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On the cover: an 18th-century map of
the Holy Land, by Eman. Bowen.

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Editorial

This issue contains two main articles dedicated to the topic of ancient Jerusalem. The first is Gregory Wightman's paper on the Hasmonean *Baris* and the Herodian *Antonia*, two fortresses which were located in the area of the northwest corner of the Temple precinct, the present *Ḥaram ash-Sharif*. This is the second instalment of a two-part study on the Temple fortresses in Jerusalem. The first part appeared in the previous issue of the *Bulletin* (*BAIAS* 9, 1989–90, 29–40).

The second article on ancient Jerusalem is David Jacobson's study of the plan of Herod's Temple, a subject about which there have been conflicting views ever since the *Ḥaram* area was first properly mapped by Charles Wilson during the Ordnance Survey of Jerusalem in 1865. Jacobson has a special interest in the architectural planning of sites in Roman Palestine and this is reflected in his published studies on Upper Herodium (*BAIAS* 5, 1985–86, 56–68) and on the *Ḥaram el-Khalil* building in Hebron.

The third article in this issue is a short note on three coins of Alexander Jannaeus, found during the nineteenth century at the village of El ʿAl in the Golan, and deposited in the Palestine Exploration Fund. The coins were brought to my notice by Dan Urman who came across them while examining the Fund's collection of coins from Colt's Nessana excavations. Urman's interest in the Golan goes back to the time when he was Archaeological Staff Officer for the Golan from 1968 to 1975. The results of his surveys and excavations were published in his book entitled *The Golan. A Profile of a Region During the Roman and Byzantine Periods* (BAR 269, 1985, Oxford).

The reviews section includes a review article by Rupert Chapman on a two-volume collection of essays on the Early Bronze Age edited by de Miroschedji. These two very important volumes are set to become essential reading material for everyone with an interest in the archaeology of Israel during the Early Bronze Age. Six reviews of other recently published books are also included in this section.

Ora Yogev's short but fruitful archaeological career in the Israel Department of Antiquities (now the Israel Antiquities Authority) is described in an obituary written by her colleague Eliot Braun who is one of the Associate Editors of the *Bulletin*. I first met Ora when she began working for the Department and was struck by her capacity for hard work and by the forcefulness of her opinions.

Finally, the *Bulletin* includes a section devoted to lecture summaries. Denys Pringle's contribution is given in full, since we believe it to be one of the best descriptions of Crusader Jerusalem in existence. A section with reports submitted by grant recipients is also included.

Shimon Gibson

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Temple Fortresses in Jerusalem Part II: The Hasmonean *Baris* and Herodian Antonia

GREGORY J. WIGHTMAN

The Hasmonean Baris

> 'On the north side [of the Temple] was a square-cut and well-walled citadel that had been built with unusual strength. It was built by the kings and high priests of the Hasmonean family prior to Herod, and called Baris' (*Ant.* XV.403).
> 'Hyrcanus had constructed [the] Baris near the Temple . . . ; when Herod became king he rebuilt the Baris, which was conveniently situated, on a grand scale, and being a friend of Antony he named it Antonia' (*Ant.* XVIII.91).
> 'The Antonia lay at the corner of two porticoes, the western and the northern, of the outer court of the Temple' (*War* V.238).

These passages establish the construction date of the Hasmonean citadel, or *Baris* as it was called, during the last third of the 2nd century BC, and its close relationship to its successor, the Herodian *Antonia*. The third passage implies the approximate location of the *Baris* at the northwest corner of the Herodian Temple enclosure. The present boundary walls of the *Ḥaram ash-Sharif* are essentially those laid down by Herod the Great in the later 1st century BC. The southeast and southwest corners of the Herodian enclosure have been fully exposed by archaeological excavations. Herodian masonry has now been traced along the entire length of the western wall (due to recent clearances north of Wilson's Arch by the Israel Ministry of Religious Affairs) up to a point just beyond the *bāb as-sarāi* (see Fig. 4:9, 10). The northeast corner of the Herodian enclosure is given by the T-intersection at the so-called 'Tower of Antonia' (Herodian masonry extended well beyond this intersection toward the north, where it served as a low-level dam wall across St Anne's Valley for the waters of the *Birkat Israil*; the latter was built against the northern wall of the Herodian enclosure).

