THE CHALCOLITHIC AND EARLY BRONZE CEMETERIES NEAR 'IRĀQ AL-AMĪR AND THE PRELIMINARY REPORT ON SALVAGE EXCAVATIONS

by

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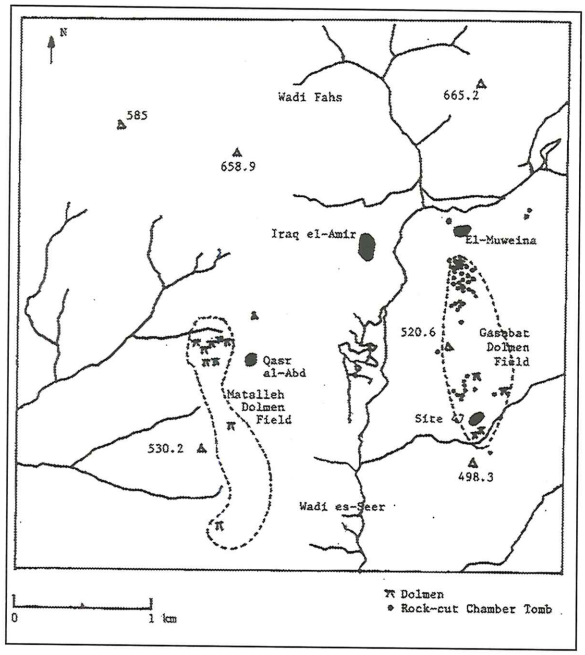
Introduction

Recent archaeological surveys in the region of 'Irāq al-Amīr have revealed two concentrations of dolmen fields on the eastern and western banks of Wādī as-Sayr. In addition, a number of rock-cut chambers were found associated with the eastern dolmen field, which indicates that the rock-cut chambers should be studied in connection with dolmens. To this end, in August 1996, a salvage excavation was carried out as part of the archaeological survey of the 'Irāq al-Amīr region at one of the rock-cut chambers in the eastern dolmen field. Many bone fragments were scattered about inside this rock-cut chamber, which indicates it is sepulchral in character. The excavation was under the direction of the author, with participation of Adrian McIntyre and Puiying Li. Taysir 'Attiyat represented the Department of Antiquities. It is very likely that more dolmens and rock-cut chambers will be found in the 'Irāq al-Amīr region as archaeological surveys continue along Wādī as-Sayr and the Wādī al-Kafrayn.

Dolmen Fields (Figs. 1 and 2)

In 1996, 15 dolmens were found over the hill slopes in two area. A first dolmen field is located in the area called "al-Qaṣabāt" on the hill slopes east to Wādī as-Sayr. The limits of the al-Qaṣabāt dolmen field are yet unknown for certain, but it extends from approximately al-Muwayna ('Irāq al-Amīr Survey Site 79) in the north to Rujm Umm Sitnā ('Irāq al-Amīr Survey Site 27) in the south. Thus, it covers an area of about 1.5 km north to south by 0.8 km east to west. So far this al-Qaṣabāt dolmen field appears to contain at least five dolmens. A second dolmen field is situated on the western slope of the prominent ridge west of Wādī as-Sayr. Local villagers call this area "al-Maṭalla" which means the high place. The dolmens lie in an area roughly 1.5 km north to south, 0.4 km east to west. At the al-Maṭalla dolmen field, the survey team recorded ten dolmens. The discovery of dolmen fields in the 'Irāq al-Amīr region fills the geographical gap between the dolmen fields in the Jordan Valley and those in the Transjordan plateau.

In the 'Irāq al-Amīr region, many of the dolmens remain collapsed, but all are either whole or have enough identifiable remains standing to call them dolmens. Most of our dolmens are oriented roughly north to south except for two dolmens that have the entrance toward the east. These two dolmens are parallel to the contour where an east to west orientation is more convenient than any other, which implies that the orientation may have been a practical trait rather than a question of religious symbolism. Our dolmens show a homogeneous repertoire of types, indicating that they were built by the same people in one period. They are built of large, rudely shaped natural stones and consist of a capstone and two upright stone slabs, usually closed by one to four upright slabs in the back to form a closed space. This type of dolmen is the most widespread in Palestine (Zohar 1993: 352). In the survey area, a capstone is 2.0 m long on the average, 1.6 m wide, and 0.6 m thick. Upright stone slabs measure some 1.3 m high, 1.8 m wide, and 0.5 m thick. The inner chamber is generally less than 2.5 m long and 1.0 m wide, and no higher than 1.5 m. Most of the dolmens, however, are of fairly



1. Survey of Dolmens and Rock-cut Chamber Tombs in the Region of 'Irāq al-Amīr.

diverse sizes, and no standardization is discernable. This stands in sharp contrast to the Dāmiya dolmen field where dolmens are of a standard size (Swauger 1965: 22). In ten of the 15 dolmens, a circle of stones surrounds the tumulus, indicating a sacred area around the tomb. Their size varies, but is 5.0 m in diameter on the average. In nearly all cases, the floor is the cleared bedrock, but the floor of one dolmen at 'Irāq al-Amīr Survey Site 44 is sunk into the ground. This feature of 'Irāq al-Amīr dolmens is worth noting since in many places dolmens were built on circular terraces formed of floor slabs (Swauger 1965: 23; Zohar 1993: 352-53). Such floor slabs appear completely absent in the 'Irāq al-Amīr dolmen fields. Overall, no sophisticated methods or technology was used for our dolmens.

No.	Region	Site	Orient.	Cover Slab (m)+	Side Slabs (m)++	Back Slabs	Surrounding+++ Stone Circles (m)	Condition
1	Gasabat	40	n-s	2.2 x 1.2 x 0.8	0.8 x 1.9 x 0.2 0.9 x 1.8 x 0.2	No	missing	com*
2	Gasabat	44	n-s	3.3 x 2.1 x 0.6	1.5 x 1.9 x 0.6 1.4 x 2.0 x 0.5	Yes	oval, 6.6 x 4.4	com
3	Gasabat	46	n-s	1.4 x 1.0 x 0.2	0.8 x 1.4 x 0.3 0.8 x 1.0 x 0.4	Yes	round, 2.4 x 2.6	com
4	Gasabat	48	e-w	missing	1.0 x 1.4 x 0.4 0.8 x 1.4 x 0.6	Yes	oval, 4.3 x 2.6	col**
5	Gasabat	48	n-s	1.3 x 1.4 x 0.7	1.6 x 2.1 x 0.4 1.1 x 1.2 x 0.5	Yes	round, 4.3 x 4.4	col
6	Matalleh	52	n-s	2.0 x 1.7 x 0.6	1.6 x 2.5 x 0.6 1.5 x 2.1 x 0.5	Yes	oval 5.5 x 4.5	com
7	Matalleh	52	n-s	3.0 x 1.8 x 0.9	1.6 x 2.3 x 0.5 1.2 x 2.4 x 0.4	Yes	oval, 5.0 x 5.9	col
8	Matalleh	52	n-s	1.4 x 2.1 x 0.4	missing 2.1 x 1.5 x 0.4	Yes	missing	col
9	Matalleh	52	n-s	1.6 x 1.3 x 0.6	unidentifiable 1.8 x 1.6 x 0.8	Yes	missing	col
10	Matalleh	52	n-s	2.9 x 1.9 x 0.8	0.9 x 1.6 x 0.5 0.7 x 1.9 x 0.4	Yes	missing	com
11	Matalleh	52	n-s	2.5 x 2.3 x 0.5	1.0 x 1.8 x 0.5 1.3 x 1.7 x 0.8	Yes	oval, 6.3 x 4.2	col
12	Matalleh	52	e-w	1.8 x 2.0 x 0.8	1.3 x 2.3 x 0.5 1.9 x 1.6 x 0.6	Yes	round, 6.0 x 5.9	col
13	Matalleh	61	n-s	1.9 x 1.4 x 0.5	1.3 x 2.3 x 0.3 1.4 x 2.2 x 0.3	Yes	missing	com
14	Matalleh	61	n-s	2.0 x 0.9 x 0.3	1.5 x 0.7 x 0.6 1.5 x 0.9 x 0.5	Yes	round, 3.5 x 3.3	com
15	Matalleh	66	n-s	1.5 x 1.5 x 0.3	0.8 x 1.2 x 0.3 0.8 x 1.1 x 0.4	Yes	round, 4.0 x 4.0	col

