



Fig. 66. Sampling sediment from a profile in the monastery garden of Jabal Haroun



Fig. 67. Dust accumulated in the remains of a trichinium on Jabal Farasha near Petra

A still unsolved question of soil development and landscape change in the Middle East is the question of loess deposition during the Holocene. While large sediment bodies were deposited in the Negev during the Pleistocene, they are missing from the Holocene and it is unclear whether this is related to erosion or reduced dust supply. A geoarchaeological approach was applied to sediments in the remains of ruins and ancient terraces in the vicinity of Petra, funded by the German Research Foundation (DFG), and building on earlier results of the Finnish Jabal Haroun Project (FJHP) as the Petra Region Geoarchaeological Survey (PRGAS).

Soils of the terrace remains around Petra are characterized by strongly varying types and amounts of pottery. Their geochemical properties, pollen, phytoliths, and biomarkers are studied which allows the investigation of these sediment bodies as environmental archives. In order to compare the evidence from Petra with the better-studied ancient runoff farming systems in the Negev, a comparative survey was conducted near the site of Horvath Haluqim (Sede Boker).

First results largely confirm the project's initial premises: while intensive (probably irrigated) gardening was carried out close to structures as the monastery of Jabal Haroun, other, more remote terraces may have served primarily for flood control. Sediments are largely of aeolian origin and could represent the so far missing Holocene loess. The systematic comparison of different ruin types (cisterns, ruins, terraces) as potential traps of aeolian dust suggests that contrary to initial expectations, cisterns are the most problematic archive as they have been cleaned repeatedly, in particular during their time of use—and later re-uses—lead to complex stratigraphic sequences. Ruins, in contrast, seem to represent excellent archives. This means that the debris which is usually removed as quickly as possible may represent an environmental archive worth studying.

## PETRA REGION GEO-ARCHAEOLOGICAL SURVEY

**Bernhard Lucke**

FAU Erlangen-Nürnberg

**Paula Kouki**

University of Helsinki

**Nizar Abu-Jaber**

German Jordanian University