

Cave of Letters-- Report on the 2000 Expedition

This archaeological survey and exploration of the Cave of Letters took place July 3-20, 2000. It was the second expedition carried out at the cave under the auspices of the Consortium for the Bethsaida Excavations Project headed by the University of Nebraska at Omaha and the University of Hartford. This year's project was funded by a generous grant given by John and Carol Merrill.

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The Exploration:

The 2000 expedition was devoted to several important tasks that were preliminarily begun during the 1999 survey of the cave. Because of the initial success of the GPR (ground-penetrating radar) work done in Chamber B in 1999, a complete mapping of the cave was scheduled. In addition, a tomographic survey line was measured so that results of these two technologies could be correlated to help uncover the underlying structure of the cave in a non-invasive manner. Also, because of the success of using an endoscope to investigate the layers beneath the roof fall debris, a much more extensive program of probes among the crevices of the large rocks was planned employing both the endoscope and an industrial fiberscope. The fiberscope had the additional advantage of allowing realtime digital video and photography of the probes.

In conjunction with this use of GPR and tomography, a complete survey of the entire cave complex was planned. Extensive exploration of cave walls and passages was planned so that a complete and accurate map could be made and so that a realistic model of the cave structure could be established. As a further project, the survey team would also monitor the micro-climate of the cave to analyze the impact and viability of human presence long-term within the cave. A sub-project of this micro-climatology project was the determination of airflow from the area designated the "hearth." The use

of smoke candles to visibly and scientifically discover the practicality of using Chamber B as the a cooking area within the cave. Another survey project was undertaken outside the cave to analyze water sources and access for both the Roman encampment and cave occupants.

Further metal detector surveys were planned using both “standard” metal detectors and the more sophisticated EM61 sensor. The advantage of the more typical detecting equipment lay in its ability to discover metal objects near the surface. The other equipment had the advantage of being sensitive to larger deposits of metal deeper in the substructure.

Finally, “traditional” archaeological techniques were to be used in several sites of interest determine by both reference to previous work by Aharoni and Yadin, as well as sites determined by the 1999 survey. In particular, the “hearth” area in Chamber B, the opening of passage BB, the passage BC, the “niche of skulls” extended from Chamber C, and of the hoard of bronze objects in Chamber A were targeted for excavation.

GPR MAPPING

Beginning in Chamber C, Harry Jol and team gridded that entire hall and began a 200 MHZ mapping. Next the hearth area of Chamber B (Locus 1) was mapped to aid in determining further excavation in this area. It was determined that there may be a “floor” beneath the roof fall that could have been the level of occupation for the Bar Kochba period. Efforts were then begun to remove the roof fall debris to uncover the occupation level. Following this, Chamber A was gridded and mapped. Then following analysis of the Chamber C GPR lines, areas that were determined to be “anomalous” were flagged for investigation by the fiberscope teams. Chamber B was then gridded

and mapped. Data from Chambers A and B were then analyzed and these areas flagged for fiberoptic and metal detection of the anomalies.

The value of the GPR mapping lie in the refinement of possible *layers* of occupation that exist below the current level of the rock fall. This allows for informed decision making in concentrating efforts to remove the sometimes enormous boulders that cover the entire cave floor. The flagging of “anomalies” did not prove as successful as at first hoped, but as this method is refined it might be possible to better understand the types of anomalies that were being observed in the cave.

Tomography

Paul Bauman surveyed an 80 meter transect line extending from entrance #1 of Chamber A to passage BC in Chamber B. This methodology provided an alternate means to observe the stratum below the rock fall surface of the cave. In particular, the survey showed the depth of accretion of material along the transect. Most interestingly it showed the depth to bedrock under the bronze hoard area in Chamber A, and illustrated the possibility that there were multiple occupational layers within the cave.

Fiberscope Probes

After the success in 1999 of the endoscope, use of this and a similar device was continued in 2000. Working in conjunction with the GPR mapping, teams employed the fiber optic scopes to probe detected areas of anomaly, places where there appeared to be a difference of material below the rock fall surface as compared to the adjacent context. By pushing the 3 meter long fiberscope into exposed crevices, one was able to

reveal sub-surface finds. These finds were then digitally photographed and/or a digital video record of the probe was made. Over 100 such probes were conducted during the course of the expedition. Most proved unfruitful, but some located small fragments of wood, textile, or rope and basket material, and several yielded very satisfying results. The Bar Kochba coin with lyre¹ was found in Chamber A (Locus 25) as the indirect result of a fiberscope probe. While attempting to recover a sighted textile, the coin was uncovered.

More directly however was the sighting by fiberscope of large human bones under a massive rock fall in the central portion of Chamber B (Locus 9). While it was not possible to recover the largest of these bones, a portion of a human facial bone was recovered by excavation along with a piece of rope and basket that were located in the same vicinity as the sighted bones.

Surveying

Within the cave an exhaustive survey was made to accurately map the geography of the cave. After initially establishing base points within each area of the cave, the team began the survey team began by mapping the “Niche of Skulls” area to facilitate an pinpointing of material finds. Then the team explored in detail the western extension from Chamber C to establish if there were a further entrance possible from that direction. Following that, a systematic exploration of all the cave walls and extensions, with close attention to the Chamber C area, was conducted. While reviewing the updated data from Chamber A, there was some thought that “excavations” had been

¹Since identified as a coin from the third year of the revolt.

conducted there since the team's presence in 1999.