The etymology of the world *Baris* is not completely clear. There is no question that it must in some way have been related to the Hebrew word *biyrah*, since a few manuscripts of the Septuagint translate *biyrah* into the Greek form *baris* (e.g. in *Ezra* I 6:22, in reference to the Achaemenid palace-fortress at Ecbatana; this may be an Hexaplaric gloss on an earlier defective text; *Ezra* II 6:2, in reference to the palace-fortress in Media; *Ezra* II 11:1, where all manuscripts have *en Sousan abira* (or *abeirra*), the Lucianic recension has *en Sousois tēi barei*; *Esther* 1:2, all the

Septuagint manuscripts have *en Sousois tēi polei*, but two Old Latin manuscripts have *t[h]ebari*, which must be a transliteration of a non-extant manuscript of the Septuagint which read *en Sousois tēi barei*; *Esther* 8:14, referring again to Susa has the form of the Origenic recension, *en Sousois tēi barei*, whereas most manuscripts have simply *en Sousois*, the Ethiopic version adding *tēi polei*; *Daniel* 8:2, in the same context has *en Sousois tēi barei*, as does Theodotion, who wrote probably during the 2nd century AD; most manuscripts have *en Sousois tēi polei*). The word *biyrah* occurs fifteen times in the Hebrew Bible, three times in relation to buildings at Jerusalem (*Chron.* I 29:1, 19; *Neh.* 7:2), and eleven times in relation to the Achaemenid citadel at Susa (*Neh.* 1:1; *Esther* 1:2, 5, 2:3, 5, 8, 3:15, 8:14, 9:11, 12; *Daniel* 8:2). Nehemiah, as a functionary of the Persian court prior to his appointment as governor of Jerusalem, lived in the *biyrah* of Susa, which was none other than the enclosed citadel-palace of Darius I in the western corner of the city. The word was also used by the Chronicler for a particular building within Solomon's royal citadel at Jerusalem. Neither *biyrah* nor its variant form *biyraniyyah* (*Chron.* II 17:12, 27:4) occur in the earlier historical books of the *Masoretic* text; their frequent use in the post-exilic canonical literature suggests that the words came into use no earlier than the late-Israelite period.

The word *biyrah* may have been borrowed into Hebrew from Assyrian *birtu* or *bištu*, both of which had been in use since the Old Babylonian period with the following meanings: (1) a citadel or castle within a city (e.g. Nimrud and Khorsabad); (2) a fort placed at a strategic location outside a city; and (3) the lands protected by such forts (*Assyrian Dictionary* II, 261 ff.). This is a wide range of meanings, and even if Hebrew *biyrah* were a rendering of *birtu* there would be still no way of ascertaining which of the meanings had been adopted by the authors of *Chronicles*, *Nehemiah*, *Esther* and *Daniel*. Since *biyrah* was used most often with reference to the Achaemenid capital cities in Persia, the word may have been borrowed directly from Old Persian *baru*, 'fort' (cf. the Old Persian words *barez* and *berezant*, meaning 'high' or 'lofty'; cf. also Sanskrit *bura* or *bari*, for 'fort' or 'castle').

Apart from its occasional use in the Septuagint to translate the Hebrew word *biyrah*, *baris* is also used as an equivalent to the Hebrew words *'ārmōn* and *hēyḵal*, meaning 'large house', 'citadel', 'palace' or 'castle', and always in reference to such buildings at Jerusalem (*Chron.* II 36:19; *Ps.* 44:9, 47:14, 48:3; *Lam.* 2:5, 7; *Neh.* 2:8). A compound form, *pyrgobareis*, is found in *Ps.* 121:7 (LXX) as a translation of the Hebrew *'ārmōn* (Philo of Byzantium, who wrote a treatise on siegecraft in the 3rd century BC, used a similar term, *pyrgoibareis*, or simply *bareis*, though exactly what he meant by it is still uncertain; see Lawrence 1979, 71, 392 n.9). The word *baris* was used with the same meanings by later authors, such as Aquila and Symmachus (Hatch and Redpath 1897/1906, 190: col.3), by the Byzantine writer Stephanus Byzantinus in a quotation from the 3rd-century-BC Greek historian Posidippos, and by the 4th-century-AD writer from Asia Minor, Ephorus (the word continued in use during the Byzantine period with the meaning of 'castle'; see Lampe 1961/68, 239 and references cited therein; the Byzantine lexi-

cographer Hesychius gave the following synonyms for *baris*: *ploion*, 'boat'; *teichos*, 'wall'; *stoa*, 'portico' or 'colonnade'; and *pyrgos*, 'tower'; *qv. Etymologicum Magnum*, 188, 31). Josephus' use of the word *baris* for the Hasmonean palace-fort suggests that it had been in common use since at least the 2nd century BC. The fact that the author of the *Letter of Aristeas* (Late Hasmonean) described a citadel in Jerusalem by its Greek name, *akra*, rather than by *baris*, hints at the possibility that the latter word was more common in Palestine than Alexandria, where the letter was most likely written. Moreover, the manuscripts of the Septuagint, which were being codified during the 3rd and 2nd centuries BC, treat the word rather diffidently, as though it were either an uncommon expression or one whose synonymity with the Hebrew *biyrah* or Aramaic *biyrṯa'* was not clearly understood by some of the early authors/editors. The Septuagint is widely believed to have been canonized in Alexandria; there, the word *baris* was already established during the Early Hellenistic period, and meant a kind of flat-bottomed boat. The homonymic form meaning 'castle' or 'palace' may have been a source of confusion for some of the Alexandrine translators. Moreover, if they were unsure of the meaning of Hebrew *biyrah* or Aramaic *biyrṯa'* they may well have elected to omit reference to the word in translation. A phenomenon of this kind occurs on a trilingual inscription from Turkey, dated to the mid-4th century BC: the Aramaic version refers to the *birah* (i.e. akropolis) of Orna (Xanthus), whereas the Greek and Lycian versions neither translate nor transliterate this word (Lawrence 1979, 457 n.9).