+length x width x thickness; ++height x length x thickness; +++length x width; *com: complete; **col: collapsed.

2. Dolmens in the Region of 'Irāq al-Amīr and the Wādī as-Sayr.

Much has been written regarding dolmens in Jordan, and some of the dolmens have drawn careful investigation. The great interest about dolmens stems from their distinctive geographical distribution. Dolmens are restricted to a narrow strip on both sides of the Syrio-African Rift Valley, north to Aleppo and south to the southern end of the Dead Sea. In northern Palestine, concentrations are known from Mount Mayrūn, Kibbutz Shamir, 'Alma, and the aj-Jawlān Heights, and dolmens continue south of the Yarmūk River. Concentrations of dolmens are found particularly at Dāmiya, al-'Udayma, Umm al-Quṭṭayn, and al-Maṭābi in the Jordan Valley (Stekelis 1935; 1961; Swauger 1965; 1966; Webley 1969). In the Transjordan plateau, dolmens appear in single units or groups in the regions of 'Ammān, Ḥisban, Tall al-'Umayrī, the Wādī Judayd, and the Wādī az-Zarqā' Ma'ān (see Bahat 1992; Swauger 1992 Vinitzky 1992; and Zohar 1992 and 1993 for overview and bibliography on the dolmens in Palestine).

Of special interest in conjunction with the dolmens in the 'Iraq al-Amīr region are the dolmens found in the regions south of the Wādī al-Kafrayn. Some 100 years ago Conder (1889: 125-33, 164-65, 197, 221-27) surveyed the Wādī Ḥīsbān region and identified a large number of dolmens at 'Ayn al-'Adasiyya, al-Kalu'a, Munṭar al-Mushaggar, and 'Ayn Sumya. The Ḥīsbān regional survey team revisited this area. The survey team was able to locate ten dolmens at Gurmiyyat Ḥīsbān, but failed to find dolmens at 'Ayn Sumya and al-Kalu'a (Ibach 1987: 11, 19 and 27). They must have been obliterated by the growing population in the Wādī Ḥīsbān. Dolmens were also found at Umm al-Quṭṭayn and al- Maṭābi near the Wādī Ḥisbān. Both sites are 1 km apart on the east bank of the Jordan River, but they are clearly intervisible. Swauger (1965: 25, 30) recorded five dolmens at Umm al-Quṭṭayn and 16 at al-Maṭābi. More dolmens are known to be located along the Nā'ūr-Dead Sea Highway and near Tall al-Ḥammām (Coughenour 1986; Conder 1889: 229). Dolmens are absent in the area of 'Ayn Mūsā and al-Qarn about 4 km south to 'Ayn Sumiya, but they reappear south to Mount Nebo (Conder 1889: 202-203). There are a total of no less than 160 dolmens in the Wādī Judayd and another 150 dolmens on the north side of the Wādī az-Zarqā' Ma'ān (Conder 1882b: 69-82; 1889: 254-74). These dolmens are scattered mainly at al-Murayghāt, 'Ayn Munya, al-Ḥaddaniyya, and al-Maṣlubiyya. According to Prag (1995: 76), these wadis are the upper course of the Wādī al-'Udayma, which indicates that all the dolmens in Wādī Judayd, Wādī az-Zarqā' Ma'ān, and al-'Udayma are located on the upper and lower courses of the same wadi.

Thus, noteworthy is the fact that dolmen sites are situated in a band stretching from Tall Iktanū to the sites in Wādī Ḥīsbān, Wādī as-Sayr, Wādī Judayd, and Wādī az-Zarqā' Ma'ān. Further to the south dolmen fields also occupy a relatively small area along al-'Udayma, the Wādī Judayd, and the Wādī az-Zarqā' Ma'ān. A general impression is that dolmens are noticeably centered in small areas covering the southern Jordan Valley and the vicinity of perennial water streams and springs along the Wādīs as-Sayr, Ḥīsbān, Judayd, and az-Zarqā'-Ma'ān. This fact indicates connections of the dolmens in these wadis with those at al-'Udayma, al-Quṭṭayn, and al-Maṭābi. In contrast, preliminary reports of the surveys of the northern wadis (the Yarmūk River, the Wādī Arab, the az-Zarqā' River, and the Wādī Shu'ayb) lack information on dolmens (cf. Kerestes 1977-78; Wright, Schick and Brown 1989). An archaeological survey was also carried out along Wādī Kufranja, but the material from this survey was not published (cf. Greene 1995). An exception is Wādī al-Yābis near Irbid, which contains several dolmen fields (Palumbo 1992; Palumbo, Mabry, and Kuijt 1990: 480). With-

out further systematic surveys and detailed reports on these wadis, inferences about dolmen distribution in the wadis would be premature, but it is not improbable that extensive dolmen fields are sparser in the wadis north of the region under discussion. No satisfactory explanation of this fact has yet been advanced. It can be suggested, however, that if the construction of dolmens is a cultural trait (Zohar 1993: 354), the concentration of dolmens mainly along the Wādīs al-Kafrayn, as-Sayr, Ḥīsbān, Judayd and az-Zarqā' Ma'an indicates that in the Chalcolithic and Early Bronze periods these wadis served one of the main routes of migration, communication, and trade between the Jordan Valley and the central Transjordan plateau.

