ACKNOWLEDGMENTS

The archaeological expedition described in this volume—'Surveys and Excavations of Caves in the Northern Judean Desert—1993' ('Operation Scroll'; *CNJD*)—is part of the Israel Antiquities Authority (IAA) multi-facted program relating to the Dead Sea Scrolls on during the last decade of the twentieth century. It consisted of three main undertakings: (1) the recently completed scientific publication of the scrolls discovered to date; (2) the conservation of these scrolls in the laboratories of the Israel Antiquities Authority; and (3) the campaign described in this volume, which includes comprehensive and archaeological surveys and excavations in the northern Judean Desert for the purpose of discovering additional scrolls and other finds.

After a long time in planning, was the project submitted to the then Minister of Education and Culture, Mrs. Shulamit Aloni and to Civil Administration of Judea and Samaria, as part of Israel Antiquities Authority's and the Staff Officer of Archaeology's long-term programing 1993. This program took place a number of months prior to the interim agreement between Israel and the Palestinians Authority (1993). Carrying out this large-scale archaeological enterprise, so close to the first Oslo Accords, aroused criticism from certain political and academic quarters; there were even those who viewed it as an attempt at opportunism in light of the anticipated evacuation of Jericho. There is no basis whatsoever for these contentions.

The campaign was organized and carried out by the Israel Antiquities Authority headed by its then director general, Amir Drori, and by the Unit of the Staff Officer of Archaeology of the Civil Administration in Judea and Samaria, headed by Dr. Yitzhak Magen, and assisted by Hananya Hizmi. The project began on November 15, 1993 and continued for about two months. Participating in it were approximately 50 archaeologists and 100 team members, among them surveyors, photographers, conservators, pottery restorers, administrative staff, volunteers and about 170 laborers. It should be mentioned that archaeologists from other institutions, who had worked in the Judean Desert prior to the project, were invited to take part, and some accepted the challenge. The project was made possible by a financial contribution provided by a benefactor who prefers to remain anonymous.

The surveys were performed along most of the eastern cliffs of the Judean and Ramallah anticlines, in the Judean Desert and Jordan Valley, from Wadi ed-Daliya in the north to Naḥal Dragot in the south (see the pocket-map in part 1). This area was divided into regions, to each of which was assigned a senior archaeologist with a professional staff at his disposal. The archaeologist was mandated to survey the region and excavate the caves and sites discovered in it. The fieldwork was carried out from dawn until dusk and sometimes even continued into the night. The archaeologists-in-charge, the field archaeologists , and all the staff members met daily at the expedition camp near Qumran in order to update the expedition directors and to plan their activities for the following day.

Each survey or excavation received its own permit. It was decided that the Scrolls Advisory Committee to the director of IAA (consisting Professor Shemaryahu Talmon, Professor Jonas Greenfield, Magen Broshi and Professor

Emmanuel Tov) would determine who was to be entrusted with the publication, should any scrolls be discovered.

During the expedition, approximately 650 caves and sites were surveyed and some 70 of them were excavated. In extension, large-scale excavations continuing until 2002 were also conducted at Qumran, under the direction of Dr. Yitzhak Magen and Yuval Peleg. The results of these excavations will be published separately.

In addition to the scientific importance of the project, a great service has been rendered to the archaeological heritage of this country, since it forestalled the antiquities robbery that had been plundering the region for years. There is no doubt that the findings of the project have greatly enriched our knowledge of the region and its past.

I wish to convey my apprecation to all the employees of the Israel Antiquities Authority, the Unit of the Staff Officer of Archaeology in Judea and Samaria, the Israel Defense Forces, and the Civil Administration of Judea and Samaria, as well as all of the archaeologists who took part in the project. Special thanks to Giora Biran, then deputy director general of the IAA, who headed the administrative staff, responsible for security and safety matters; The surveyors, photographers and laborers, as well as volunteers from the Israel Center for Cave Research (*ICRC*) in ʻOfra. I am especially gratefull to the following people: Yaʻakov Amiel, Hananya Hizmi, Hava Katz, Rachel Avraham and Gavri Banai; Yoav Tzionit, Orna Sirkis, Caroline Fellous and Orna Nagar-Hilman, who coordinated the preliminary preparation of the manuscripts; Shlomi Ammami the photographer; Pnina Shor who coordinated the processing of the artifacts upon completion of the fieldwork; and finally, the staff of the publications department of the Israel Antiquities Authority, and especially Lior Wexler, who so assiduously edited this volume, and the former and current directors of the publication department—Ayala Sussmann and Dr. Zvi Gal.

My thanks to them all
Amir Drori
Director-General of the Israel Antiquities Authority, 1991–2001

EDITOR'S FOREWORD

Volume 41 of *'Atiqot* is dedicated to 'Survey and Excavations of Caves in the Northern Judean Desert—1993' (*CNJD*) project along most of the northern part of the fault escarpment near the Dead Sea. This volume joins the 1998 publication of the excavation in Cave III/13 by Tamar Schick, *The Cave of the Warrior: A Fourth Millennium Burial in the Judean Desert* (IAA Reports 5). Further reports will appear there in the future on the excavations conducted in Cave V/38 and at Qumran.