Part of the survey included measuring the cave's micro-climatology. Monitoring devices were set up in strategic locations throughout the cave complex. Preliminary results indicate two major conclusions: Large scale human habitation could have been supported in the cave (large scale meaning beyond the number of expedition team members); and that there is no concealed entrance other than the two already known to us.

A special project of the micro-climatology study included the use of smoke candles to determine airflow direction and volume. In particular, since the "hearth" area in Chamber B seemed to show indications that it may have indeed been a communal hearth area, it was wondered if such a cooking facility could have been located in the cave's middle chamber. Results dramatically revealed that such indeed could have been the case. A large volume of smoke (8000 cubic feet), far exceeding a reasonable "hearth" fire, was neatly expelled from the chamber through the AB passage way and then along the western wall of Chamber A before being quickly shot through entrance 1 to the open air.

An additional survey was conducted by Gordon Brubacher in the desert environs to discover what may have been the water sources for both the Roman soldiers above and the cave dwellers below. Sources of potable water were found higher up in the Nahal Hever that would have provided easy access to ample water for the Roman encampments in the area. More surprising, however, was the discovery of water sources east of the cave in the wadi below the cave entrance, toward Ein Gedi. Under cover of darkness, by descending a good but not unreasonable distance by rope, a cave inhabitant could have reached potable water undetected by the guards above.

Metal Detection

Initial metal detection work was done using an EM61 detector. The entire cave complex was swept but no finds were discovered using this piece of equipment.

During the second week, Zin Brukner swept the cave with a metal detector and located 9 potential sites for metal finds. Three of these proved to be coins, one a 1949 Israeli coin (Locus 18), another was a first revolt coin found in entrance 2 (Locus 17), and the third was a Bar Kochba coin found in passage AB (Locus 16).

This technology, which was available to Yadin, once again proved its utility in the cave environment.

Excavations

The entire cave map was plotted on a 2.5m x 2.5m grid to enable pinpointing loci and finds. Initially, three areas were chosen to begin excavations. Locus 1 was the "hearth" area in Chamber B, so named because of the large number of wood pieces and fragments of taboun that were found there. A major effort was invested in removing debris from this area to uncover as much as possible, the occupation layer associated with the hearth. Approximately 100 samples of wood were carefully taken for analysis to determine specie and carbon 14 or thermoluminescence dating. Many of these were burned or showed evidence of being worked by an axe or similar tool. The hearth was located along the wall of Chamber B and was associated with a small chamber found to the south beneath a large over hanging boulder. This small chamber (Locus 8) yielded some more oven fragments, and organic materials including what might be egg shells and animal droppings. Surprisingly, perhaps, no cooking ware was found in association with the hearth area, only oven fragments. In the opposite direction, toward the north, a

deep cavity (Locus 14) was discovered below the hearth layer. In this depression were found fragments of oil lamps, rope, wood and a spindle whorl. Again, cooking ware was absent. Nonetheless, the current theory concerning this area is that it was indeed the communal cooking area for the cave during at least one level of occupation. The presence of Roman style glass in at least one of the fragments of the oven suggests that this would have been during the early Roman period.

The second area investigated was the Niche of Skulls (Locus 2). In this area there was no excavation or removal of debris, but a careful survey of material and the removal of textile fragments. The bones of the niche seemed to have been buried in a “charnel house style”: baskets of similar bones were paced on the ledges and shelves of the room. It was determined that there were at least partial remains of 13 individuals, including some children. The textiles recovered from the locus were very numerous. The items were photographed² and carefully wrapped in acid-free paper for later analysis. Some shards of Roman period cooking ware were recovered from the locus as well. It remains unclear whether or not these bones relate to the Bar Kochba period, although that is still a plausible assumption at this point.

The third initial locus, Locus 3, was that of an area in passage BB near where the Hadrian coin was recovered in 1999. Unfortunately, this area proved totally barren of other material finds. The area on this southwestern wall of the passageway yielded only a layer of bat guano extending some 1 meter in depth. Later however, the area at the northern extremity of the BB passage was excavated and this provided some of the most interesting textile finds of the expedition. In addition, tiny remnants of papyrus

²Some photos appear in the appendix cd.

were discovered. Unfortunately, none of the small fragments appeared to have any markings on them.

Throughout the course of the expedition, however, Locus 6 and the loci later associated with it proved the most productive in terms of providing ceramic material, ropes, and textiles. Several hundred shards were recovered in this area of the BC passage. In addition 2 coins, a silver Vespasian and a Nabatean coin, were found in this area. Somewhat puzzling though was the dearth of rim fragments in comparison to the large number of shards. Most of the ware was cooking ware dating ostensibly from the 2nd century CE.

Other Interesting Finds

As is perhaps often the case, some of the most interesting finds are discovered somewhat by accident. A child's sandal was recovered from entrance 2 which area was serving as the expedition's latrine area, someone having seen it as they struggled through the narrow opening to Chamber A. A piece of mat was uncovered in the team dining area as someone "got comfortable" to eat the midday meal. A wooden comb was revealed in the AB passageway that was the daily conduit for members' passage from the entrance and Chamber A to Chambers B and C where the main work of the expedition was ongoing.

Other interesting finds include:

- \$ pottery shards with a black residue on the interior surfaces
- \$ several possible ostraca – the pigment is very faded and will need special photography to possibly recover the inscription
- \$ stylus-like wooden points

§ a fragment of a wooden bowl