During the summers of 2001 and 2002, the cemeteries east of Khirbet Qumran were mapped. We now know that in the Qumran cemeteries there are 995 visible unexcavated graves, 82 excavated graves (either with a permit or without), and 136 GPR located “potential” burials for a total of 1213 graves. This count is different than the 2001 season map, and to the well-known “South Cemetery” designation (located on the other side of Wadi Qumran) we have added a more exacting designation: “the Highland Cemetery” (because it is located above the “South Cemetery” but directly adjacent to it) have been added after much discussion. Both the South Cemetery and the Highland Cemetery are located across Wadi Qumran but share many characteristics with the main cemeteries of Qumran and was added after much discussion. It is

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1 This is an update of the article, Dead Sea Discoveries, Volume 9.2 (Leiden: Brill, 2002), M. Broshi, H. Eshel, R. A. Freund, B. Schultz article entitled: “New Data on the Cemetery East of Khirbet Qumran”, pp. 135-165, that included materials from the 2001 excavations. The John and Carol Merrill Qumran Excavations Project 2001-2002 was a joint effort of several institutions and organizations. Magen Broshi and Hanan Eshel were directors of field excavations on behalf of the Bar Ilan University and the Israel Exploration Society. Project director was Richard A. Freund on behalf of the University of Hartford who was responsible for the planning and execution of the research projects and sub-projects noted below. Chief Geologist for the 2001 Project was John F. Shroder on behalf of the University of Nebraska at Omaha. Chief Geophysicist for 2001-2002 was Paul Bauman, on behalf of Komex International, Inc. that produced the ERT scans, aerial photography, magnetometry and EM projects throughout the site. Chief Geographer and Cartographer 2001-2002 was Philip Reeder, on behalf of the University of Wisconsin, La Crosse. Carl Savage on behalf of Drew University and Noel Bautista (2001-2002) on behalf of California State University, Long Beach assisted in mapping. Carl Savage also supervised the tomb #1000 excavations and an Olympus fiberscope survey in 2002. All of the maps and mapping techniques that were developed to allow for an understanding of the cemeteries, periphery of the site, aqueduct system, caves and potential caves excavated and surveyed are being produced. A full Ground Penetrating Radar Survey Project 2001-2002 was initiated and developed by Harry Jol on behalf of the University of Wisconsin, Eau Claire and includes sites in the cemeteries and the periphery of the site. Christine Dalenta was Chief Photographer 2001-2002 and is developing a website at the University of Hartford including maps and photographs of all graves in all of the related Qumran cemeteries. A video documentation project was directed by Gary Hochman of Nebraska Educational Television. Robert Eisenman, on behalf of the California State University, Long Beach, also contributed invaluable supervisory and informational support to the various projects. We wish to thank the Frankel Foundation, Los Angeles, Hershel Shanks and the Biblical Archaeological Society, Washington, D.C., Robert Randhare and the Olympus Industrial division, and the Maurice Greenberg Center for Judaic Studies and the Hartford Art School for other financial and logistical support.

2 Ibid., “New Data,” p. 139.
important to point out that the goals of the 2001-2002 John and Carol Merrill Qumran Excavations Project were more than just the cemetery. The goals included:

I. Reinvestigating GPR surveys done in 1991-1992 on the marl terrace near cave #4 (4a and 4b) and near caves 7-9. Robert H. Eisenman at California State University, Long Beach had identified potential (unexplored) cave sites in their groundscans performed at the Qumran site December 28, 1991-January 19, 1992. This study occupied two years of probing along the associated fingers near 4a and 4b. One of the main reasons for the need for the reinvestigation of the site is that no read-outs from the earlier study are available. These sites were resurveyed by Harry Jol in 2001 and were probed in 2002. In 2001, one of these sites produced results between caves 7 and 8 (See Figure I and IV-noted as Cave 2001).  

II. Mapping for 2001 and 2002 included sites:
   - identified by field directors Hanan Eshel and Magen Broshi (and others) during the past 20 years (Figure I-caves A, B, C, and F and Figure II)
   - the aqueduct (Figure II)

III. Identification of an anomaly identified using Electrical Resistivity Tomography on the western edge of the Qumran site (and identified in 2001) was resurveyed and an attempt to excavate begun. Similarly, anomalies identified during the 2001 season on the eastern edge of the Qumran site were also reinvestigated in light of finds made there by a later excavation headed by Professor Yitzhak Magen (Figure I and IV-“January 2002 Spoil Pile” created by these excavations was surveyed in).  

IV. The Cemetery included two major subprojects in addition to just finalizing the map begun last summer: The reinvestigation of the orientation and numbering survey of the graves from the 2001 was re-done because of anomalies that were discovered during categorization and rechecked for our final mapping project. (Figure IV) The final results will be available on the website created on the John and Carol Merrill Qumran Excavations Project at www.hartford.edu.

V. The mapping of the so-called: “South Cemetery” was done in 2002 (Figure #1). This map added 35 graves and subdivided De Vaux’s “South Cemetery” into two parts. The South Cemetery is now a 21 grave collection to the east and below a 14 grave “Highland Cemetery” that is approximately 20 meters above the lower South Cemetery. Of the 35 graves, 14 possible “burials” were located using GPR and 21 were visible and in various states of preservation. A grading system for the state of preservation for all graves in all cemeteries was also finalized to allow future researchers to have comparative information.

