CHAPTER THIRTEEN

INTRODUCTION TO “SOAP AT QUMRAN”

Jan GUNNEWEG
Archaeometry, Hebrew University of Jerusalem

Abstract. This is the Introduction to what triggered the soap manufacture possibility at Qumran, before the Honour Class of Leiden-Delft tried to execute the proposed recipe in reality.

Keywords. Soap production, Qumran, lye, Salsola Kali, date palm

In April 2007, a discussion took place for a collaboration project between Joris Dik of the Technical University of Delft and myself of the Hebrew University of Jerusalem whereby the Honours Class with a program entitled “The merging of science, arts and archaeology” 2007-2008 of Leiden-Delft Universities in Archaeometry would be involved.

The project we discussed focused on an aspect of Qumran in Israel. The research project had to be feasible with positive results to be shown during the combined Lorentz Center Physics and NIAS Workshop of April 2008 where some members of the Honours Class would present their first Archaeometry work as an oral presentation and as a paper in the subsequent Workshop Proceedings. I proposed a hypothetical topic that seemed feasible, also because I had done some homework in Israel in 2005. The questions were whether 1) the Qumranites could have made soap 2000 years ago in their settlement on the shores of the Dead Sea, whether 2) they had the ingredients to make soap and 3) what they would have done with it. 4) Last but not least, what would be the impact on the history of Qumran in the light of the fact that many see the site as a sectarian settlement with strict purity laws, where the use of soap would be logical item having.

The reason that we wanted to focus on the soap manufacture was foremost the extreme puritan character of the Essenes that was described by the ancient writer Flavius Josephus, a Jewish army com-
mander converted into a history writer for the Romans in the first century after Christ. He described a sect called the “Essenes”, a group of dissident Jews during 2nd century BC—1st century AD. If his account and that of the Dead Sea manuscripts apply to the same people that lived at Qumran 2000 years ago and by many thought as one of the Essene sectarian groups, the use of soap and the description of purity in the Dead Sea scrolls would indeed apply to the site of Qumran. If the Qumranites were that pure, we reckoned, they must have had access to a detergent in order to wash their linen cloths in which Flavius Josephus depicted them.

The second reason for the use of soap came from the excavator of Qumran in the 1950s, Roland de Vaux, who had found two low basins that he interpreted as a laundry facility in rooms 52-53 within the settlement that also had enough water nearby needed for doing laundry.

In order to make soft soap—the solid bar of soap is a recent French invention of two centuries ago—the Qumranites needed water, animal fat (goat tallow) or plant (olive oil) fatty substances, a fire and lye, also known as caustic soda. Without lye, one cannot make soap. What I intended to show is that the Qumranites could have had the knowledge how to produce the necessary lye and probably did based on material finds that will become clear in the next paragraphs.

Lye can be made from trees or plants that contain either sodium (Na) or potassium (K), both major elements because they occur in Nature in the percentage range. Especially plants that grow near the sea contain more sodium and potassium than more inland growing plants. At the Dead Sea we have two items of vegetation that grow all-year round near the Dead Sea: The Salsola Kali brush, better known by the name of Whortleweed and the date palm tree (*Phoenix dactylifera*).

How the process of making soap was invented is a mere speculation, but quite understandable if one considers that when the ancients grilled meat on a spit, fat would drip on the ashes of the bonfire and once water seeped through these ashes, one would obtain a soapy material. When this is mixed with sand and water by rubbing a cloth against itself or against another cloth, foam is produced that cleans a cloth from its greasy dirt. Dirt that does not contain fatty substances can usually also be cleaned by the use of salt water and rubbing. In both cases, the principle of washing is primarily a rubbing motion.