The volume is divided into parts, by language: Part 1 is in Hebrew and Part 2 in English. Within these two parts the results of the surveys and excavations are grouped according to the regions surveyed, which are designated by the Roman numerals I–XV; the regions are arranged from north to south and from west to east (see map in the inside cover of part 1). A location map precedes the review of each region, followed by an article summarizing the findings of the survey (including the results of limited excavations and studies accompanying these surveys and excavations) and excavation reports and additional research related to them.

The survey articles appear almost in their entirety in both the Hebrew and English sections, with the illustrations (photographs, plans and the drawings of finds) presented only in part 1. The excavation reports and related studies with their accompaning illustations on the other hand, appear in the language in which they were written. English abstracts of the Hebrew articles are also included in part 2. Studies concerning textiles, and animal bones are both grouped into a summary in an article appearing at the end of part 2, while the finds from each cave are dealt with on an individual basis. Part 2 also includes an article summarizing the numismatic finds and their significance. Coin catalogues appear throughout the volume's articles, alongside the description of the caves and the finds uncovered in them; the coins are numbered sequentially within each article.

The caves and other sites that were discovered were presented, as the survey regions, from north to south and from west to east, and are numbered using Arabic numerals (e.g., Cave VII/2: Region VII, Cave No. 2). Alongside the sequence number of the site is its geomorphologic designation: cave, rock shelter, niche, notch or other (some of the sites are man-made). The official name of the cave, in the event that it exists on the maps of the Survey of Israel or in the *Register of Monuments and Archaeological Sites*, or another name (given to it during this project or in previous publications) appears in quotation marks after the sequence number. In the site description we also tried to provide a description of its location; whenever possible there are an accompanying map and photographs.

The excavation reports and the articles dealing with the finds appear under the names of their authors. When the surveyor/excavator/processor of the artifacts was not an active partner in preparing the article for publication, the report was prepared by the Unit of the Archaeological Staff Officer of Judea and Samaria, relying on the files maintained in their archives. Regions XII (initially surveyed by Fawzi Ibrahim and replaced by Yuval Baruch) and XV (directed by Nimrod Negev) are not included in this volume owing to reasons

beyond the control of the editorial board. Nevertheless, a number of excavations conducted with these two regions are included.

The index of caves at the end of Part 1 includes the numbers of the caves as they are published here, their numbering during the survey and the excavation, and any additional names they may have.

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My thanks and appreciation are extended to all those who were involved in preparing this publication, but first and foremost to Ayala Sussmann, former director of the Publications Department, who has provided support, suggestions and helpful comments, has enlightened me and stood by me over the years. I am also grateful to Zvi Gal, the current director of publications, for his support and assistance during the final phases of the publication; to Rafael Greenberg who advised in formulating the manner of publication and editing; to Ann Roshwalb-Hurowitz, who invested so much in the English language articles as well as in the entire publication; to Ayelet Gilboa and Lilly Gershuny for editing s articles in part 2; to Yossi Kuris who generously of his time in checking the translitions the names, especially the Arabic; to Don Glick for the meticulous translation and to the late Inna Pommerantz, who started that work; to Natalia Zak for her tireless efforts in preparing the maps and plans, provided solutions and proposed various graphic ideas; to Rachel Kudish-Vashdi for her assistance during the initial phases of the publication's design and for most of the layout in the English part of the volume; to Margalit Hayosh who invested so much time and energy in the design and production of the volume and in finding solutions to the challenges that this publication presented; to Hagar Maimon and Ann Abuhav who also took part in the burden of the layout; to Lori Lender who contributed from her vast experience to the final layout; and to my other colleagues from the department who were so helpful—Aviva Schwarzfeld, Daphna Tuval-Marx and Shari Satran.

Special thanks must be paid to the Archaeological Staff Officer of Judea and Samaria, Dr. Yitzhak Magen, and and his assistance, primarily, Hananya Hizmi and Yoav Zionit. I am grateful to the following people: Orna Sirkis, Orna Nagar-Hilman and Caroline Fellous who were there at the beginning of the process, wrote some of the short articles and processed the finds and the initial plans; Yoav Zionit, for completing their work and standing by me in the challenge presented by such a complicated publication; and Hananya Hizmi for his support and encouragment. This publication is also indebted to Shlomi Ammami and Roni Ben-Haim for the photography; to Alona Ruban, Miriam Manukian and Yanna Bar-Rashi for the drawings; to Mendal Kahan, Yevgeny Marmon and Tanya Slotzkaya for the surveying; and to Gershon Oron, Arieh Shachar, Erez Nachman, Israel Tsabari and Hanan Sarig for the supervision.