Dolmens and Rock-cut Chamber Tombs

The al-Qaṣabāt dolmen field in the 'Irāq al-Amīr region presents an unique opportunity to study the relation of dolmens to the rock-cut chambers scattered in the Transjordan wadis. As stated above, on the east bank of Wādī as-Sayr are a number of large boulders with small chambers cut in them. Conder (1882b; 1889) suggested that such chambers were intended for burial and the corpse was placed in a crouching attitude. So far, about 40 rock-cut chamber tombs have been found in the survey area, and the majority of them are located within the boundary of the al-Qaṣabāt dolmen field. There is no reason to doubt that the chamber tombs occur in groups rather than in single units. The builders cut the chamber into the face of the rock to make its floor horizontal. Despite some exceptions, the chambers are found to measure some 1.0 m in height and in width, and 1.5 m. The entrance, 80 cm high and 80 cm wide on the average, is roughly rounded, as is the roof of the chamber, and the floor sunk about 15 cm lower. The entrance seems to have originally been closed by a slab.

These rock-cut chamber tombs should not be confused with other natural cave tombs, since they are man-made, elaborate tombs cut horizontally into detached blocks of rock on the slope. They consist of a single simple chamber, but in a few cases benches were cut into the sides of the chamber. As a rule the rock-cut chamber tombs are not more than 2.0 m long, 2.0 m wide, and 1.3 m high. Thus, they are smaller than the Early Bronze cave tombs in Transjordan, and should be differentiated from Early Bronze cist or shaft tombs dug into the ground.

Although research on rock-cut chamber tombs in Transjordan has been very limited, there is some evidence that al-Qaṣabāt is one of the rare dolmen fields still associated with a large number of rock-cut chamber tombs. It was Conder (1882a: 13) who first noted the close relation of dolmens to rock-cut chamber tombs. According to Conder (1889: 125-33, 164-65, 196, 221-27), there were a number of rock-cut chamber tombs at 'Ayn al-'Adasiyya, al-Kalu'a, 'Ayn Sumya, and Gurmiyyat Ḥīsbān in Wādī Ḥīsbān, all of which are found near dolmens. At al-Murayghāt near Wādī az-Zarqā' Ma'ān three rock-cut chambers were noted in conjunction with dolmens and circles of menhirs (Conder 1882b: 70-71; 1889: 184-89). Ḥaddaniyya near 'Ayn Judayd also included one rock-cut chamber and dolmens (Conder 1889: 99). At Dāmiya one potential rock-cut chamber tomb appears associated with dolmens (Stekelis 1961: 52).

Although there is no small number of dolmens in the central Transjordan plateau, none appears to be associated with rock-cut chamber tombs. For example, rock-cut chamber tombs seem absent in the regions of 'Ammān, Ḥawrān and the al-Baq'a Valley, although early surveyors reported sporadic discovery of dolmens and menhirs in these regions (Betts 1996; Conder 1889: 20-26; Glueck 1939: 199; Mackenzie 1911; Nasrallah 1950). A Polish-American team recently excavated an isolated dolmen on

Tall al-'Umayrī, but the evidence of rock-cut chamber tombs has not yet been found in the Mādabā Plains (Dabrowski, LaBianca and Dubis 1994). On the other hand, it was reported that there are a series of rock-cut chamber tombs around Tall ar-Raḥīl in the az-Zarqā' river (Kerestes 1977-78: 128). There is as yet no evidence at Tall ar-Raḥīl, however, that dolmens were built in conjunction with these chambers, although remains of dolmens may be under water of the King Talal reservoir. At Mayrūn in west Galilee, Kitchener (1878: 168) mentioned the rocks "honeycombed with ancient tombs" in connection with three dolmens, but it is impossible to determine whether or not they are rock-cut chamber tombs.

Accordingly, it seems that rock-cut chambers are found side by side with dolmens mainly in the Wādī as-Sayr, the Wādī Ḥīsbān, the Wādī Judayd, and the Wādī az-Zarqā' Ma'ān, with some possible sporadic exceptions in the Jordan Valley. Such juxtaposition in a particular region warrants further attention, since it may be related with the social and religious status of the occupants. Unfortunately, most of the dolmens south of the Wādī al-Kafrayn appear to have been destroyed by modern occupation, and thus the al-Qaṣabāt dolmen field in Wādī as-Sayr is among the very few dolmen fields with rock-cut chamber tombs remaining in Jordan.

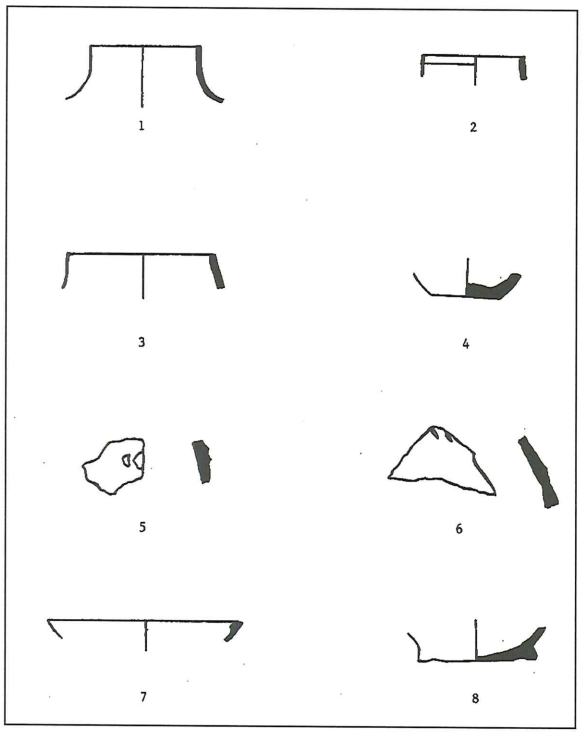
Salvage Excavations

In August 1996, a salvage excavation was conducted at a rock-cut chamber tomb in the al-Qaṣabāt dolmen field, which contained a large quantity of human skeletons. A salvage excavation was necessary due to the presence of human skeletons and some scattered pottery sherds inside the tomb. The excavated tomb is located about 20 m south of No. 2 dolmen at 'Irāq al-Amīr Survey Site 44. The tomb was cut into a block of soft limestone, and about 15 m west of this tomb are three additional empty rock-cut chamber tombs. This tomb was carved in a rectilinear shape, which is 2.4 m long, 1.8 m wide, and 1.4 m high. At the back is an irregularly-shaped bedrock depression that measures 30 cm wide and 15 cm deep. The ceiling was slightly rounded, and the floor was sunk about 30 cm lower. No decoration was found inside the tomb. Evidence of tiny chisel marks are visible on the wall and the ceiling. The entrance is oriented toward the west and is 95 cm high and 90 cm wide. The tomb was blocked by many boulders (about 20 x 20 x 20 cm) when the survey team discovered it. Thus, the general plan, except for the depression in the back, is typical of rock-cut chamber tombs found in the region of the Wādī as-Sayr and Ḥīsbān. It is not easy to determine the nature of this depression. A possibility is that this tomb was used as incomplete or hastily finished for unknown reasons. This suggestion seems plausible since the back side of this tomb was very roughly carved in comparison of the other three walls.

