪ EXCAVATIONS 2011 - 2012

*Konstantinos D. Politis*

### **Introduction**

Archaeological work continued in Ghawr aṣ-Ṣāfī during 2011 and 2012 by the Hellenic Society for Near Eastern Studies (HSNES) in collaboration with the Department of Antiquities of Jordan (DoAJ). The project was funded by Aramex LLC with support of the above-mentioned institutions and directed by Dr Konstantinos D. Politis.

The Ghawr aṣ-Ṣāfī survey and excavation project has been conducted at various areas of the region since 2000. The overall objective has been to understand human settlement and land-use patterns in the region during the last 12,000 years. Particular emphasis has been devoted to agriculture, as the mouth of the Wadi al-Hasa - where Ghawr aṣ-Ṣāfī is located - is a soil-rich and relatively well-watered place.

### **Ṭawāḥīn as-Sukkar**

During 2012, work continued to focus on

understanding the development of the sugar industry, particularly at the factory complex of Ṭawāḥīn as-Sukkar (TeS). The western pressing room that was excavated in 2010 (by DoAJ) and re-exposed in 2011 (by HSNES) was fully excavated this season (by HSNES). This revealed a lower chamber with an arched entrance (similar to the eastern one) below the pressing room (**Fig. 1**) and several external stone-built walls, one of which led to the north-flowing underground water channel (**Fig. 2**). This clarified our understanding of the hydraulic system that powered the crushing stones and the irrigation of the agricultural fields in the immediate environs. A new composite plan of both the crushing chambers was made (**Fig. 3**). It is hoped that future excavations will reveal additional structures associated with the sugar refining process.

A multi-chambered building with evidence of intense burning, located at the north-west side of the sugar factory excavated in 2010 (by



1. Ṭawāḥīn as-Sukkar from the east (photo: K. D. Politis).



2. *Tawāḥīn as-Sukkar from the north (photo: K. D. Politis).*

DoAJ), was presumed to be the place where sugar-cane juice was refined through boiling. This structure was excavated in 2012 (by HSNES), revealing a floor with some broken sugar pots *in situ*. Its associated ash dump at the north-eastern end of the site was excavated in 2002 and 2004 (by HSNES), and was sampled for botanical and phytolythic remains in 2011 (by HSNES). This yielded evidence of actual sugar-canes for the first time.

Further study of other finds from TeS indicate a *ca* 15<sup>th</sup> - 16<sup>th</sup> century post-industrial occupation (mostly represented by burial graves) in the disused sugar factory (Fig. 4) and a final phase of occupation in the early 20<sup>th</sup> century when structures associated with the Ottoman Army were constructed, as evidenced by many cartridge shells / cases inscribed in Turkish Arabic and dating from 1915 - 1917 (Fig. 5). A few other British cartridge shells / cases probably came from fighters of the Great Arab Revolt who came into conflict with Ottoman forces.