I wish to express my gratitude to the many fine people who processed the finds: Pnina Shor, who coordinated the treatment of the finds from this entire enterprise; Michal Ben-Gal and Adrienne Varnai for acceding to my many requests; Roni Gat and Joseph Bukengoltz (pottery restoration); Daniel Feinzinger, Esther Stark and Yula Rodman (drawing of finds); Tsila Sagiv, Clara Amit and Mariana Salzberger (studio photography); Michael Miles (drawing of glass finds); Leonid Zeiger and Michael Smilansky (drawing of flint implements); Ella Altmark, Victoria Ladizhinskaya, Raisa Vinitsky, Mary Levin and Olga Lipman (cleaning and conservation of metal finds); Olga Negnevitsky and Mireia Elper (cleaning and conservation of organic finds); and Oded Raviv, Victoria Ladizhinskaya and Olga Lipman, who assisted in the fieldwork.

I would also like to express my deep appreciation to Baruch Pertzman and Tali Axelrod of the Sorvey of Israel for the hours they dedicated to the preparation of the pocket-map.

Bless you all
Lior Wexler
Volume Editor

'*Atiqot* XLI, Part 2, 2002

PREFACE

LIOR WEXLER

The goal of the survey and excavation project described in this volume was the locating of additional scrolls in the northern Judean Desert caves where most of the Dead Sea scrolls had been discovered between 1947 and 1956; only a few were uncovered south of the area where this project was carried out. And indeed, within the framework of this undertaking, a number of scrolls, published in their entirety (Charlesworth et al. 2000), as well as several blank scrolls (without text), were recovered from Caves V/49, V/50(?) and V/59 in Region V (Aronshtam, this volume, part 1; Cave V/49 see Eisenberg, this volume, part 1) and X/28, X/34 and X/47 in Region X (Itah, Kam and Ben Haim, this volume, part 1).

One of the important contributions of this project is the mapping of the caves according to archaeological periods. Although this was done in previous surveys, (regional or periodic) the pinpointing was incomplete or too imprecise to enable locating the surveyed/excavated caves from the publication. Human and archaeological remains within the region, primarily in caves, date to the Pre-pottery Neolithic, Pottery Neolithic, the Chalcolithic periods, the Bronze Ages (mainly Early and Middle Bronze), Iron Age (Primarily Iron II), and the Persian, Roman (mainly Early Roman), Byzantine, Early and Late Islamic and Mamluk periods. Other remains dating to these periods have previously been uncovered: well known settlements existed in some periods (e.g. Jericho, 'En Gedi), in others, the area served as the hinterland place of refuge.

GEOGRAPHY AND GEOLOGY

The survey was conducted mainly along the fault cliff and to a smaller extent along the wadi escarpments in the desert plateau and the Jordan, from ın the northern Judean Desert, from the slopes of Deir Quruntul to Naḥal Tur. In this region the Jordan River descends from an elevation of 300 m below sea level to the level of the Dead Sea, *c*. 400 m below sea level. To the west, the Samaria and Judean Hills rise to a height of 700–1000 m (see Marcus 1986; 1992).

The fault escarpment is one of the longitudinal fractures of the Syrian–African Rift Valley and its walls, which are mainly exposed at surface level, and are located on either side of the Jordan River and Dead Sea. The fault escarpment and its secondary fractures were formed in the Cenozoic Era after folds developed at the end of the Mesozoic Era (see Horowitz 1987:168, 171; for its formation see Ilan 1992; Balitsky 2000 also; see Mazor 1980:261–270 for evidence of the formation of an oceanic ridge in the middle of the Syrian–African Rift Valley within Israel).

The survey regions are concentrated along the lower reaches of the Ramallah and Ḥebron anticlines (Marcus 1992:15), where the walls of the fault cliff generally face east–southeast in the southern section (Survey Regions VII–XV) and northeast in the northern section (Survey Regions I–VI). The Ḥebron anticline and the southern fringes of the Ramallah anticline are asymmetric. Their western edges are quite precipitous, whereas their eastern border is terraced. Each terrace is essentially a vertical wall of rock; thus in some of the survey regions more than one cliff was inspected (e.g. Site XIV/2, which extends over four terraces whose cliff walls were used as dwellings). Some of the terraces occur together with a secondary fault

(e.g. the Mar Saba anticline). The secondary fractures, which are mainly transversal, formed horst and graben formations (the most notable of them being Masada). These are manifested by walls of different elevations rising alongside each other. Hence the cliff wall that was surveyed is not identical in the various survey regions, nor is it of uniform height even within the same survey region.

Two rock units are exposed in the survey regions: the Judean Formation and the younger, Mount Scopus Formation, both sedimentary rock. The survey focused mainly on the caves situated in the hard dolomite cliffs of the Judean Formation that were stratified into thick layers during the Cenomanian Era. Softer layers of chalk and clay occur between the terrace walls, among them chalk layers deposited in the Senonian Era.

This layering provides the cliffs of the secondary fractures with a topography influenced by the nature of the rock. Extending along the foot of the cliff is a hilly region consisting mainly of Lisan marl, (from Regions I to X) that was stratified up until the last pluvial, during a period when the region was covered by a large lake (Ravikovitz 1981: 220). Owing to the soft nature of the rock, numerous deep and shallow channels cut through the hilly region. Some of the wilderness landscape is quite jagged, forming towers, mushrooms and palaces (as in the area of Faʂa'el). The Lisan marl is quite saliferous, although the northern part is less salty than its southern section, which lies along the Dead Sea (Ravikovitz 1981:221), an important fact to be taken into consideration when planning settlements. A number of caves were discovered in the marl region during this project, such as the cave at map ref. 19340/12765 in Region XIV and Caves XIV/3 and XIV/4.