VI. The GPR re-investigation of Tomb #1000, where fragmentary skeletal remains of two women were discovered in 2001, (including additional excavation) was re-done in 2002 with new results (Figure V).

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3 On December 28, 2000 we went with Noel Bautista (representing California State University at Long Beach’s Robert Eisenman), Michael Friend, (who worked on the 1992 survey representing Robert Eisenman), Hanan Eshel (Bar Ilan University), Hershel Shanks, and Magen Broshi (emeritus, Israel Museum).

4 Photographs of finds (made near the area along the ERT line run by our group in 2001 and mapped (in our present Figure I) is the January, 2002 Spoil Pile are in the publication: Y. Magen, The Stone Vessels Industry in the Second Temple Period, (Jerusalem: Israel Exploration Society, 2002), p. 138 ff.
VII. Mapping and investigation of the cliff faces and caves to the north of the site (Figure I)

I. History

The cemetery of Qumran has been noted by many since the mid-1850s. F. DeSaulcy and the Rev. H.B. Tristram came in the same year. Tristam wrote: “We found at intervals many indistinct rows of unhewn stones, which, if at all the remains of human constructions, carry us back to a ruder period than the flints of our gravel beds…” Three reports from 1874 seem to be directly connected to our understanding of the cemetery of Qumran. The first expedition there in October 1873 was conducted by M. Clermont-Ganneau, who saw the ruins of Khirbet Qumran as insignificant but viewed the cemetery as extremely important. He may have excavated as many as two graves at the place he called: “Khirbet Gomran.” They did not really know what to make of this site along the Dead Sea. The name Gomran may preserve an ancient or pre-modern association with Gomorrah, of Sodom and Gomorrah biblical fame. His results are the first pieces of information about those entombed there. In Tyrwhitt Drake’s version of the visit, the place is called Khirbet Gumran. Lt. C.R. Conder’s December 1874 survey does not add any information to the site. 54 to 55 other graves have been officially excavated since 1873. Forty-three graves were excavated by Father Roland DeVaux.

5 De Sauley in his Narrative of a Journey Round the Dead Sea and in the Bible Lands: 1850 and 1851, Including an Account of the Discovery of the Sites of Sodom and Gomorrah (ed. Count Edward deWarren, London: Richard Bently, 1854) and Tristram in his The Land of Israel; a Journal of Travels in Palestine Undertaken with Special Reference to its Physical Character (2nd edition; London: SPCK, 1866)


7 M. Clermont-Ganneau, the Jerusalem Researches III, PEFQS 1874, #83. November 29, 1873.

8 Both were published in The Survey of Palestine XVIII, PEFQS (1874), pp. 35-79

9 Two tombs in 1949, 9 in 1951, 8 in 1953, 2 in 1955, 22 in 1956.
Solomon H. Steckoll in the years 1965-1967. A variety of tombs (at our counting more than 10) have been clandestinely robbed/raided or excavated in the years between 1967 and the present. We discovered evidence of unofficial or on-going work in the cemetery between the summer of 2001 (when we finished surveying and photographing all of the graves in the main cemeteries) and the summer of 2002 when we returned to finish some details in the main cemeteries and document the far southern cemeteries (see Figure I).

II. The John and Carol Merrill Qumran Excavations Project

The work of the John and Carol Merrill Qumran Excavations Project actually began in the summer of 2000, when we began with a walk-through the main cemeteries with Stephen Pfann and Lawrence Schiffman to assess the possibilities of using sophisticated geophysical equipment (Ground Penetrating Radar, Electrical Resistivity Tomography and Magnetometry) in the cemetery. The equipment and staff were in Israel for our 2000 John and Carol Merrill Cave of Letters Project and our walk through was aided by a discovery in what would become known as tomb #978 (see Figure I, III, IV). In 2000, in the tomb (that later became) known as #978, we discovered using magnetometry a large metal concentration. Between the time that the

10 S.H. Steckoll, “Preliminary Excavation Report in the Qumran Cemetery”, Revue de Qumran 6.3 (23) February, 1968, pp. 323-344. Three different numbers are used in reporting this. 9 tombs are cited but question marks abound in the citing of this material. Z. Kapera actually uses a question mark in his latest Qumran Chronicle December 2000 9.2/4 p. 146, while in his 1994, Annals of the New York Academy of Sciences, Vol. 722 article on the Qumran Cemetery, p. 98 he uses the number 12, while J. Zangenberg in his Qumran Chronicle August 2000, 9.1, p. 54 n. 6 uses the number 11 and assigns two graves to Clermont-Ganneau despite the fact that most cite only one grave excavation to him.

11 At least nine graves from the main cemeteries research we had done in 2001 had been disturbed between had been disturbed. Photo comparison of graves from 2001 and 2002 are available at our website.