Two layers were found on the floor. Layer 1 is a surface layer, brown to red in color containing 12 human skulls and a large quantity of human long bones. Hence, a couple of generations of one family appear to have been buried in this tomb. Layer 1 was about 10-15 cm deep. Layer 2 was a dark gray ash layer mixed with many small bone fragments and several scattered long bones, 15-20 cm deep. In general, disarticulated bones and incomplete skeletal remains characterize this tomb. Yet, skulls appear laid out in the southern half of the chamber, which shows some sort of order. The prevalence of skulls and long bones is characteristic of Layer 1, and human bones are relatively sparse in Layer 2. This fact points to a tomb possibly used as a multiple, secondary burial place for nomadic, or semi-nomadic, populations during the period of Layer 1 (cf. Harding 1948: 94; Yassine 1983: 32).

The pottery assemblage includes three jar

rims, one jug rim, two body sherds with decorative marks, and one flat jar base with a knob in the center (see Fig. 3). The majority of the pottery is of medium-fired, handmade ware with white grits and wet-smoothed faces. They are of pinkish red and buff colored except for one gray body sherd.



3. Chalcolithic and Early Bronze Pottery at Site 44 (1-6) and Site 47 (7-8).

No precise parallels to the small storage jars in Figure 3: 1 and 3 have been found, though some similar forms appear in many Chalcolithic sites in Palestine. The pottery excavated at our tomb are characterized by a slightly inverted rim with a flat top, which is somewhat unusual in the Chalcolithic and Early Bronze I ceramic repertoires. Similar, but imprecise parallels are storage vessels with flaring or flat rims, which were ubiquitous at Tall Teo, Pella, Tall ash-Shūna north, and Kataret as-Samrā' (Eisenberg 1989: fig. 4:10-12, 14; Hennessy *et al.* 1983: fig. 1:1; Gustavson-Gaube 1986: figs. 14:48c-51e; Leonard 1983: fig. 9:10-11). These storage jar vessels seem related to the medium-sized storage jars found at sites in Cisjordan, such as Meser (Dothan 1957: fig. 3:12), Tall Turmus (Dayan 1969: fig. 5:1), 'Arad (Amiran 1978: pl. 4:1, 3),

No.	Provenance	Type	Descriptions
1	Site 44	jar	hand-made, pale red (2.5YR6/2) (E, I*), pale red core (2.5YR6/2), many small to medium white and gray inclusions
2	Site 44	jar	hand-made, pale red (2.5YR6/2) (E, I), pale red core (2.5YR6/2), some small to medium white and gray inclusions
3	Site 44	jar	hand-made, pale red (2.5YR6/2) (E, I), pale red core (2.5YR6/2), many small white inclusions
4	Site 44	jar base	hand-made, pale red (2.5YR6/2) (E, I), weak red core (2.5YR5/2), many small to large white and gray inclusions
5	Site 44	body sherd	hand-made, pale red (2.5YR6/2) (E, I), pale red core (2.5YR6/2), few small gray inclusions
6	Site 44	body sherd	hand-made, pinkish gray (5YR6/2) (E), pale red core (2.5YR6/2), pale red (2.5YR6/2) (I), many small to large white and gray inclusions
7	Site 47	bowl	hand-made, reddish yellow (5YR6/6) (E, I), reddish yellow core (5YR6/6), many small to medium white and gray inclusions
8	Site 47	base	hand-made, light reddish brown (2.5YR6/4) (E, I), light reddish brown core (2.5YR6/4), few small gray inclusions

*E:exterior; I:interior.

3. Descriptions of Chalcolithic and Early Bronze Pottery.

and the Sinai (Oren and Gilead 1981: fig. 8:11). The closest ceramic comparisons, however, are undoubtedly from Tulaylāt al-Ghassūl (Koeppel 1940: pls. 78:9; 82:1, 7, 11; North 1961: figs. 14:8628; 18:260), and Umm Buṭayma and Ṣaḥāri near Jarash (Hanbury-Tenison 1986: fig. 27:1; 1987: figs. 5:43; 7:1). It is also worthy of note that a close parallel was found in a dolmen field near Jarash (Leonard 1987: fig. 11:12).

Figure 3:2, possibly a jug or a small storage jar, appears to be a variation of the Chalcolithic jars with a tapering rim (Dothan 1959: fig. 6:10; Kaplan 1958: fig. 5:8; 1963: fig. 9:1). The best parallel comes from Tulaylāt al- Ghassūl (North 1961: fig. 14:8621) and a site on the Wādī al-Qaṭṭār, approximately 5 km to the northeast of Amman ('Amr *et al.* 1993: fig. 4:4). The band of thumb impressed decoration in Fig 3:5 was common in the Chalcolithic period (Baird and Philip 1992: fig. 8:6; Hanbury-Tenison 1987: figs. 5:16; 7:31; Leonard 1983: fig. 10). A line of diagonal incisions such as seen on the storage jar in Fig 3:6 was a very frequent design in the Chalcolithic period and extended throughout the Early Bronze period (Baird and Philip 1992: fig. 8:2-3; Dothan 1959: figs. 5:3; 6:13; Gustavson-Gaube 1985: figs. 10:29-30; 11:36-37; Hanbury-Tenison 1986: fig. 27:3-4; Leonard 1983: fig. 9:4; cf. Dayan 1969: fig. 6:21; Hanbury-Tenison 1987: fig. 6: 56; Kaplan 1958: fig. 5:13). This is also true for the flat base in Fig. 3:4, which was probably prepared by pressing the clay onto a flat stone (Amiran 1978: pl. 6:10; Bayt-Arieh 1980: fig. 7:17; Contenson 1956: fig. 13:1-8; Dayan 1969: fig. 7:32; Hanbury-Tenison 1987: fig. 10:36; Leonard 1987: fig. 11:13; Oren and Gilead 1981: fig. 8:4 and 7).

As for chronology, the excavated pottery examples are as yet insufficient to permit distinctive dating of the rock-cut chamber tomb. However, all the pottery in hand, except for one possibly late body sherd, appear compatible with a Chalcolithic classification, or the transition to the beginning of Early Bronze I. The pinkish red and buff color of the pottery may show some features characteristic of the Early Bronze period, although buff and red wares were common at Tulaylāt al-Ghassūl (Bourke *et al.* 1995; Hennessy 1969; 1982; 1992). This pottery thus may enable us to ascribe the tomb to the Chalcolithic period or the transition to Early Bronze I. There are general ties with Tulaylāt al-Ghassūl and the Transjordan plateau rather than the Negev and Cisjordan, which may indicate the ceramic tradition of the rock-cut chamber builders is clearly local and possibly Ghassulian. Interestingly enough, the Ḥīsbān survey team also collected some 100 Chalcolithic pottery sherds at al-Kalu'a, which supports our dating of rock-cut chamber tombs. It was the only site where Chalcolithic pottery was dominant in the Ḥīsbān survey region (Ibach 1987: 27). This dating is of particular importance because the rock-cut chamber tombs appear to form a link between the Chalcolithic funeral customs and Early Bronze I dolmen tradition.

Objects from the tomb are tentatively classified into five groups, and the summary of this classification is represented in Fig. 4. In the bead category are 1217 beads smaller than 1 cm in diameter and 113 beads larger than 1 cm in diameter.