Topographically the Judean Desert is divided into four main longitudinal strips. With the exception of Region II, which falls within the fringes of the desert plateau (the second strip from the west), all the survey regions lie within the two eastern strips. This is probably due to the proximity of the eastern cliffs to easily cultivated soil and more plentiful sources of water (see below). The fertile ground is concentrated in two strips: the desert frontier, where it is possible to raise certain plants without irrigation or utilize the land for pasturage, and along the plain at the foot of the cliffs. This level area is comprised of two main types of soil. Alluvium that was conveyed by the rivers and deposited at their estuaries (Danin 1983) is concentrated in the west of the plain. The soil in the eastern part of the plain derives from the weathering of the Lisan marl. It is salty and fine-grained (see Ravikovitz 1981:232 regarding the salination processes and pp. 402–403 regarding the transportation processes of the Lisan marl and the formation of saline soils). Such soil is unfit for cultivation since it must be rinsed with large quantities of water on a year-round basis.

SOURCES OF WATER

The wadis in the region descend from west to east, from the watershed to the Syrian–African Rift Valley. Most are seasonal streams forming erosion fans along the valley and the shore of the Dead Sea. Since the underlying strata of rock along most of the western part of the Judean Desert is Senonian chalk, the rainfall turns to surface run-off that manifests itself in floods in the wadis during rainy periods and as ground water that flows through the aquifer, erupting at points where fissures or fractures sever the aquifer, as the two natural sources of water in the region are water holes and springs. Water holes are formed in gullies and fissures and refill each year. The deeper and more shaded the water holes are, the better protected they are from rapid evaporation. These water holes constituted a source of water throughout antiquity, therefore it is possible to find hewn roads that descend to them. The springs flow from points where the aquifer (Flexer 1971; Spanier 1993) is exposed in the rock of the Mount Scopus Formation and mainly in the layers of the Judean Formation (output is frequently supplemented with underground

water stored in the porous sandstone buried beneath the Judean Formation Raz 1979:9). Numerous springs flow in the Aminadav–Tsfit Formation (‘Ein ‘Auja, ‘Enot Boqeq and springs that are located beyond the area of this project), in the Vradim–Bi‘ana Formation (‘En Shusha, ‘En ed-Duyuk, 'Ein Nu‘eima, ‘Ein Fara, ‘Ein Qelt and ‘Ein el-Fawwar) and in other rock formations (‘Ein Samar, ‘Enot Qané, and ‘Enot Zukim). There are springs with a very large output of water (in excess of 3 million cu. m per year: ‘Ein el-Ghuweir, ‘Ein ‘Auja, ‘Ein ed-Duyuk, ‘Ein Nu‘eima and ‘Enot Zukim; Spanier 1993) and there are those that discharge smaller amounts or are given to fluctuations in their flow (such as ‘Ein Fara and ‘Ein el-Fawwar).

In addition to these two natural sources of water, cisterns and wells were dug and tunnel wells (fugarot) were installed. Most of the cisterns are located in the desert plateau; Raz (1979:9) distinguishes between cisterns filled with surface run-off and cisterns located at the bottom of gullies that cut into an aquifer or are fed by the water from the wadi. Thus, in the surveyed area, few water cisterns were located in Regions II and XI (e.g. Sites II/13, II/48, XI/22) and only a few pools were found inside or alongside caves (e.g. II/49 and VI/52), a phenomenon that is known from refuge caves such as the Cave of the Pool, the cave in Wadi Murabba‘at and ‘Me‘arat HaMiqveh’ in Naḥal Harduf. The fugarot—tunnel wells that were produced by digging a moderately inclined channel the length of an aquifer, which in turn would raise the underground water—were probably installed in the third century CE near Faṣa’el and ‘Ein Hajla (Porath 1970; 1985:20–24; *HA* 1973).

There is considerable evidence of the depletion of the ground water in the Judean Desert during geological, archaeological and historical periods. This is manifested in the various water systems exposed on the surface level (e.g. Porath 1985:32, 45) and agricultural systems that were established during the Roman period and afterwards, including water cisterns and wells, agricultural terraces, some of which were irrigated with water from nearby springs or with water brought from afar via an aqueduct, regulating pools and reservoirs (Porath 1985; Netzer 1989; see below). An earlier decrease in the supply of ground water is evident from the travertine exposed in spots where there is no spring and where no traces of ancient agriculture were found (see Raz 1979:10 for an explanation of the phenomenon and suggestions for its causes). A phenomenon relating to the sources of water is the salinization of the ground water caused by its prolonged contact with layers of rock and the absorption of salts from them (Raz 1979:10).