12 The geophysical team was led in 2000 by John F. Shroder, Department of Geology and Geography, University of Nebraska at Omaha, Dr. Philip Reeder then with the Department of Geology and Geography at UNO, Paul Bauman from Komex International, Calgary Canada, and Harry Jol, Department of Geography, University of Wisconsin, Eau Claire. The staff was concerned about how their equipment might function in the electrically conductive conditions of the Qumran cemetery. The entire staff met at a conference at the University of Nebraska in Omaha, Nebraska in November 9-12, 2000 to assess the readings from the July, 2000 walk through and the possibilities for a full project. On the basis of the discussions in Omaha, the group decided to formulate the goals for a full project that was presented to Hershel Shanks of Biblical Archaeology Society and John and Carol Merrill for consideration and funding.
metal concentration was first noted (July, 2000) and the negotiations to develop a larger project for the Qumran and the cemetery, we visited the site again in late December, 2000. We were accompanied this time by Hanan Eshel, Michael Friend, (who participated in the 1991-1992 California State University, Long Beach project), Hershel Shanks of Biblical Archaeology Review, Magen Broshi and others. Part of the developing project that we proposed to the Antiquities Authority was full geophysical survey of the periphery of the Qumran site (including potential excavation sites that had been located by Ground Penetrating Radar in the early 1990s). By December, 2000, we discovered that the grave with the metal concentration had already been partially excavated. A license was applied for and the tomb was finally scientifically excavated in the summer of 2001. A license including a full project for the cemetery and other areas of the Qumran site was requested from the Antiquities Authority of Israel with Hanan Eshel of Bar Ilan University and Magen Broshi, (emeritus of the Shrine of the Book) as directors of field excavations.

During the summer of 2001 we were permitted to survey the cemetery using non-invasive technology and to systematically investigate the already excavated tombs. We came to some remarkable conclusions as we began our work. Since little detailed information was known about the cemetery, we took little for granted. We did not assume that we even generally knew how many graves were present in the cemeteries, for example, since no one had ever exactly counted them in a scientific study. We did not assume that the graves (oriented East-West, North-South or any other direction) one way or another, were of the Essene/Qumranite vintage or even Bedouin. We did not assume that one or another grave was ancient and another pre-modern.

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13 We discovered that many graves were not perfectly oriented N-S and E-W. Either because of the slippage and movement, reuse of stones for later graves or because the orientation was based upon criteria of space, topography, or other considerations, northeast-southwest orientations are frequent. Others have noticed the problem of non-exact N/S, E/W alignment and orientation. See R. Hachlili, “Burial Practices at Qumran”, Revue de Qumran, 16., p. 249.
We did not even assume that it was clear what the parameters of the cemetery were today or in antiquity. This last issue caused us great problems in the end of the 2001 season as we shall see. The project we developed was based upon a model we had early developed in the Bethsaida Excavations Project in the early 1990s and later the John and Carol Merrill Cave of Letters Project in the late 1990s. In the case of Bethsaida, geological and geophysical investigations helped us zero in on archaeological issues and develop pin-point models for excavations. In the case of the Cave of Letters, a similar methodology was used to solve archaeological questions without excavating the entire Cave. The geophysicists, geologists, and geographers brought to Qumran a series of different technologies and methodologies that helped us totally and globally reassess a large area such as Qumran without excavating every area under investigation. In the case of the divergent counts in the Cemetery of Qumran, we felt it was necessary to begin from scratch. A benchmark (and often benchmarks) was/were located in clearly established areas in the cemetery and GPS data were inputted during 2002. The use of ground penetrating radar (GPR) gave us an advantage in the location of new and old graves. GPR has been used at the site on several occasions in the past but a full account of its use at Qumran in the early 1990s was recently published by Robert Eisenman and Michael Baigent.14 Eisenman’s study concentrated on locating caves along the marl cliffs and testing for earthquake damage at the site. Our 2001-2002 GPR, EM and ERT projects were initiated to better understand the Qumran site, in general, and to reinvestigate some of the information that had been collected in the early 1990s, in particular. A major part of our study was the use of GPR, ERT and EM at Qumran, first, in identifying marked and unmarked graves in the Qumran cemetery, and secondarily, to identify if there were more caves in the marl cliffs that might contain artifacts associated with Qumran.

Geophysical methods, such as GPR, provide a noninvasive, nondestructive means to determine the positions of previously known (but damaged or changed), unknown or unmarked grave without violating religious sensibilities regarding cemeteries.

Harry Jol of the University of Wisconsin, Eau Claire in 2001 used Sensors and Software Nogging GPR system (250 and 450 MHz) on a cart, which allowed one to quickly collect data over the large graveyard areas. In 2002, a Pulseekko 1000 GPR system (225 450 and 900 MHz) was used to provide easier access to more difficult sites and provide diverse types of signals to examine the variations of possible data collection. Along the cliff faces and difficult access areas, individuals with antennae were lowered with ropes and surveys were conducted along predetermined lines. In the cemetery, a slow and more methodical system was used. Near surface velocity measurements were calculated from common midpoint (CMP) surveys and application of radar stratigraphic analysis on the collected data provided the framework to investigate both lateral and vertical geometry of the buried archaeological features.15