Approximately 77.0% of the small beads came from Layer 1 and 93.8% of the large beads from Layer 1. Various colors of carnelian dominates the assemblage, but some beads are made of ceramic, jasper, and hematite. Forty-five bangle fragments were collected, and a careful examination shows that they belong to at least ten different bangles. About 84.4% of bangles were found in Layer 1. Not a small number of shells and Roman glasses were revealed with one bone artifact, which shows that this tomb was possibly vandalized in the Roman period. In the category of food preparation is

Layer	Locus	Bead		Bangle	Ring/Bracelet		Metal Fragments		Others
		Small	Large		Iron	Bronze	Iron	Bronze	
1	1	296	46	14	6		0	2	Roman Glass Shell 8
	2	290	21	5	7		2	3	Bone Artifact 1
	3	156	22	9	1		0	0	Roman Glass Shell 7
	4	195	17	10			2	2	Roman Glass Shell 11
2	5	199	6	6	1		0	0	Roman Glass
	6	59	0	0		1	0	0	Shell 1 Grinder 1
	7	0	0	0	0	0	0	0	
	8	22	1	1	3	0	0	0	
Total		1217	113	45			4	7	

4. Objects and Jewellery from Site 44, Tomb 1.

one stone grinder. There are no objects related to military activities or textile manufacture.

Rings and bracelet are divided into two groups according to material. Thirteen Iron rings or ring fragments were found, and 46.2% of the 13 Iron rings came from Layer 1. Only one Iron bracelet was found, which came from Layer 1. Three bronze rings were also found in Layer 1. Thirteen miscellaneous metal fragments were uncovered from Layer 1. Four of them are made of Iron, and the remaining nine are made of bronze. The presence of iron objects indicates that the tomb was reused in the Iron Age or later. A more detailed and technical study will be performed in the near future.

In the ancient Near East copper has been known to man since the pre-Chalcolithic period, and the first evidence for the use of arsenical alloy of copper appears in the late fourth millennium BC (Hauptmann and Weisgerber 1992: 63; Muhly 1977: 73-74). The earliest example of tin bronze appeared in the late fourth millennium contexts in Irān, Afghanistān, and northern Mesopotamia (Stech and Pigott 1986: 43, 47; Pigott 1996: 159). Tin bronze was introduced into southern Mesopotamia shortly after 3000 BC, and became the dominant alloy of copper by the mid-third millennium BC (Cleuziou and Berthoud 1982; Moorey and Schweizer 1972; Muhly 1977; Pigott 1996; Stech and Pigott 1986).

In Palestine it was only after the end of the Early Bronze period that the number of bronze artifacts and their general tin increased significantly (Moorey and Schweizer 1972: 192-94). A tin bronze dagger is known from Bāb adh-Dhrā', but it is dated to Early Bronze III/IV (Hauptmann and Weisgerber 1992: 63). Hence, the presence of bronze artifacts in our rock-cut chamber tomb is somewhat puzzling. It must be mentioned, however, that finds at Tulaylāt al-Ghassūl and Umm al-Qaṭafa include several bronze axes and artifacts dated to the Chalcolithic period (Mallon, Koeppel and Neuville 1934: 75-77). At Tulaylāt al-Ghassūl the axes were found in the uppermost settlement levels and proved to contain about 7% tin. This would suggest that the bronze artifacts in our rock- cut chamber tomb were associated with those at Tulaylāt al-Ghassūl.

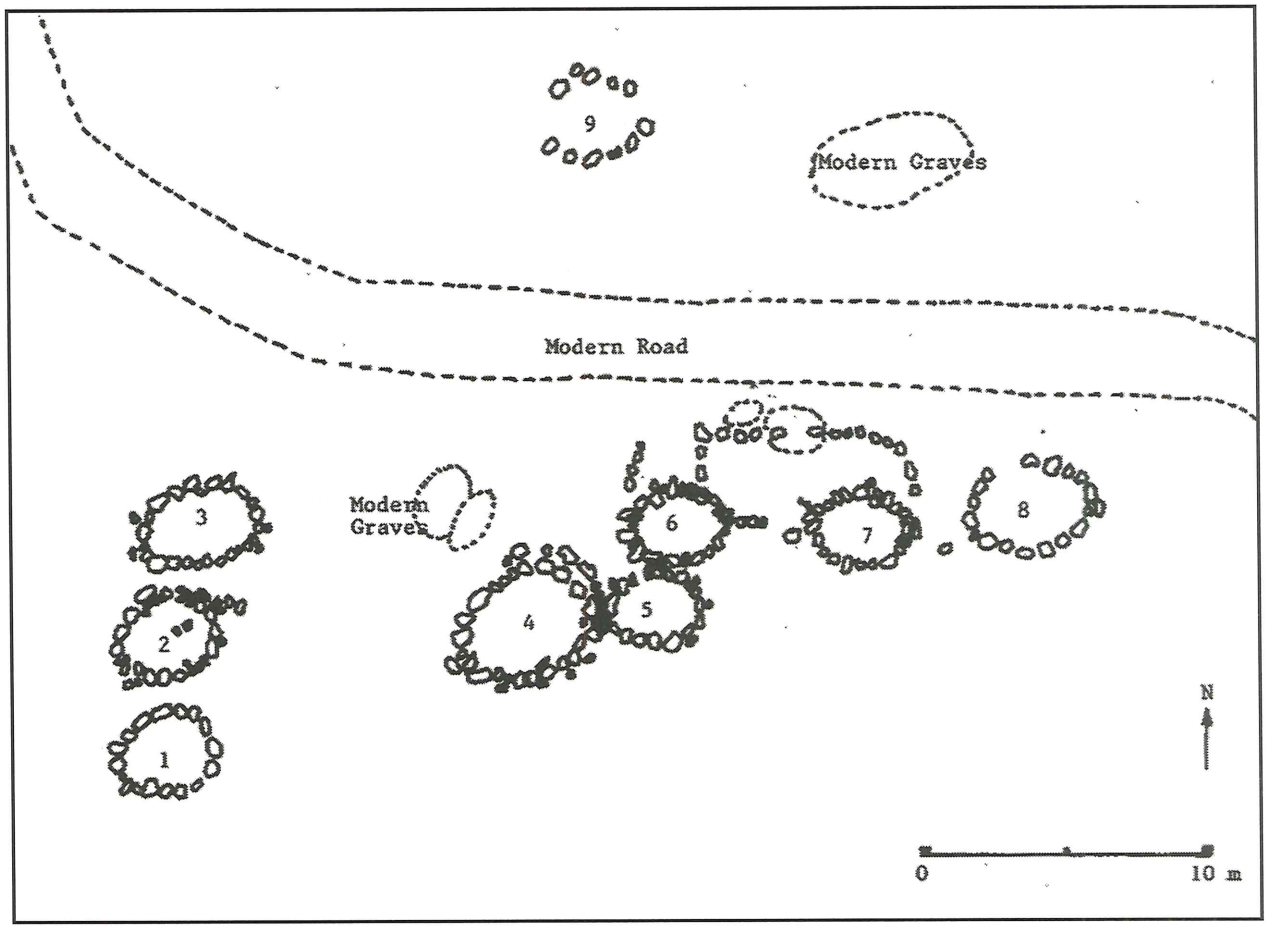
A question is how to account for the early date of bronze artifacts at Tulaylāt al-Ghassūl and our rock-cut chamber tomb. A

possible suggestion is that our tomb was reused for burial late in the Early Bronze IV period, but this elucidation fails to explain the absence of Early Bronze IV evidence at Tulaylāt al-Ghassūl. Further studies are warranted in seeking answers to this important question.