The water sources were exploited throughout antiquity. However, most of the preserved systems that conveyed water to settlements or to agricultural areas are from the Roman period and afterwards: the water systems leading to Hyrcania (Meshel 1984(b); Patrich 1989(a); Feldman 1974); the water systems around Qumran and the diversion of the water from the wadi (Masterman 1903; Ilan and Amit 1982; 1989); the ancient water systems in the Jericho and ‘En Gedi regions (Porath 1985; 1986; for water systems in the Jericho Valley see also Netzer 1989); Cypros (Meshel and Amit 1979; 1989); and the diversion of the Wadi el-Mefger flood waters (Meshel 1991). Studies on ancient agriculture in the desert frontier are therefore associated with this (Stager 1975; 1976; Porath 1984; 1985; 1986; 1990).

FLORA

Due to the formation and location of the Judean Desert, the precipitation regime and climate differ from those of the mountains to the west or the plateau to the east. Thus vegetation in the region compromises a steppe forest, frontier scrub, Irano–Turanian vegetation and desertic vegetation (Danin 1979:13; see also Danin 1983). Among the frontier scrub, for example on the terraces of Region II, are various bushes that predominate (such as *Sarcopoterium spinosum [L.] sp.*) along with herbs and deep

tuber vegetation (such as *Leontice leontopetalum L.* and *golden rod*). In addition, there are numerous species whose origins are in the desertic vegetation, such as *Artemisia herba-alba Asso.* as well as those originally indigenous to the Mediterranean region, such as *Pistécia palaesténa Boiss.* and *Ceratonia siléqua L.* which grow mainly in cracks in the rocky surfaces (Danin 1979:14, see there the different varieties of frontier scrub). Deep tuber geophytes and endemic species such as the short-tooth Phlomis also grow in this region. The various parts of the fault cliff, the directions they face and the degree of soil salinity are all factors in determining which group of vegetation grows there. According to Danin (1979:15) the salinity is a "species sieve" which determines the degree of vegetation density in the field. However, the flora of the cliffs is amongst the most diverse in the area because crannies, which have different conditions, have formed in the cliff: in hard types of rock where the water flows down into cracks, the growth of thickets and scrub, such as *Rubia tenuifolia D'Urv, Férula communis L.* and *Cyclamen persicum* Mill is encouraged; and the southern-facing portions of the cliff are populated by plants that thrive in heat and water. And there are also a few species that are indigenous to the region (date palm, pomegranate, carob, jujoba and Egyptian balsam) which were found in Cave V/49 (Melamed, this volume, part 2).

THE ROADS

Much has already been written about the roads, most of the documentation, mainly ancient maps and milestones with inscriptions, is from the Roman period onwards (Isaac and Roll 1982). According to Roll (1976:39), two main arteries, constructed in the Early Roman period, pass through the surveyed region. One descends from Jerusalem by way of Ma'aleh Adummim to Jericho and continues on to Heshbon. The other road passed from Jerusalem and the Judean Mountains, via Ma'aleh 'En Gedi, to the shore of the Dead Sea (see Patrich 1996(b):10–12) Secondary routes branched off from it (see Amit 1991 regarding another segment of this road); Patrich assumes that some of the secondary routes resulted from the establishment of monasteries in the Byzantine period. The side roads have been surveyed and documented in a number of other studies: track Abu George and Abu Hindi (Ziv 1984); the road from Mikhmash to Jericho (Mazar, Amit and Ilan 1984); the road from the Temple Mount to Jericho (Amit, Ilan and Mazar 1983), and the routes from Jerusalem to Transjordan (Piccirillo 1987 and Wilkinson 1975).

HISTORY OF RESEARCH

Beginning in the nineteenth century, this region, like other parts of the Land of Israel, was documented geographically, historically and archaeologically by various explorers and researchers in an enterprise which continued well into the twentieth century: Robinson (1841; 1860), Robinson and Smith (1867), Conder and Kitchener (1881–1882), Palmer (1881), Shalem (1945), Braslavi (1951; 1956), Glueck (1953; 1954), Farmer (1957), Guérin (1982–1987) and also the combined expedition of the École Biblique et Archéologique Française de Jérusalem, the American School of Archaeology in Jerusalem and the Department of Antiquities of the Government of Jordan (Baillet, Milik and de Vaux 1962), which methodically excavated and documented a number of important sites (see below). Beginning in the twentieth century, more focused archaeological surveys were undertaken: in the region of 'En Gedi under the direction of Aharoni (1958); throughout the Judean Desert as part of the emergency survey directed by Bar-Adon (1962); Marcus' very extensive surveys throughout the Judean Desert which encompassed landscapes, recreational areas, springs, etc.; in the region of Herodian directed by Hirschfeld (1985), who went on to survey other regions (Hirschfeld 1987; 1992; 1993); the upper portion of Wadi

el-Makkuk in the Samarian Desert (Goldfus and Golani 1993); the Beka'at Hyrcania area by Patrich (1994(b)) who also surveyed other areas, mostly dealing with monasticism and Christianity in the Byzantine period (although many of his surveys have not been published, some of the sites were studied or excavated and have been published in their entirety); and the Qalya and Wadi el-Qelt regions surveyed by Sion (1993; 1995).

