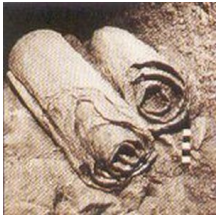


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By: Stefan Anitei, Science Editor



Ancient Parasites Confirm the Sect of Essenes

Their ritual of purification brought them disease

Bioarchaeologists have found recently at the ancient settlement of Qumran, near Dead Sea, a strange communal latrine which belonged to Essenes, confirming the extreme hygiene practices described in ancient texts. The Essenes were a strict and mysterious ancient Jewish sect around the time of Jesus linked to the Dead Sea Scrolls. New evidence from Qumran proves unusual hygiene practices in the ancient community, with Essenes showing obedience to unique, rigorously demanding precepts specified in Dead Sea Scrolls texts. An international team positively identified the site as a latrine area through analysis of sub-surface soil samples. Instructions in two of the Dead Sea Scrolls (photo) specifically required latrines to be located at a significant distance "north-west of the city," and also to be "not visible from the city", practices also described by the first century Jewish historian Josephus. The team spotted an area approximately 500 meters to the northwest of the settlement sheltered from view by a bluff. The soil in the area was significantly different colored from other soils in the Qumran environs. "I started thinking that in the scrolls they have these very explicit descriptions of where the latrines have to be," explained University of North Carolina at Charlotte biblical scholar James Tabor. "That's a phrase used in the Torah, where Moses tells the ancient Israelites 'build your latrines outside the camp.' When you go to the toilet, take a paddle or a shovel with you and use the toilet and then cover it up. This group is very strict and they observe this practice rigorously -- in one text it says go 1000 cubits, and in another text, 2000 cubits." he said. The team took four random soil samples at the site as well as six other samples for control, 4 from surrounding desert areas, one from an area of an ancient stable (to test for animal parasites), and one from an area on the opposite side of the city. Three of the four samples from the suspected latrine area yielded desiccated eggs of four species of human-specific intestinal parasite species: *Ascaris* sp. (human roundworm), *Taenia* sp. (a human tapeworm), *Trichuris* sp. (a human whipworm) and a human pinworm, *Enterobius vermicularis* that had not previously been reported in the ancient Near East. The stable soil sample contained the eggs of *Dicrocoelium* sp., a common parasite of ungulates. The control samples lacked parasites of any type. "Finding evidence of parasites would be easy in a latrine, but in the middle of the desert... But small things like parasite eggs in feces can hang around for thousands of years. At the Dead Sea, we have hair and hair combs with desiccated lice in them because of the dryness." said Israeli paleopathologist Joe Zias. "The evidence shows conclusively that the area was a toilet," Zias noted. "The samples contained eggs from intestinal worms that are specific to humans. These things had to come from human feces. The presence of eggs in three out of four 100-gram samples indicates heavy and continual use of the specific site suggested by Tabor." "One possible concern was that the latrine area could have been used by Bedouins, who are known to have been near Qumran," said Zias. "However, according to Bedouin anthropologist Professor Aref Abu-Rabia, Bedouins are generally not known to bury their human waste, and fecal matter left on the surface quickly dries up and is broken down by sun and wind. This stuff was certainly buried, as the ancient documents say it should be." Heavy daily digging by the Essenes marked the desert so strongly that is noticeable even today, 2000 years later. "I went there and the entire area looked like somebody had plowed it, the earth was so nice and soft, while the rest of the desert was very hard," he said. The unusual latrine may explain another puzzle of the ancient Qumran, raised by the site's 1,100 graves, which are almost exclusively male. "2,000 years ago in Jericho, 14 kilometers to the north, the chances of an adult male dying after 40 were 49 percent. But when you go to Qumran, the figure for people surviving to 40

falls to six percent: the chances of making to 40 differ by a factor of eight!" said Zias. "And yet we are told that these men arrived very healthy - they had physical examinations coming in. The people at Qumran thought that you could look at body types and tell what kind of person you were. Josephus tells us that the Essenes were selective -- you had to be 20 years old, and you had to be healthy," Zias noted. When the scientists linked the communal latrine with obsessive use of pools for ritual cleansing and bathing, the mystery was solved. "Burying your feces in the outdoors makes a lot of sense until you live in Qumran," Zias said. "What happened was that 20 to 40 people went out there every day over a period of 100 years. By burying their fecal matter, they actually preserved the microorganisms and parasites. In the sunlight, the bacteria and parasites get zapped within a fairly short amount of time, but buried, the parasites can live in the soil for up to a year. Then people pick up things by walking through fecally contaminated soil -- it's like a toxic waste dump, and if you have any cuts on your feet..." Ritual bathing practices in cleansing pools worsened the exposure to germ contamination. "After they went to the latrines they were required to enter one of the emersion cisterns (Miqvot) before they came back into the settlement. Hygienically, that sounds like a good idea, if you have fresh running water, but there is no running water at Qumran, only runoff which was collected during the three months of winter rains. They enter the cisterns where everyone else has been, with all the bacteria they've brought in with them, floating around. The bacterium, which usually doesn't last long in the air and sunlight, stays active for a longer period in the sediments and is continually re-suspended in the water by people disturbing the pool." explained Zias. Qumran had also other immersion pools, but the Essenes' religious practices seem to have insured their contamination. "People who have cleansed themselves in the outside pool also have to go into the Miqwah twice a day. The water there may look clean, but hygienically, it was rarely changed and must have been very dirty with the potentially fatal pathogens shared by everyone who was entering it for ritual purification. And Miqwah cleansing is a total immersion, which means that it gets in your ears, in your eyes and in your mouth. It is not hard to imagine how sick everyone must have been," Zias said. Paradoxically, the strict latrine and purification practices, which would have meant more hygiene, with the lack of running water claimed the high death toll at early age in this community. "The people in Jericho were not religious extremists who went into the Miqwah twice a day and they also had clean, running water from the natural springs surrounding the desert oasis. The men in Qumran lived and bathed religiously in contaminated water that had been standing for up to nine months at a time," Zias said. Tabor thinks that poor health might have had a spiritual value for the Essenes. "They would have seen their infirmities as punishment from God for their lack of purity and then have tried even harder to purify themselves further."