In sum, most of the objects were collected in Layer 1 where they were mixed with a large number of human skulls and long bones. Accordingly, objects and small bones in Layer 2 seem merely intrusive from Layer 1. This fact supports the suggestion that this tomb was first used for dwelling (Layer 2) and later for burials (Layer 1). The pottery indicates the two layers are dated to the same period, the Chalcolithic and possibly the transition to Early Bronze I. Nevertheless, it is not improbable that the tomb was reused for burial late in the Early Bronze IV period and the Iron Age.

Stone-lined Circles

Among many fortunate finds resulting from the 1996 survey was another possible Early Bronze site which contained nine stone-lined circles (Site 47; PG: 222.4/ 146.1). This site was found on the southernmost part of the al-Qaṣabāt dolmen fields, overlooking Wādī as-Sayr and 'Irāq al-Amīr. Most of these circles seem to remain undisturbed despite modern graves scattered about within the site (see Fig. 5). These circles are constructed from small limestone boulders (25-50 cm). They have an outside diameter of some 3.9 m on the average, and the stone lines remain standing about 40 cm above the ground. The largest circle measures some 5.2 cm in diameter



5. Stone-lined Circles (Site 47) in the Region of 'Irāq al-Amīr.

and the smallest, some 3.3 m. The boundary of circles consists of one to three courses of stones. The entrances to the circles are not discernable, except for No. 5 circle that has entrance situated in the northern side of the structure. The precise dimensions of these circles are presented in Fig. 6.

The stone circles at al-Qaṣabāt may be representative of grave circles or an-Nawāmīs. Surveys and excavations conducted at Mezad Aluf have revealed a concentration of stone-lined circles similar to those at al-Qaṣabāt (Levy and Alon 1982; Levy *et al.* 1993: 99- 105). The stone-line circles were located in close association with the Chalcolithic village at Shiqmīm. Another related form is Tomb B 2 at Bāb adh-Dhrā' which consisted of two parallel rows of stones forming a circle. The outer line was made of dressed slabs, while the inner line was composed of large rough rocks (Schaub and Rast 1989: 489). The date of this tomb is yet uncertain. Inside the circles at Mezad Aluf were many disarticulated human bones and grave offerings. Based on a quantitative analysis of bones and artifacts excavated inside the circles, the excavators concluded that the Chalcolithic village at Shiqmīm was a relatively complex and stratified society. Levy and Alon (1982: 56) see a link between their grave circles at Mezad Aluf and the circular an-Nawāmīs located in the Sinai (cf. Bar- Yosef *et al.* 1977, 1986). Both cemeteries are dated to the Chalcolithic period and the beginning of Early Bronze I. Yet, our stone circles are much larger than those at Mezad Aluf. The data from Cemetery 1 at Mezad Aluf show that the circles are 1.0 m in inside diameter and 1.5 m in outside diameter (Levy and Alon 1982). On the other hand, the an-Nawāmīs in the Sinai measure 2.2 m in inside diameter and 4.3 m in outside diameter (Bar-Yosef *et al.*1977: 70). Thus, the circles in the 'Irāq al-Amīr region are larger than the grave circles at Mezad Aluf in terms of size but similar to the an-Nawāmīs in Sinai.

Circle	Outside Diameter (m)			Height (m)
	east-west	north-south	mean	(above ground)
1	3.88	3.30	3.59	0.20
2	4.10	3.51	3.80	0.20
3	4.12	2.45	3.29	0.20
4	5.25	5.10	5.18	0.45
5	4.00	3.00	3.50	0.50
6	4.20	3.40	3.80	0.70
7	3.48	3.37	3.43	0.60
8	4.27	3.90	4.09	0.28
9	4.70	3.50	4.10	0.50
Mean	4.22	3.50	3.86	0.40

6. Stone-line Circles.

Another possibility is that they were used for dwelling. Excavations at *Gabal Gunna* in the Sinai uncovered clusters of oval and round structures of various sizes (Bar-Yosef *et al.* 1986). The ceramic evidence from this site favors an Early Bronze II date. Similar oval and round structures are also known from Tulaylāt al-Ghassūl, Yiftahel in Galilee, and Jāwa in Transjordan (Hennessy 1997; Mazar 1990: 97). At Tall ash-Shūna north the major feature of Level III is a round house, measuring some 4.5 m in diameter externally and an internal space under 3.0 m (Leonard 1992: 36). It is built of mud bricks. The round structures at these settlements are all dated to Early Bronze I. Recent excavations at Tall Teo and Jabal al-Muṭawwaq on the az-Zarqā' River provide additional convincing evidence that oval or round structures were the prevailing style of architecture in Palestine during the Early Bronze I period (Braun 1989; Eisenberg 1989; Hanbury-Tenison 1985).

The ceramic materials collected at this site are scanty. Of the seven pottery sherds collected, only one sherd is diagnostic and falls inside the Early Bronze period range. The hammer- shaped rim of Fig. 3:7 appeared in Early Bronze I-II and became one of predominant rim forms among the Early Bronze III bowls in Palestine (Schaub and Rast 1989: 439). The external wall of an early form tends to be straight, but later the rim was slightly bent outwards to form a more complete hammer and knob rim. Our rim may thus fit an early form dated to as early as Early Bronze I. Parallels come from