Together with the excavation sites, archaeological research undertaken in the region as in the rest of the country, has focused on a number of specific subjects. At the end of the nineteenth century and the beginning of the twentieth centuries scholars were engaged with the validation of the biblical record and the identification of biblical sites. They therefore turned their attention to identifying and uncovering Jericho (Tell es-Sultan). The first excavations at Jericho were carried out on behalf of the Palestine Exploration Society, under the direction of Charles Warren in 1868 (see Kenyon 1992:731 ff. and list of publications therein). The Austro–German expedition, headed by Sellin and Watzinger, excavated the tell between 1908 and 1911 (Sellin and Watzinger 1913). The extensive excavations directed by Kenyon, beginning in 1936, were conducted on behalf of the British School of Archaeology in Jerusalem and the British Academy, with funding provided by *ASOR*. The reports were published in a series of volumes (Kenyon 1957; 1960; 1967; 1981) and in a number of books (e.g., Kenyon 1960) from which is now drawn most of the information known to us about the site.

Further excavations at the tell and in its immediate vicinity were conducted by Garstang (who published his first reports in *AAA*; Garstang 1948). The results of his excavation, and especially the finds, have been re-examined following the exposure of other sites and finds relevant to those from Jericho. FitzGerald (1936), followed some twenty years later by Pritchard (1958), also excavated at Jericho. Many scholars have researched Tell Jericho and its sites. Some have studied it in general (Meshel 1973; Tsafrir 1974; Bartlett 1982; Avramski 1983(a, b)), while others have focused on a specific site in Jericho or its environs, such as the synagogue (Netzer, Kalman and Loris 1999; Eshel 1983; Baramki and Avi-Yonah 1938; Rapuano 2001 with additional references therein), the cemetery (Kenyon 1953; 1971; Hachlili 1979; 1983; Hachlili and Killebrew 1999) and other smaller sites (Hirschfeld 1983; Magen 1983(a); [for the palaces uncovered by Netzer, see below]). Bar-Nathan (1996) prepared a related study that examines the unique finds of the region and distinguishes between artifacts from the time of the Hasmonean dynasty and those dating to Herod's dynasty.

A second topic which aroused interest is the discovery of the Dead Sea scrolls in 1947. After these appeared on the antiquities market, archaeologists conducted excavations at Qumran and its adjacent caves in order to locate additional finds associated with the scrolls. The first excavations at the site, which to a great extent diverted interest from the biblical sites to those of the Second Temple period, began under the auspices of a combined expedition (see above; de Vaux 1953; 1956; 1967; Baillet, Milik and de Vaux 1962; see also Bartlett 1997). Many parts of the site and its surroundings were uncovered (Bar-Adon 1981; Porath 1996; Reich 1997) and various issues regarding its inhabitants were studied (e.g. Magness 1994; 1995; 1998; Hirschfeld 1998; Broshi and Eshel 2000; Yallin and Broshi 2001). In addition, the remains of the Hasmonean fortifications were exposed (Bar-Adon 1981; 1989), as well as the water systems that collected floodwaters from the wadi and conveyed them into the city where a sophisticated distribution system operated (Hidiroglou 2000).

Much has been said and written about the scrolls; this introduction is too brief to survey all that has been done in this field and the ongoing work, which continues to this day. A number of collections have been published commemorating the jubilee anniversary of the

scrolls' discovery: e.g. The Dead Sea Scrolls after Fifty Years (Flint and Vanderkam 1998–1999, with references to previous research therein), Fifty Years of Dead Sea Scrolls Research (Brin and Nitzan 2001); A Light for Jacob (Hoffman and Polak 1997, including a list of publications by J.S. Licht, pp. 7–13 and additional references) and the Discoveries in the Judean Desert series dedicated to publishing the scrolls which comprises some forty volumes that have been published to date according to assemblages (Yadin 1958; Broshi et al. 1992, see prologue containing a history of the discussion; Sussmann and Peled 1993:23–29 and additional references therein).

The discovery of the scrolls gave rise to ancillary topics: the phenomenon of sects during the Second Temple period and afterwards (see general essays in Tsafrir 1982; Schwartz and Spanier 1992; Stern 1993; Spanier 1997; Ariel, this volume, part 2) and the nature of the desert settlement prior to, during and after of the uprising. During the attempt to locate additional scrolls, mainly in caves in the northern part of the Judean Desert (approximately 1000 scrolls were discovered up to 1965), the world of the settlers and the refugees was revealed (on the nature of the refuge caves see Eshel and Amit 1998:8, 13–21). Finds such as sandals (discussed at length in Eshel 1998), combs, vessels and textiles, as well as coins from the time of the Revolt, were uncovered: in three caves in Naḥal Ze'elim (Aharoni 1961(a):27 ff.): the 'Cave of the Skulls', the 'Cave of Arrows' and the 'Cave of the Scrolls', the 'Cave of the Letters' in Naḥal Ḥaver (Aharoni 1961(b); Yadin 1962; 1963; see also Safrai 1996), the 'Cave of Horror' (Aharoni 1962), the caves of Wadi Murabba'at (Benoit, Milik and de Vaux 1961), the 'Cave of the Pool' (Aharoni 1958: 40ff.), the 'Cave of the Treasure' (where a rich Chalcolithic hoard was found, Bar-Adon 1962; 1972; 1980), a cave in Naḥal Harduf; the caves of Ketef Jericho (Jebel Quruntal; Eshel 1988; Frumkin 1988(a, b); Eshel and Zissu, this volume, part 1(a, b)), the 'Cave of the Balsam Oil Juglet' (Patrich and Arubas 1979), the Qumran Caves (Patrich 1993(c)), a cave in Naḥal David (Avigad 1962), caves in the upper parts of the wadis (e.g. Makkuk Cave, see Goldfuss 1985); a-Jai Cave in Naḥal Mikhmash (Patrich 1985; Eshel and Zissu 1999; Ma'arot al-Alilat: Patrich and Rubin 1983) and the 'Ha-Meraglim Caves' (Frumkin 1988(b); Eshel and Zissu, this volume, part 1(a)).