The word *baris* might possibly have been more common in Palestine and Asia Minor during the Hellenistic period, though its date and mechanism of introduction are not at all clear. The terminal *sigma* points to a source other than Hebrew *biyrah* as the direct antecedent. Possibly, as Walters suggested (1973, 304), the antecedent was Aramaic *biyrṯa'*, i.e. 'fort' or 'palace', itself derived from Assyrian *birtu*, with the *taw* becoming a *sigma* in the Greek. Aramaic was the *lingua franca* of Palestine during the post-exilic period, so a literal translation into Greek would not have been out of place. If this were the mechanism involved, one might venture to say that the Hasmonean ruler Hyrcanus I chose the Semitic term for 'fortress' in preference to the traditional Greek terms (*akra* and *akropolis*) for propaganda reasons. On the other hand, the word *baris* may have circumvented the Semitic language groups, being extracted directly from Old Persian or Elamite. There are several ways by which words of Old Persian or Elamite origin could have entered Palestinian vocabulary during the first millennium BC. The earliest infusion may have occurred during the Late Israelite period with the mass transportation of Elamites and other eastern tribes into the northern hill country of Palestine by the Assyrians. These foreign groups developed into the Samaritans during the post-exilic period. Alternatively, the word may have arrived in its Old Persian or related forms during the Achaemenid period, given the distinct parallelism between the *biyrah* or Susa and Ecbatana and the *baris/biyrah* in Achaemenid Jerusalem. The Old Persian word might then have been rendered literally into Greek during the 3rd or 2nd centuries BC, as *baris*. A third possibility is that the word was borrowed

into Greek from Old Persian in Syria during the Seleucid period (3rd century BC), and was then introduced into Palestine along with Seleucid political control during the early 2nd century BC. Since this was the time when the Alexandrine authors were engaged in translating the Hebrew and/or Aramaic versions of the Bible into Greek, the word *baris* might not at that stage have become quite as widespread in Egypt (still under Ptolemaic control), resulting in its frequent omission from the earlier edited manuscripts (and the subsequent reinsertion of the word into the Septuagint at a later date, when its meaning had become widely recognized).

The *Baris* was more than just a fortress protecting the Temple enclosure. It was also the fortified residence of the high priest, in the same way that the *biyrah* of Susa was the fortified residence of the Achaemenid king. Josephus related that Hyrcanus I spent most of his time in the *Baris* rather than in the Hasmonean family palace on the southwest hill (*Ant.* XVIII.91). It may be assumed that Hyrcanus' successor, Alexander Jannaeus, also resided in the *Baris* whenever he was in the city, given the warlike and volatile nature of his reign. Within the *Baris* were stored the sacred vestments worn by the high priest for Temple sacrifices (*Ant.* XV.403; this function was subsequently assumed by the Antonia). In consequence, there must have been direct access between the *Baris* and the Temple enclosure to circumvent defilement as the high priest proceeded from one to the other. But the Hellenistic Temple enclosure did not extend as far north as its Herodian successor; rather, its north wall probably coursed along a line joining the Golden Gate and *bāb an-nazīr*, fronting a shallow cross-valley underlying the northern part of the *Haram*. The connection between *Baris* and Temple was presumably over the land-saddle just east of the present *bāb-as-sarāi* and *bāb an-nazīr*, though how the communication was effected is a matter for conjecture. It may be assumed that the connecting saddle between the two edifices was completely enclosed by spur walls, both to effectively protect the high priest and so as not to leave the fortress in an isolated, vulnerable position. The spur walls may have been functionally related to Josephus' 'Second Wall', which was built sometime before the reign of Herod the Great, and which must have terminated at the *Baris*. Perhaps the latter was the more strongly fortified northeast corner of the Second Wall.

Josephus' description of Pompey's siege supports these assumptions, with its allusions to the *Baris* and its associated fortifications:

> 'Early next morning Pompey pitched camp on the northern side of the Temple, from where it could be easily attacked; but even here rose great towers and a ditch had been dug and a deep ravine surrounded it' (*Ant.* XIV.61).