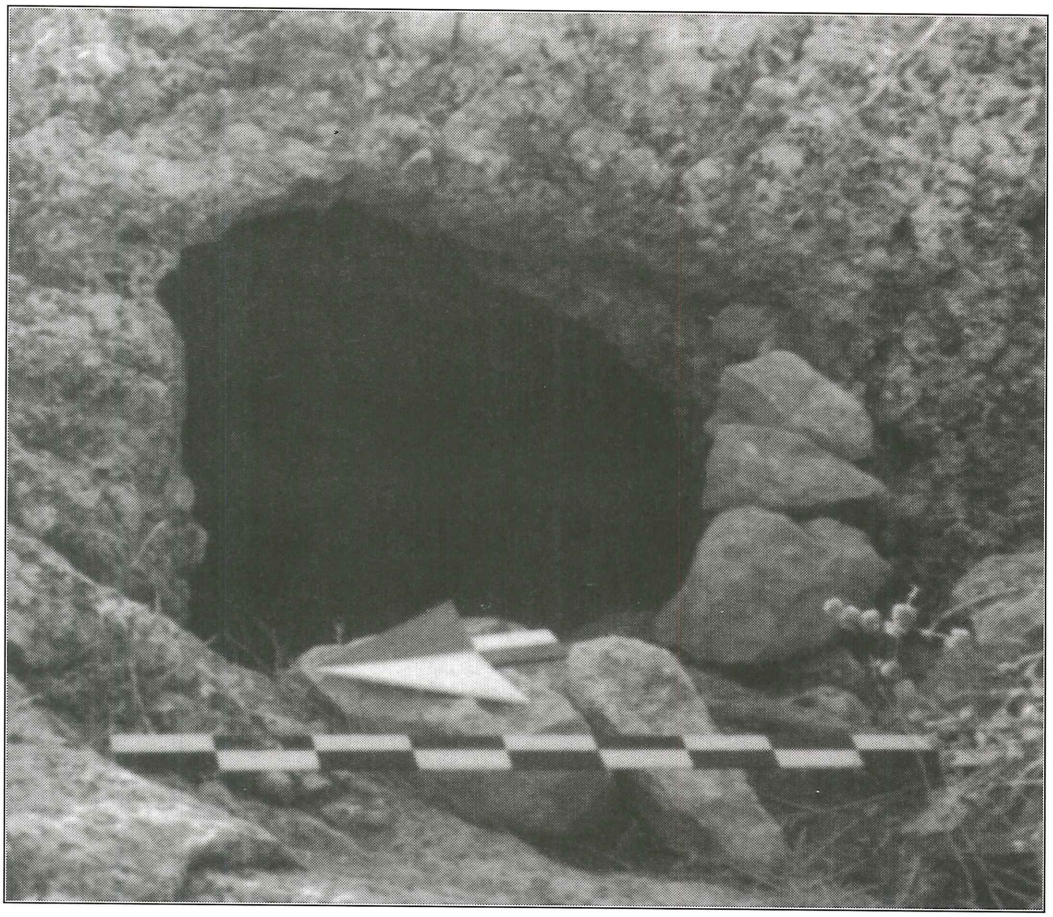
Arad (Amiran 1978: pls. 8:1; 13:41), Bāb adh-Dhrā‘ (Schaub and Rast 1989: figs. 203:18; 222:23), and Tall al-‘Umayrī (Herr 1989: fig. 19.2:3-5). The primitive form of ring base in Fig. 3:8 is a variation of a flat base typical of the Early Bronze period (Amiran 1978: pls. 33:3; 47:5; Schaub and Rast 1989: figs. 13:22, 38; 58:3; 72:2). In general, the above forms seem to place themselves at the Early Bronze period, most likely late Early Bronze I and II. This fact may indicate chronological ties of the stone-lined structures at al-Qaṣabāt with the Early Bronze round structures at Jabal Gunna, Yiftael, and Jāwa, although comparison is still somewhat suspect.

During the field season in 1996, the stone-lined circles were numbered consecutively and their basic features recorded. Owing to the modern graves at this site, it was decided not to excavate these structures until the local villagers agree with further archaeological investigation. Thus the nature and date of these stone-lined structures is as yet far from clear. In addition to the ceramic materials, however, the typological links between our stone circles and round houses in Palestine may support the assumption that our stone-built, round structures were used for dwelling during Early Bronze I and II, although it is not impossible that they are remains of either grave circles or an-Nawāmīs.

Discussion

In the ‘Irāq al-Amīr region little evidence remains for the dating of the dolmens since they were built on bedrock (Figs. 7 and 8) Accordingly, some attention needs to be given to the dolmens in the surrounding areas. The date of dolmens has been a subject of scholarly speculation and estimates ranges from 7000 to 100 BCE Albright (1960: 64) dated the dolmens to the Tahunian;

7. A Dolmen at Site 46.



8. Rock-cut Chamber Tomb 1 at Site 44.

Anati (1963: 280) and Glueck (1970: 151) to Pre-Pottery Neolithic and Neolithic; Broome (1940) to Proto-Urban; and Gilead (1968) to the second half of the fourth millennium BCE. Yet, from what is known at present, it appears apparent that many of dolmens were constructed in the Early Bronze I period, and the Early Bronze IV saw an extensive reuse of many dolmens (Prag 1995: 79; Zohar 1992: 51-52; 1993: 354). There is an indication, however, that dolmens were continuously in use during Early Bronze II and III in Palestine (Glueck 1939: 199; Vinitzky 1992: 107). A few dolmens at Dāmiya contained some Late Bronze pottery as well (Gilead 1968: 18). At al-Quṭṭayn and Dāmiya, some dolmens were used even as late as Iron I and II (Dajani 1967-68), and at Khirbat Keraziye in Galilee, Roman material was found in dolmens (Turville-Petre 1931: 155).

A significant point is the chronological gap between the dolmens in northern Transjordan and those in central Transjordan. At Dāmiya Yassine (1985) excavated one dolmen and dated it to Early Bronze I, which agrees with Dajani's excavation (1967: 59) at al-Quṭṭayn. The Mādabā Plains Project hinterlands survey team unearthed a dolmen at Tall al-'Umayrī, containing more than 20 complete Early Bronze IB pottery specimens (Dabrowski, LaBianca and Dubis 1994). In other words, in the southern Jordan Valley, the Mādabā Plains, and the Wādī Ḥisbān region, dolmens are consistent with Early Bronze I, although they were reused during the Late Bronze period and the Iron Age. There is little evidence for the Early Bronze IV and Middle Bronze I periods.

The finds in the aj-Jawlān Heights and Galilee, however, suggest that dolmens, despite differences in size and details of construction, were erected towards the end of

the Early Bronze period (Epstein 1985; Bahat 1972). Vinitzky (1992: 107) posits that dolmens in the aj-Jawlān and the Galilee were built in Early Bronze II and III.

In conjunction with this, we need to note that Broome's study (1940) of the dolmens in the Ḥawrān region indicates that at Jisr ar-Raggad, Kufr Yūba, al-Bidiyya and Rās Munīf, dolmens must have been built later than those in the south. This suggestion is in line with Nasrallah's report (1950) that in Ḥawrān Early Bronze II-III pottery came from dolmens, although some earlier flints were found there as well. Further to the south at Dalma, a few sherds were found in dolmens which are dated to Early Bronze IV and Middle Bronze I (Broome 1940: 485-86). At al-Qaṣr in the Baq'a Valley, Glueck (1939: 199; cf. McGovern 1986: 8) discovered one dolmen dated probably to no earlier than Early Bronze II and III. At Arqub Ibn Haddad, not far from the az-Zarqā' river, dolmens are dated most likely to Early Bronze IV and Middle Bronze I (Glueck 1939: 216). A rare exception is the five dolmens near Jarash, which are perhaps associated with late Chalcolithic and Early Bronze I pottery sherds (Leonard 1987: 354).