Eshel and Amit (1998:13–14) contend that the caves where the Jews hid during the Bar Kokhba Revolt are concentrated along two parallel geographic lines running in a general north-south direction: along the eastern cliffs of the Judean Desert and on the west, in the upper cliffs of the wadis that descend to the east. The caves in the surveys and excavations described in *'Atiqot* 41 were all revealed along the eastern line of cliffs (except for Region II, located on the cliffs in upper Wadi el-Makkukh, where no other refuge caves were discovered). Eshel and Amit suggest that the large caves and their smaller offshoots were selected as refuges and for the most part are clustered together or are located on opposite sides of the same wadi across from each other. Some of the caves examined in the surveys and excavations containing finds dating to the time of the Bar Kokhba Revolt (or from the time of the revolts) are indeed large and serpentine (e.g., VI/52, VII/1, two adjacent caves V/48 and V/49, the group of caves VIII/6, VIII/9, VIII/10, VIII/28 opening out onto the cliff next to each other, XII/49 and perhaps even the group of caves III/8–11), but some are shallow or simple rock shelters (e.g., II/49, IV/7, IV/17, V/59, VII/3, VIII/29, X/35, X/51, XII/53, all of the elements at Site XIV/2 and all of the caves in Region XI where artifacts were found dating to this period). Furthermore Eshel and Amit (1998: 13–14) state that while the leaders of the revolt and the senior authority sought refuge in caves farther removed from the settlement centers, the farmers and local population sought shelter in caves close to the Samaria and Judean Hills.

As the scrolls cast light on the Second Temple period, its written sources, the composition of

the population and the problems confronting it, and scholars attempted to widen the scope of our knowledge and began to search for and uncover contemporary Second Temple period sites. Among the important sites of this period that should be mentioned are ‘En Gedi (Mazar, Dunayevsky and Dothan 1964; Mazar and Dunayevsky 1964; 1966) and the adjacent wadi where Jewish graves were uncovered (Hadas 1994), a palace complex southwest of Jericho that has been under excavation for a number of years and includes a residential area (Kelso 1950; 1951; Kelso and Baramki 1955), hippodrome, swimming and recreation pools, gymnasium, aqueducts and ritual baths (Netzer 1974; 1978; 1980; 1982; 1984; 1985; 1992; 1995; 1996; 1999; 2001; Netzer, Meshel and Rosen-Ayalon 1978); and the desert fortresses, some of which surmount the city of Jericho and others which overlook the cliffs and the desert frontier (Tsafrir 1975; Meshel 1984(a); 1995; Netzer, Meshel and Rosen-Ayalon 1978:35–57 and a list therein of the fortresses surmounting Jericho; Zertal 1991): Hyrcania (Meshel 1984(b)), ‘En Boqeq (*HA* 1971; Gichon 1970), Alexandrium (Meshel 1989); Tsafrir 1984; Tsafrir and Magen 1984; Amit 1989(a)), Cypros (Netzer 1975), Dok (Amit 1989(b)), and Macherus (Rainey 1971), as well as other fortresses outside the survey region and not relevant here.

A third topic deals with the traces of the Chalcolithic population of the Ghassulian culture, one of whose key sites, Teleilat Ghassul, was exposed on the eastern shore of the Dead Sea, beginning in 1929 (Hennessy 1969; Koeppel 1940; Mallon, Koeppel and Neuville 1934). A number of important and unique sites were revealed in this region, the likes of which have rarely been exposed in Israel: the temple at ‘En Gedi (Ussishkin 1971; 1980) and the ‘Cave of the Treasure’ in Naḥal Mishmar (Bar-Adon 1962; 1972; 1980; Merhav 1993, including a detailed discussion and additional literature therein) as well as cave sites such as Umm Qatfa and Umm Sela (Perrot 1992). The work of Yuval Goren should be mentioned (1987; 1995), devoted to the region's pottery assemblages which he compared petrographically to other Chalcolithic assemblages from the Negev and the Judean Desert.