One GPR objective was to locate potential gravesites at the Qumran cemetery where burial stones had been removed due to vandalism, use in other burials, or construction projects. Since no complete and systematic map had been constructed of the Qumran cemetery, GPR was utilized to map the subsurface in hopes of identifying unmarked burial sites. Using geophysical, magnetometry, and GPR together we hoped to be able do more than just locate graves. We hoped to non-invasively:

- Identify possible multiple vs. single burials
- Identify shallow vs. deep burials
- Identify whether a stone circle, (usually identified as a grave) was or wasn’t a grave

Identify whether coffins, zinc/lead, limestone sarcophagi, etc. were present in the graves
Identify characteristics inside of grave such as whether there was a side arcosolium vs. none
Identify whether artifacts were present in the graves or not. 16

After two seasons, not all of these goals were realized. Some of these were entirely theoretical goals or questions and when interfaced with other geophysical techniques seemed like possible, although not probable, research questions. Most of the staff did not know what was possible, probable and not possible when we began, but we soon learned. These goals were to test the limits of the technology to add to the body of knowledge about the site, the cemetery and especially the graves without opening them.

Initially, an experiment was conducted on known gravesites so that GPR reflection patterns could be identified. Two patterns emerged as burial signatures. The most striking—a hyperbolic feature and a “V” shape. An extensive GPR search was conducted along the outer edges of the presently exposed cemetery as well as empty patches of ground within the exposed cemetery. Interpretation of the GPR profiles as they were collected resulted in 136 “potential” burials being located that did not show surficial expressions. (see Figure below).

This is a GPR profile showing a “V” shaped reflection patterns that is interpreted as a potential burial(s). There is no evidence on the surface of the site that it was a burial(s). Profile is 4 meters wide and approximately 1.5 meters deep.

There was no systematic map of the entire cemetery that we could base our plan on. Steckoll’s well-known plan of the cemetery had serious disabilities. It did not conform to the reality of the cemetery plan or the geographic and cartographic standards of the 1960s when it was produced. The de Vaux plan, which was produced and reproduced in a number of forms, does not conform to the reality of the cemetery as we found it. The geologists, geographers, and cartographer, did not start from the premise that there was only one cemetery. De Vaux and others speak of “cemeteries,” mostly because of natural and artificial “borders/separations” between them. The fact that other cemeteries to the far north of the Khirbet Qumran settlement and to the far south across the Wadi Qumran are sometimes mentioned in the same breath as the main cemetery, (which contains itself four distinguishable parts) within a few hundred meters of the Khirbet, also complicates the matter. We limited our focus to what we call the “extended” main cemetery within a few hundred meters of the Qumran site, while recognizing the existence of other cemeteries in the area. At the end of the 2002 season we have redefined our earlier assumption and what had been called “The South Cemetery”

III. Two Discoveries

The first discovery was presented by Dr. John F. Shroder, Jr., our chief geologist on the Bethsaida Excavations Project and the John and Carol Merrill Cave of Letters Excavations Project and now the Qumran excavations. He concluded in his geomorphological site survey report that the northern prong of the main cemetery, which is today separated from the rest of the site by a modern road built through to the “Parking Lot” and “Visitors Center” in the first half of the 20th century, was originally connected to the main cemetery. According to this
assessment, the modern asphalt road that leads to the parking lot and visitor’s center was built probably upon a part of the ancient cemetery (Figure IV). Future work at Qumran might reexamine this conclusion with greater detail. It would be important to use the GPR and ERT equipment on the road to make a fuller interpretation of the relationship between the North Cemetery and the main cemeteries to the south. The natural erosion and other geophysical characteristics associated with the region, which has also split the four “fingers” of the cemetery, has taken graves into the wadis below. If one were to extrapolate the connected pieces of all of the cemeteries and attempt to reconstruct a complete, ancient cemetery from North to South, the number of graves in this larger cemetery would probably rival the size and number of graves located at the Khirbet Qazone site on the eastern shores of the Dead Sea.17 In addition, while the famous earthquakes in the area did have some effect upon the cemetery and the site of Qumran, it is not so apparent that this fault is the reason for all of the major changes in the area. The infamous “fault” line, which had been identified so prominently in most of studies to date two different periods of occupation was not in Shroder’s opinion the only factor in the displacement that is seen in many locations around the site.18 It is Professor Shroder’s opinion that it was earthquakes combined with the normal subsidence and erosion evident throughout the Dead Sea area, which has significantly destroyed parts of the cemetery and the site (cisterns and baths included) even in the past century.

Another discovery in the cemetery was the determination (or perhaps better the questioning) of the parameters of the cemetery. Presently a sign marked “Cemetery” is found in the cemetery some 25 meters from the eastern wall of the settlement (Figures I and IV, the

survey benchmark is the cemetery sign. It is a triangular symbol to the south of the “January 2002 Spoil Pile”) The distance between the settlement and the first graves of the cemetery is a part of the cemetery’s designation as a “Jewish” cemetery. Generally theories relating to the cemetery’s distance from the settlement reflect the imposition of later rabbinic norms (upon a distinctly non-rabbinic cemetery) in order to further document the settlement’s connection to Jewish life. Even though it is accepted that this is not a “rabbinic” settlement, the idea of using an acceptable Jewish standard from antiquity may have dictated the placement of the sign at 25 meters from the settlement (rather than any real investigation). It is clear through photographic comparisons that during the past 50 years stones have been moved many times from their original locations on top of graves in order to facilitate excavations, equipment, improvements, campsites, etc. and it seems that the buffer between the clearly marked graves and the opening of the settlement may have become standardized only in the past 25 years. Although one of the major arguments for the “Jewishness” of the cemetery has been the distance of the cemetery and graves from the settlement, this can no longer be simply maintained. The 2001 GPR survey of the cemetery located a variety of burials at some 1-2 meters below the surface (and not presently

