

# Silver found in 2,000-year-old Jerusalem pottery hints at city's wealth during late Second Temple period

• By JUDY SIEGEL

Unusually high concentrations of silver have been found during excavations in Jerusalem's Old City by Bar-Ilan University researchers in samples of different types of pottery from late Second Temple period some two millennia ago.

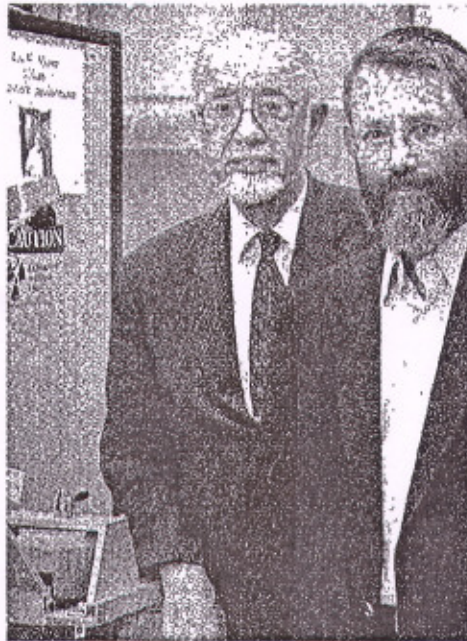
It was the first study ever conducted on the silver content of archeological ceramics, said the BIU team, which worked with the Lawrence Berkeley National Laboratory. They published their results in the latest issue of the University of Oxford journal *Archaeometry*.

The research team, consisting of Prof. David Adan-Bayewitz of the Martin (Szusz) Department of Land of Israel Studies and Archaeology at BIU in Ramat Gan and guest at the Berkeley lab, and Dr. Frank Asaro and Robert Giauque of the Environmental Energy Technologies Division at the California lab studied silver concentrations in 1,200 pottery vessels from 38 sites in Roman Judea, which is present-day Israel, dating from between the late first century BCE and 70 CE.

The major finding is that samples of pottery from late Second Temple period Jerusalem had anomalously higher concentrations of silver, as compared to samples from all other non-urban sites dated to the same period of time.

Many of the samples from Jerusalem and other rural and urban sites were otherwise indistinguishable in date, shape and chemical composition.

Anomalously high silver abundances were also detected in pottery found at other urban sites (Sepphoris, Dor and Beit



DR. FRANK ASARO (left) and Prof. David Adan-Bayewitz stand next to the Luis W. Alvarez Iridium Coincidence Spectrometer, which is used to make silver measurements. (Anthony Ma)

She'an). But many of the Jerusalem samples had higher silver values (above 5.5 parts per million) than any of the samples from the other cities.

The geographical distribution of the samples with high silver cannot be explained by natural causes, said the researchers, who deduced that the origin of the silver is related to human activity. The team also concluded that silver was washed into the pottery by the action of groundwater – but

it is possible that in some cases the high silver may have been related to the use of the pottery in antiquity.

The researchers suggest that the anomalously high silver concentrations they found in the Jerusalem pottery samples may be analytical evidence of the wealth of the city during the period. The findings from this study also suggest that the measurement of silver in pottery may be a useful tool for evaluating archaeological remains and patterns of urban contamination in antiquity.

The research team notes that Jerusalem and its Temple was the religious and national focus of Jews throughout the Roman Empire during the period, leading to substantial growth and accumulation of wealth by the city's inhabitants.

The Roman scholar Pliny the Elder, who lived during this time, called Jerusalem "by far the most famous city of the East." Jewish pilgrims to Jerusalem contributed to the city's wealth, and continual donations to the Temple made it a target for plunder. The archeological remains unearthed in the Upper City, today's Jewish Quarter, also attest to the wealth of the inhabitants in this period.

"Our findings," says Adan-Bayewitz, "showed that the silver concentrations in many of the late Second Temple-period Jerusalem samples are distinctly higher than those from all other sites, as well as Jerusalem samples of a later date."

The team developed a new analytical method for measuring silver concentrations in archeological pottery that they found is more reliable than available techniques.