The beginnings of Christianity and the phenomenon of monasticism, which took shape in the seclusion of the Judean Desert cliffs, were studied by many in the nineteenth century, among them Vailhé (1897; 1898; 1899–1900(a, b)) and Schick (who was specifically interested in monasticism). These topics were further addressed in the 1960s and 1970s by Milik (1961), Meinardus (1965–1966; 1966), Kühnel (1984); and later by Goldfus and Golani (1993), Patrich—whose survey work is mainly devoted to certain monasteries such as St. Sabas (the survey has not yet been published, but some of the sites were studied and published in their entirety, see Patrich 1987; 1988; 1989(b); 1990; 1991; 1993(a, b);1994(a, b); Agur, Arubas and Patrich 1989) and Hirschfeld from the 1990’s onward (1987; 1990; 1992; 1993).

Another important site that has engaged archaeologists is Hisham’s Palace (Khirbet el-Mefjer), which was exposed during a number of excavations directed by Warren in the nineteenth century and Hamilton in the twentieth century. (The first excavation reports were published in 1936 and thereafter in a series of articles in *QDAP*; however final reports and studies appeared in a number of journals and books: Schiller 1976; 1983; Taragan 1997; 1998; Baramki 1940–1942; Hamilton 1959; 1969; Whitcomb 1988). The palace was probably constructed during the second half of the Ummayyad dynasty, by the sons of Abd al-Malik, and was destroyed by the earthquake of 747 CE. (For the numerous statues standing in the niches throughout the area see Taragan 1984; 1991).

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More than 495 cave-sites were surveyed in this project. (Some of the natural hollows were not numbered separately and some were not even examined; see Table 1). Of these, 17 sites are agricultural terraces (II/1 [a cave and an

agricultural plot], II/17, II/45, II/68), cisterns or dry wells (II/13, II/48, VI/42, XI/22), buildings (II/4, II/5, II/43, VI/51, XI/21, XI/22), a kiln (II/64), retaining walls (II/44, and alongside many of the caves and the paths leading to them) and other (XI/21). Thus, 478 caves were surveyed.

There was evidence of human presence in antiquity at approximately 165 cave sites; traces of rock cutting were discerned in 42 caves and the remains of construction were found in 65 caves; building remains together with traces of rock cutting were found in only 17 caves. It is possible that the rock cuttings and construction are recent; however, in 48 of the caves in which either building remains or rock cutting were observed, diagnostic artifacts from ancient periods were also found. Hence, it can reasonably be assumed that the quarrying and/or construction date to these periods. Non-diagnostic finds were also recovered from nine of the caves, which the surveyors/excavators are inclined to attribute to antiquity. Thus the number of caves in which there are remains of quarrying and/or construction from ancient periods totals 56. In 21 of the caves where quarrying and/or construction remains were noted, there were no finds whatsoever (no finds were recovered from such caves located in Region VII), therefore the modifications to the caves may be modern. In Region I, no signs of rock cutting were noted and building remains were found there in one cave only. In Regions IX and XII–XIV, only building remains were apparent in the caves; the reason for this being the kind of rock or the location of the karstic cavities and the degree to which they are accessible. In Region X, no signs of quarrying or construction in the caves were discerned at all, which may be a result of the manner in which the survey and excavations were conducted.

NOTES

[1] In many of the caves there were signs of previous excavation including debris, excavation squares and probes; however, it was impossible to establish who conducted them.

[2] Water cisterns of this kind should be called wells unless referring in certain instances to t'milah.

[3] See Patrich 1988; 1989(a, b); 1990; 1991; 1993(a, b); 1994(a, b).

[4] The Israel Center for Cave Research of the Nature Protection Society also surveyed and mapped numerous caves throughout extensive portions of the desert and the results of their work have appeared in many volumes of *Niqrot Zurim*. All of the publications refer to individual caves (e.g. Frumkin 1988(a, b)) and do not include all the results of the surveys.

[5] This review does not deal with Neolithic Jericho and other contemporary sites because they are essentially no different than the rest of the country and the region, however, it should be noted that Jericho is one of the only sites in the Mediterranean region where modeled skulls and ceramic statues were found (Kenyon 1960; Bar-Yosef 1977:55–57; Hershkovitz 1981; Goren and Segal 1995). Modeled skulls and ceramic statues were also found at 'Ein Ghazal and in Naḥal Ḥemar (although there they were modeled with bitumen; Arensburg and Hershkovitz 1989), not far from the region described in this volume, and in Beisimon and Tel Ramad located very far to the north of this region.

[6] Including the synagogue that was uncovered at Na'aran, on the fringes of Jericho (Magen 1983(b) and references therein).

[7] Numerous scholars have devoted their efforts to certain documents; this however is not the place to fully review the work that has been done in this field.

[8] In this review, which is not intended to study or reinterpret this subject, I do not differentiate between rebellions because, among other reasons, it is not always clear during which rebellion each cave was used.

[9] Many other caves were mapped by the Israel Center for Cave Research. When antiquities were discovered in them, they were turned over to archaeologists.

[10] Some scrolls were purchased from Bedouins at the beginning of the 1970s after it was ascertained they had plundered them from various caves.

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