19 Usually cited from Mishnah Baba Batra 2.9. See also 11Q19 (Temple Scroll) 48.10-51.10. The Mishnah states that the cemetery should be 50 cubits (25 meters) away from the settlement. This rabbinic tradition has been “over-interpreted” to fit the existence of the cemetery into the touristic vision of the site but may also reflect the reality after decades of excavation, renovation, and reconstruction at the site. The tradition is really much more complicated than many are led to understand in the Mishnah of Baba Batra: “Carrion, graves, and tanneries must be kept 50 cubits from a town. A tannery must only be placed on the east side of the town. Rabbi Akiva, however, says that it may be placed on any side except the west, providing it is kept 50 cubits away.” The term here is “graves” and not cemeteries. Although they are often used interchangeably, in this case it apparently refers to a large number of graves, which is the problem. In the related Mishnah and Tosefta Baba Batra traditions, “dove cotes” are mentioned as well. It appears that the text is addressing the problem of regular placement of primary burial (and perhaps shallow) graves and other extremely odorous activities and not addressing the issue of “ritual” purity of cemeteries per se. In addition, the question in the Mishnah is in connection to the distance of houses to these odorous locations. Since there are no living quarters directly adjacent to the cemetery in Qumran the use of the rabbinic standards here are not appropriate. There are no living quarters adjacent to the cemetery, so one must ask what the purpose of the eastern wall at Qumran might be. In fact, rabbinic traditions concerning ancient formal cemeteries in open air (non-cave) locations as we know them today is quite unusual. Sanhedrin 6.5 Batei Kevarot or Batei Almin, “cemeteries” were placed at the disposal of the court for the burial of
visible) and there were no markers which establish whether they were graves or other types of burials. When these “subsurface” GPR anomalies are compared with the clearly marked graves, the subsurface anomalies look very similar to the clearly established graves. 136 GPR potential burials were found throughout the cemeteries and almost 40 are located less than 25 meters from the eastern wall of the settlement. Some excavation work to see if graves used to be located closer to the settlement wall had been done earlier with no success. The reason why they had no success was that although they suspected that there had been graves closer to the settlement, the earlier attempts had no way of distinguishing where to look! It was haphazard and unsystematic work without any specific reason for choosing one location over another. It is probable that even if systematic work had been done, the expectation to excavate down through the hard pack to the required depth of 2 meters might have impeded their efforts. The GPR “possible” burials were closer to the site than the present day and went from north to south along the wall at a depth of 2 meters. Some burials were as close as 10 meters away from the eastern wall of the settlement according to our 2001 GPR survey (Figure I and IV). The conclusion is that in antiquity the settlement was apparently much closer to the burials and the cemetery than was earlier thought. This can lead to many other conclusions and in fact may be the answer to some of the most recent discoveries in the cemetery near the eastern wall of the settlement. I have taken great pains to call these GPR located anomalies—“burials”—and not “graves” because they may be sites where items were buried in close proximity to the cemetery. The GPR anomalies indicate that the ground was dug out and then replaced. This insight is based upon the additional information provided by the excavations by Yitzhak Magen, which took place at the

people or commoners who did not otherwise have a family cave or place to be buried (caves) or who were executed by the court.

eastern side of the settlement beginning in December, 2001-2002. It is in and around the areas which we surveyed in 2001 that the discoveries were made (January 2002 Spoil Pile is from these excavations in Figure I and IV). His discoveries are remarkable even by the standards of Qumran discoveries over the past 50 years. In the area along the wall which we surveyed in 2001 he has uncovered a series of “buried” jars which will take years to fully understand but help us piece together another part of the Qumran story and the use of the cemetery.

The Qumran burials are usually understood to be different from and yet similar to the practices of burial found in the rest of Israel during Second Temple times. During Second Temple times and even in the Iron Age, the standard burial was in burial caves for families and grave goods (a variety of different bowls, platters, food, jugs for liquids, juglets for oil, perfumes, weapons, etc.) were also found in these burial caves. It is hard to imagine that all ancient Israelites and later Judeans buried in these caves since they are quite elaborate and imply a level of status that may not be realistic for the masses. One draws one’s conclusions, however, from the burial caves, which were used during the period of Qumran and continued into the period of the Rabbis (2nd-fourth centuries) throughout Israel. Qumran may, therefore, simply be a reflection of a common Israelite and later Jewish practice of burial in the ground in much the same way as a “paupers graves” in common graveyards in later periods. The north-south (feet to the north-heads to the south) orientation of the majority of the graves was thought to be a connection shared with the later Karaites. The Qumranites may have been affected by the family burial chamber and some of the burials at Qumran demonstrate the use of coffins (wood) but in general, these are simple burials with very few grave goods. The grave goods of the

Qumran graves are also very simple. Cemeteries, however, also provided a location in antiquity for a variety of different purposes. Cemeteries were used for the burial of worn texts in a later period and according to rabbinic literature, cemeteries (or locations just outside the city walls) may also have been the repository of many items deemed to be “impure” according to a variety of extended regulations associated with the laws of purity and impurity of the biblical books of Numbers and Leviticus.