In general, the dolmens in central Jordan and the Jordan Valley seem to have been constructed during the late Chalcolithic and Early Bronze I periods; those in the regions of northern Jordan, aj-Jawlān, and Galilee, during the Early Bronze II-III or Early Bronze IV/Middle Bronze I periods (Bahat 1987; Hartel 1987; 1989). In other words, it seems that in the aj-Jawlān and the Galilee, the tradition of burial in dolmens lagged behind that in the Jordan Valley and the central Jordan plateau (Vinitzky 1992: 107). Broome (1940: 495) went further to suggest that the dolmen tradition was indigenous and made its first appearance in central Jordan. This suggestion, however, should not be stressed unduly, since there is some evidence showing that dolmens were in use before the Early Bronze period in Lebanon (Tallon 1964). It still may be premature to remark that archaeologists have to seek the origin of dolmens in the Jordan Valley and central Jordan. Yet, it is important to note at least two points. First, archaeological evidence does not necessarily support the view that the dolmen builders arrived from the north in the southern Jordan Valley and central Jordan (cf. Epstein 1985: 20; Kenyon 1979: 67; de Vaux 1971: 233-34). As far as the ceramic evidence is concerned, the dolmens in the Jordan Valley and the central Jordan plateau antedate those in the regions of aj-Jawlān, Galilee, and northern Jordan. Second, to the best of our knowledge, in the Jordan Valley and central Jordan the earliest materials uncovered in dolmens belong to Early Bronze I or slightly earlier than Early Bronze I. While the possibility cannot be ruled out that some dolmens were erected in the Chalcolithic period, the archaeological evidence points to its widespread appearance in the southern Jordan Valley and central Jordan during Early Bronze I, and its reuse in the Late Bronze period and the Iron Age.

Having proposed that the dolmens in the southern Jordan Valley and the central Jordan plateau are dated mainly to Early Bronze I, we may contend that in the al-Qaṣabāt area, rock-cut chamber tombs slightly antedated the dolmens. The distribution of rock-cut chamber tombs in the 'Irāq al-Amīr region may also lead to the same hypothesis. The fact that no rock-cut chamber tombs have been found in the al-Maṭalla dolmen fields supports the view that dolmens were not built in the same period as the rock- cut chamber tombs.

A remaining question is the socio-economic background of these burial traditions. In regard to rock-cut chamber tombs, a great deal of physical effort must have been necessary to cut into rock, indicating that great importance was attached to the preparation of the tombs. The artifacts as-

sociated with the burials also show that special social status was attached to the interred. The discovery of many fine metal objects at our rock-cut chamber tomb indicates that there must have been socioeconomic strata of miners, tradesmen, artisans, and consumers, when the tombs were carved. This view agrees with the commonly held supposition that the Chalcolithic society was a stratified society, perhaps divided into social classes (Gonen 1992: 41). On the other hand, Zohar (1992: 53-55; 1993: 356) characterizes the society of dolmen builders as an elitist society and assumes that dolmen cemeteries, like other megalithic structures, were social centers of semi-nomads for the enactment of rites, annual meetings, and other various socioeconomic activities. The recent excavation at a dolmen near Tall al-'Umayrī supports the idea that dolmens were used for multiple, secondary burials typical of semi-nomads (Dabrowski, LaBianca, and Dubis 1994).

Surveys and excavations conducted in Palestine show that during the Chalcolithic period the inhabitants did not reside in a particular area all year round but only in the sowing and reaping seasons, migrating to the pasturelands and desert margins during the rainy months (Gonen 1992: 43-47). Such a migratory pattern is well suited to the geographical distribution of the rock-cut chamber tombs and dolmens in Jordan. They are noticeably concentrated near fertile agricultural fields and water sources in the wadis, possibly along routes of pastoral transhumance and close to seasonal camping centers (cf. Prag 1995). The people who made rock-cut chamber tombs and dolmens may have neither conducted any extensive building activity nor built permanent settlements in the Wādī as-Sayr, the Wādī Ḥīsbān, and the Wādī Judayd, since surveys show that in these wadis no Chalcolithic and Early Bronze I sites were in close proximity to rock-cut chamber tombs and dolmens. Possible exceptions are 'Iraq al-Amīr and a couple of sites along the Wādī as-Sayr where a few Chalcolithic sherds have been found in later contexts or on surface (Lapp 1962a; 1962b; 1963; Ji 1996). Probably they spent only a few months in the wadis for sowing and reaping and the rest of the year in the pasture lands in the southern Jordan Valley and the Jordan plateau. We are inclined, therefore, to argue against the view that dolmens represent "pastoral nomad-agriculturalist interaction" and belong to the "a pastoral elite who assumed dominance over the agricultural population (Zohar 1993: 356)." The builders of both rock-cut chamber tombs and dolmens were the population who employed a pastoral life-style as well as seasonal agriculture. In terms of socio-economic life-style, we do not see any marked differences between the two tomb builders.

Indeed, the concentration of dolmens and rock-cut chamber tombs lies on the hilly slopes at 'Ayn al-'Adasiyya, al-Kalu'a, 'Ayn Sumya, Gurmiyyat Ḥīsbān, al-Murayghāt, and Ḥaddaniyya, all of which are situated near the flat, fertile wadi beds along perennial wadi streams and springs. The basic, primary form of settlement is most likely to have been the tent dwelling, but it is possible that natural caves that abound along the wadis also sheltered the people. It is conceivable that some of the rock-cut chambers, designed primarily for burials, served as seasonal dwelling places for the semi-nomadic population as well. The rock-cut chamber in 'Irāq al-Amīr survey Site 44 appear to represent such a seasonal shelter that was in use for a relatively long period of time.

Conclusion

The discovery and excavation of dolmens and rock-cut chamber tombs in the 'Irāq al-Amīr region have contributed to a better understanding of Chalcolithic and Early Bronze I in Jordan. The investigation

indicates close relationships between the two types of burial customs in central Jordan, particularly along the wadis descending from the central Jordan plateau to the southern Jordan Valley and the Dead Sea. In regard to the rock-cut chamber tombs, the main period of use appears to have been the late Chalcolithic period, but interments continued to be made into the beginning of Early Bronze I and possibly later during the Iron Age. Dolmens may represent a new tradition initiated by either immigrants or indigenous local people slightly later than the tradition of rock-cut chambers. Thus it seems that in the 'Irāq al-Amīr region, the dolmens at the al-Qaṣabāt and al-Maṭalla areas represent a radical change in burial traditions during the transition from the Chalcolithic period and Early Bronze I, following rock-cut chamber tombs. This suggestion may point to a cultural break during the given period (cf. Braun 1989). Yet, it should be underlined that there is a need for additional studies focusing on the origin of dolmen builders and their relationships with rock-cut chamber tombs. On the other hand, if they are contemporaneous, dolmens and rock-cut chamber tombs may reflect either different social status and strata of the buried or their different tribal backgrounds. Archaeologists have paid scanty attention to the rock-cut chamber tombs so far, so we still have difficulties in making comparisons with other sites in Palestine. Another intriguing question is the relation of the people who used rock-cut chambers and dolmens, with those who used stone-lined circles. The significance of stone-line circles in the 'Irāq al-Amīr region is not known, although they were probably intended as either burial places or dwelling houses. It is obvious that one season of archaeological surveys can only raise and not answer questions. It is hoped, however, that our ongoing archaeological works will elucidate issues related to the Chalcolithic and Early Bronze settlement patterns and history in the region of 'Irāq al-Amīr and the Wādī as-Sayr.

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