### Khirbat ash-Shaykh ‘Īsa

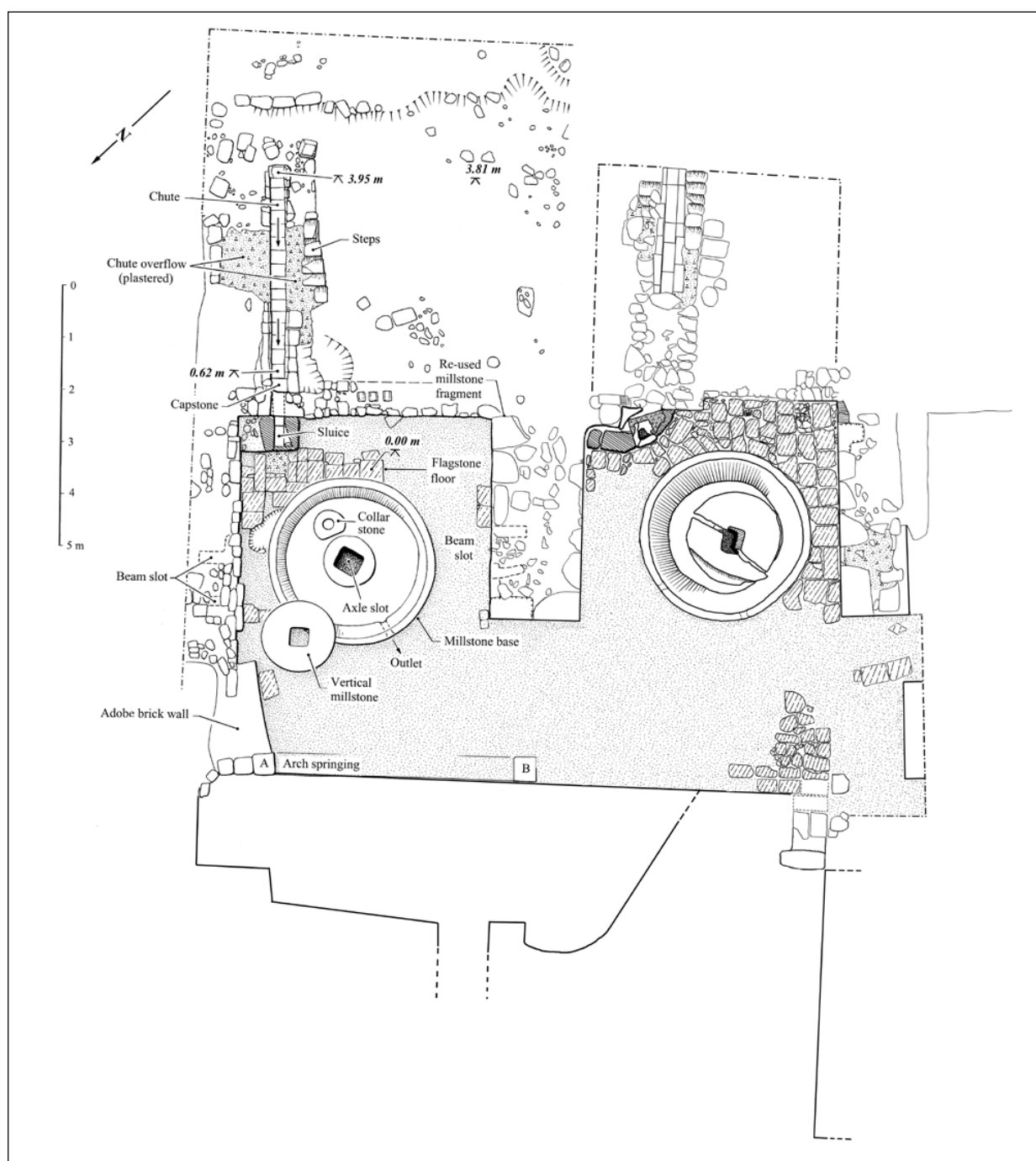
At Khirbat ash-Shaykh ‘Īsa (KSI), the walled city-centre of Roman - Byzantine Zoara and mediaeval Islamic Zughar, excavations resumed in Trenches II and VIII (worked on by HSNES in 2002, 2004, 2006-7 and 2008) in order to better understand the Ayyubid - Mamluk and Abbasid period occupations. Two sections of Trenches II and VIII were cut back by one metre and exca-

vated. Samples of the abundant charred remains were taken for an in-depth botanical study currently being conducted.

In Trench II excavations reached the level of the paving slabs, revealing a sedimentation tank and conduit below the road (Fig. 6). Several slabs were also lifted and a sondage was dug to a depth of about half a metre, yielding no pottery later than early Byzantine thereby giving us a *terminus post quem*.

A similar sondage was excavated at the level of the mosaic pavement in Trench VIII; this yielded similar results. Careful examination of the mosaic revealed its bedding technique and clearly showed it running underneath the fine ashlar block-built wall dating to the Abbasid period. Residual ecclesiastic evidence (altar table fragments, Prokonesian marble columns, architectural elements engraved with crosses and glass mosaic cubes) (Fig. 7) alludes to the presence of a reasonably-sized and well-adorned church (perhaps the seat of the bishopric) that was associated with the mosaic pavement. The mosaic was re-photographed at right angles, cleaned and reburied under a new 5 x 4 metre open-weaved polystyrene sheet (to enable water evaporation). It was also assessed by mosaic conservators who planned its future conservation.

Exposure of the upper levels of the city walls at KSI was extended further to the south, confirming the *misr*-type plan originally postulated during the 2002 excavations.



3. Composite plan of two crushing chambers at Ṭawāḥīn as-Sukkar (plan: A. Silkatcheva and J. M. Farrant).

### Conclusions

All the pottery and other finds (**Fig. 7**) were studied, photographed and drawn, and plans were made to continue and expand excavation trenches at TeS and KSI within the coming year.

Rescue collections were made at an Naq' and

Arḍ Ramlat Ghālib (on the north bank of Wādī al-Ḥasā), where a Roman - Byzantine cemetery lies unprotected on private property.

Konstantinos D. Politis,  
Hellenic Society for Near Eastern Studies,  
[kdpolit@hsnes.org](mailto:kdpolit@hsnes.org)



4. Six small (children's) coloured glass bracelets, 14<sup>th</sup> - 15<sup>th</sup> century AD (photo: A. Silkatcheva).



5. Ottoman and British cartridge shell / cases, early 20<sup>th</sup> century (photo: A. Silkatcheva).



6. Khirbat ash-Shaykh 'Isa Trench II from the east (photo: K. D. Politis).



7. Glass tessera with gold paint, ca 6<sup>th</sup> century AD (photo: A. Silkatcheva).



8. Carved bone pin, 8<sup>th</sup> - 9<sup>th</sup> century AD (photo: A. Silkatcheva).

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