The cemetery of Ur, for example, began as an area for dumping trash near the wall of the city and then developed first as burial for elite and then later for commoners. When Sir Leonard Woolley excavated the cemetery he found 2500 graves with most skeletons simply wrapped in matting and some small grave goods. So in one area, ancient trash and then later the burials appeared with some attracting above-ground funerary mausoleums or enclosures for more important people. These types of burials are found throughout the world, especially in areas where caves are not found but often even in areas where caves are plentiful. From South and Central America, China, Africa and Asia Minor, grave goods in burials, which are often part of the burial ceremony or preparations for the dead were often buried in the cemetery in specialized locations following the internment of the dead.

IV. Directions of Bodies and Orientation of Graves in the Cemetery

One factor in the identification of “Jewish” (usually called: “Second Temple Period”) graves at Qumran has traditionally been the orientation of the graves in the cemetery and even the direction of the burial of the skeleton in the grave. In fact, we found that (of the clearly marked/non-GPR identified burials-136 burials) there were just over 1000 northward-southward oriented graves versus the just over 70 graves oriented eastward-westward. We cannot give

exact numbers because the graves were not exactly oriented n/s and e/w. This was one of the major questions about the discovery of a skeleton inside of a building in the summer of 2002 in Tomb #1000, which is oriented east/west. The argument has generally been made that since east-west orientation is found among Moslems and some Bedouin groups in Israel and because of the nature of some of the grave goods found inside of some of the excavated east-west graves that all east-west orientation graves are of Moslem/Bedouin origin. In fact, the conclusion is that the 54 tombs oriented east-west (in the main cemetery) are Bedouin and datable to the last few centuries. Since the vast majority of the burials have a general north-south orientation, they must be the ancient Qumranites and the other burials may not be Qumranites. The argument needs to be more carefully crafted to allow for a variety of different reasons and influences based upon the discovery of the east-west ancient Tomb #1000. The ability to say that there is a single, common practice of burial from all of the different periods of ancient occupation at Qumran may need to be revised, especially in light of the Tomb #1000 discovery. Also, the lack of a clear and fixed orientation of the graves in the cemetery (into neat categories of E/W and N/S; NE/SW versus SE/NW) and direction of the body (W/E versus E/W versus S/N versus N/S) and whether the body was buried with or without grave goods may help us make finer distinctions about the use of the cemetery. Many other theories about the use of the cemetery can be proposed. Perhaps Qumran was a regional “non-denominational” cemetery (or perhaps the areas were naturally separated even in antiquity into cemeteries) and only some of the burials are linked with the Qumran site? Perhaps it serviced a regional population like the 3500 grave site cemetery of

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23 The designations should really be south-north, west-east, north-south and east-west. They are really not the same and more careful attention to these differences in future investigations is important. Puech points out that the 18 tombs excavated in the northern part of Trench II at Tell el-Sultan are “…all oriented west-east and the skeletons uniformly lie with their heads to the west, opposite Jerusalem.” Puech, Ibid., p. 28.

Khirbet Qazone (north-south orientations, although in the 22 graves surveyed, the head is towards south)?

Qumran’s location next to a major north-south road and location near the crossroads to an east-west link to the Mediterranean Sea makes this an excellent regional cemetery location. One experiment was conducted to see how GPR could attempt to provide new answers without excavation of the tombs. In the non-systematic GPR analysis of some of the unexcavated east-west oriented graves we discovered that some were shallower (.5 meters) than the north-south graves (1.5 meters) but others were not. It would be important to follow up this non-systematic study with a systematic GPR study of all east-west oriented graves in order to draw a more systematic conclusion. If our selective GPR study is indicative of anything, however, it indicates that the shallower east-west graves are in fact later use graves that borrowed stones from the heaps of nearby deeper graves and in some cases built right over an earlier (deeper) grave. It is also possible to see if the .5 depth east-west graves are built on top of other, deeper graves or not. This would be a good follow up study as well, because of one experiment that we conducted. Among the shallow excavated graves, which were in an east-west orientation, it was possible (in selected cases) to discern another grave below the shallow grave using GPR technology (but not always). We immediately assumed in the case where it was possible to discern a deeper burial below an excavated grave that the ancient burial stones and placement had provided later groups (perhaps pre-modern Bedouin, for example), with an opportunity to easily bury their dead. It is still possible that these shallower burials might also be ancient. This is not unprecedented around Israel, where such a small country necessitates varied populations making use of already existing areas designated for burial in different periods. These

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issues: Use and reuse of already established graves and varying explanations for east-west burials (even in antiquity) are important in the investigation of Tomb#1000.

V. Tomb #1000

For lack of a better description we began in 2001 to call the structure/building denominated by De Vaux as “Point B” as a “mausoleum-like” building although it is not similar to the more ornate mausoleums of Jerusalem. Located in the eastern most edge of the Middle Finger of the Main Cemetery, (Figure V) it was originally exposed by De Vaux on November 29, 1951. We did not know whether to count it in our numbering of the graves in the cemetery 2001 because the secondary burial of the two women did not constitute a real “Tomb”. The building may have served to both protect the body and more often allowed for mourners to come and sit and contemplate the person buried within. The discovery of 140 Second Temple pottery shards inside of the building in 2001 indicated that meals may have been taken inside inside of the building. This practice is similar to the activity found in multi-burial, buildings with built in triclinia generally called: “mourning enclosures”. Since the structure is not a multiple tomb grave site, has no associated burial caves, and no indication of “theater-like” benches” it should be denominated a non-elaborate, “mausoleum-like” building in poor condition that is very uniquely located (both at Qumran and in the cemetery). The discovery of the pieces of the skeletons of two women inside of the building and at almost the same depth (20 cm) as the pottery may indicate that the women were inside of the building when perhaps the structure collapsed upon them (during one of the different seismic events associated with the region). Since the women’s remains are dated to the latter part of the first century BCE, they may have been caught in the

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27 Ibid., “New Data”, p. 151, note 58. Carbon 14 testing was done by A. J. T. Jull at the NSF Arizona AMS Laboratory, University of Arizona. The results are as follows: Date no.= AA-44498; d13C = -19.1 per mil; Frac. modern = 0.7720+-0.0047; Radiocarbon age = 2079+-49; Calibrated age = 170-40 BC (1 sigma, 68.3%
31 BCE earthquake noted by many writers and thought to have been associated with the demise of one occupation level at Qumran.

Another solution to the presence of the women’s skeletons inside of the building may be that they were placed there later (in a secondary burial location). This can mean either secondary burial in antiquity or in a pre-modern context. Although no other graves are located (it was GPR surveyed) on top of the hill where Tomb #1000 is located, a secondary burial of this sort may have necessitated movement of the skeletons from a grave down below. This could have been done by illegal excavations or during reburial of another individual in a redug grave in antiquity or in a pre-modern context. Just over 12 meters below Tomb #1000 is an excavated grave, #1006, and of the 27 graves located within 25 meters there are a good variety of east-west, northeast-southwest and north-south burials as well two other excavated graves, #977 and #978 that may have been used and reused (from which the bones may have been disinterred).

This mausoleum-like building has few exact parallels but can be compared to later structures at Bet Shearim in Galilee, the Mount of Olives and in certain burial caves at Sanhedrya in Jerusalem. Comparisons can be made to other burials found in Israel and not necessarily to “mourning enclosures.” As noted above, Tomb #1000 building is a singular burial (not multiple burials as in mourning enclosures cited), it is not built over a burial cave, does not have a courtyard, has no sign of benches, and the Beit Shearim parallels are clearly third century CE a little late (and too “Rabbinic”) to compare to our Tomb #1000 building. A close parallel is called by the archaeologist V. Tsaferis “a mausoleum” (with a single skeleton and one vessel by the foot) and it also had an E-W orientation with low walls and was discovered at the

confidence): 350-320 BC (1.9% of total probability, 2 sigma 95.4%); 210-30 BC (93.5% of total probability, 2 sigma 95.4%).

cemetery of Ptolemais-Hellenistic/Roman period Akko in the 1970s. We would like to suggest that just as the entrance in the Akko mausoleum parallel has an entrance to the northeast, so too, the building around Tomb #1000 was entered from the northeast. This may also have allowed for the direction of the rising sun over the mountains. Entrance from the north that was earlier suggested by a missing stone would be difficult to imagine given the topography. The parallel in the Dead Sea area with a similar, open air structure in the Jericho cemetery provides some context, but the comparison to this is poor as well. Since there is nothing else similar in the rest of the 1212 other graves (or in any of the other Dead Sea cemeteries as well), it is certainly unique. The pottery found buried in the structure were from cooking pots, dishes, and storage jars from the site and indicate that this was a place where people from the Qumran settlement may have come to share ritual meals associated with the status of the person among family, followers or friends. In short it is dissimilar to any other burial site on the Dead Sea and this structure is clearly associated to the Qumran site by the number and variety of different vessels.

The subsidence from erosion has sloped the outer sides of the building (north and south). No roofing structure or stones were found in situ raising the possibility that the structure may or may not have had a roof (or these materials may have been carried off). What remains is only the outer line of the walls of a rectangular building in the highest point of the main cemetery and is certainly unprecedented in and outside of the Qumran site. Although it was originally described in 2001 with the dimensions of 4.50 x 5.05 m, in fact, the 2002 excavations demonstrated that it was probably larger. The placement of the skeleton in nearly the exact

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center of a rectangular 4.50 m x 6.05 m structure (see Figure V). The building may have been used in different periods since no capstones were found for the main burial.

We do not know for sure, but it is possible that there is a connection between Tomb #978 and #1000. (see Figure III) The existence of a zinc “coffin” in Tomb #978 in close proximity to Tomb #1000 might indicate that someone had had a body transported to be located near the Tomb #1000.\textsuperscript{32} Since there is no other apparent reason for the zinc “coffin” to be buried there and since it is in almost exact alignment with the building, there may be a connection between the two. The zinc is an indicator that whoever was buried in Tomb #978 may have gone to great expense to have their body transported to this particular spot. Disinterment for such purposes as re-burying in the Land of Israel and into a place of purity and distinction may have been justified reasons for the move. \textsuperscript{33}

VI. The Discovery of Tomb #1000

Two items need to be noted:

- The grave was not intact when we finally opened it in 2002. It is to be remembered that we worked the entire floor of the building (down 20 cm) in 2001 and removed a variety of stones and debris that were located inside of the building. It is clear that the tomb itself was seriously disturbed either in antiquity or more recently. This is important because it is possible that the mausoleum had been used and reused in antiquity, perhaps for burial of a prominent individual or leader, and then burial of another individual or leader in another period. We were definitely part of the disturbance in the building. We ended up excavating


\textsuperscript{33} PT Moed Katan 2.4, BT Sandhedrin 46 b, Rashi’s comments there on “m’komo tahor.” See the article by J. Segal, “Disinterment”, Rabbinical Assembly Proceedings, 31 (1967), pp. 195-208.
the structure in 2002 four times (July 18th, July 28th 2x and July 29th) and no capstones were found. In Tomb #1000, footstones and a headstone are also only partially attested, in an otherwise well-constructed stone encased tomb, pointing to the conclusion that the grave had been disturbed.

- The skeleton was not complete. This may indicate that the grave was disturbed in antiquity or more recently, but combined with the fact that the grave itself was not intact it indicates that we were not the first to discover the structure.

The skeleton was positioned in the grave with the head due east with the skeleton’s head facing the south. There were some stones protecting the head and the feet (head and footstones) but not complete. The left side of the skeleton was almost totally intact and the removal of the bones was systematically done from west to east. The arms were extended along the body. The pelvis was intact (in the tomb) when it was discovered and both leg femurs were accounted for. The removal of all bones was photographed and videotaped from start to finish and all bones that were removed were immediately placed in boxes and transported to Kibbutz Kalia where Yossi Nagar (IAA) gave us the preliminary reading of the bones. After a preliminary reading, the bones were reburied at Qumran and only teeth and the jawbone was available for C14 and other tests. Dr. Nagar concluded that it was a male between 35-45 years old. The cooking pot that was discovered on top of the left foot of the skeleton is significant. The fact that the cooking pot is similar to those from the settlement (and found in an almost closed context of the tomb) is significant. Others will write on the type of cooking pot, the distinctive puncture mark in the side.

34 The first attempt to begin re-excavating this tomb began on our first day of excavations at the site, July 18th. We re-GPRed the building before beginning the excavation and discovered that approximately 1.8 meters below the surface there was an “anomaly”. On the basis of this initial reading we assumed there was something buried in the building but could not tell if it was a burial or not. We made three different attempts to excavate this Tomb during the 2002 season, each time getting within centimeters of the grave until we reached it on Monday morning July 29, 2002. On Sunday, July 28th we reached 1 meter (and then were forced to fill the excavation in) and then reached...
of the pot (near the handle) and to the dating in the Second Temple Period. It is important to note that it is not unprecedented to find pottery in the graves of Qumran. De Vaux had already pointed out fragments of a Qumran jar in his Tomb #14, a handle in his Tomb #15, and 23 shards of a large jar in his Tomb #27, three pieces of a pottery in his Tomb #30 in addition to the lamp found in his Tomb #26. This cooking pot in our Tomb #1000 was found on top of the left foot of the skeleton. N. Avigad has suggested that the cooking pots were placed in a tomb as containers for purification water and the fact the cooking pot was apparently purposely perforated near the upper body of the vessel may be an important comparison for other vessels at Qumran and Jerusalem. The existence of similarly punctured cooking pots found in excavations elsewhere may provide greater light into the question of the use of a cooking pot in burial sites. Neutron activation could also be done on the pottery found in the Tomb #1000 building and from the grave to ultimately link it directly to the pottery of Qumran. J. Gunneweg’s database will provide an important comparison for understanding when this Tomb was in use and if the vessel was manufactured at Qumran or elsewhere. In the meantime, the skeleton may yet yield more results if a comparison with last year’s bones can be done. A careful C14 and DNA analysis on the teeth of the single male skeleton found buried in Tomb #1000 needs to be done. The teeth from the two women discovered in the mausoleum-like structure in 2001 yielded enough organic matter for C14 testing so perhaps DNA may also be extracted from remaining teeth. If a crosstyped DNA comparison study of the (2002) man’s teeth can be done with the (2001) women’s DNA we might be able to determine if the women

1.25 meters and revealed the circle of rocks that ultimately defined the grave (before being asked to fill in the excavation site).


were genetically linked to the man. The fact that the women were 25-35 years old and over 50 years old and the man is 35-45 may put them in the same family and explain their presence in the building and in the cemetery. In any case, further study is warranted using new DNA techniques. These studies would add another piece to our understanding of the use of the building and the presence of the women and the man in the main cemetery of Qumran.