The 'great towers' mentioned here probably refer to the *Baris*, which was separated from the northern part of the land-saddle by a ditch, and which formed a single defensive bastion along with the Second Wall and Temple enclosure. The ditch and towers are mentioned in the same historical context in *War* I.145–47, where the towers are described as being 'unusually large and beautiful', which again can best be interpreted as towers belonging to the *Baris*.

Of the form and extent of the *Baris* almost nothing is known, except that it was rectangular and possessed several high towers. One such went by the name 'Straton's Tower' (*Ant.* XIII.309). As a combined royal residence and military barracks, the *Baris* would have contained administrative and domestic units, perhaps arranged around small colonnaded courtyards. Josephus mentioned a subterranean chamber or passage (*hypogeion*) beneath the *Baris*, which was presumably entered down a flight of steps near the northwest corner of the Temple enclosure (*Ant.* XIII.307; *War* I.75). This hypogeum has been identified by several scholars with a long, rock-cut passage outside the northwest corner of the *Ḥaram*, which will be described and discussed in the next section.

The Herodian Antonia

Herod the Great rebuilt the *Baris* sometime between 37 BC (the year he gained control of the city) and 31 BC (the year of Mark Antony's death). It was renamed 'Antonia' in appreciation of Antony's help during Herod's struggle for political supremacy. There was probably an element of propaganda involved as well: it would have been to Herod's advantage to dissociate the fortress from the Jewish nationalist ideal symbolized by the name *Baris*, and by adopting the name Antonia to link the fortress with Roman interests. Despite Mark Antony's fall from grace, his name clung to the fortress until its destruction in AD 70.

The Antonia served as Herod's principal residence in Jerusalem for about fifteen years, before he moved into a new and large palace in the Upper City (*c.* 24 BC; *Ant.* XV.292, 318). The Antonia's functions were thenceforward limited to defence of the Temple area. Within a few years of Herod's removal to the Upper City (*c.* 22/19 BC), work on the new Temple enclosure began. The Temple esplanade was extended on the north and west up to the very façade of the Antonia (for work on the Temple see *War* I.401 ff.). During the Roman occupation of Judea in the 1st century AD a cohort of soldiers was stationed permanently in the Antonia to control crowds in the Temple precincts (*War* V.244). The Roman prefect/procurator, domiciled in Caesarea Maritima, came up to Jerusalem at Jewish festivals when there was a greater chance of civil disturbance. On these occasions he resided with his praetorian bodyguard in Herod's palace in the Upper City. The Roman cohort held the Antonia until AD 66, at which time it was expelled by Jewish insurgents, who then occupied the fortress until its destruction by Titus four years later.

Josephus has provided a quite detailed description of the Antonia's appearance and organization. Its interior was, of course, off-limits to Jews, so his overly effusive account of its interior is likely to be an exaggerated rendition of descriptions obtained at second or third hand. Nevertheless, his basic list of features and appointments is probably accurate enough (*War* V.238–41): courtyards, both private and for the use of the cohort, cloisters and chambers, the most important ones decorated in Augustan style. Unfortunately nothing of this magnificence survived the catastrophe of AD 70.

The Jewish historian's description of the exterior of the Antonia is detailed and sober (*War* V.238–42):

> It had been erected upon a rock fifty cubits high, on all sides steep . . . For in the first place the rock had been covered from the foundations with smooth slabs of stone, both for beauty and in order to cause all who tried to ascend or descend it to slip off. Then, in front of the structure of the tower was a wall of three cubits, on the inner side of which the whole height of the Antonia rose up to forty cubits . . . The whole scheme of the thing was towerlike, with other towers arranged at each of the four corners; that at the southeast corner rose to seventy cubits, while the others were fifty cubits high.

The fortress' organization was straightforward: a foundation carved out of the rock with high scarps on all sides, revetted with smooth-faced ashlars to prevent sapping and scaling; around the top of the scarped foundation a low forewall (more likely three cubits in height rather than width); the built superstructure of the fortress inside the forewall, rising to about 20 metres; at each of the corners a square tower rising about 5 metres higher than the roof of the fortress, with the southeast tower – directly overlooking the Temple courts – rising a further 10 metres. These figures are likely to be fairly accurate, within 5 or 10 metres, but as will be shown later, Josephus' estimate of the height of the rock platform, which was hidden behind masonry during his time, was much less accurate. Herod may have heightened and/or extended the scarp around the *Baris*, and improved the rockcut ditch across the fortress' northern side (*War* V.149–50). A ditch would have been required only along this face, where a land-saddle connected the northeast hill to the spur on which the Baris and Antonia had been built; to east and west bedrock sloped down into St Anne's and the Tyropoeon Valleys respectively.

The structural connection between Antonia and the Temple enclosure is sketched in a number of passages:

1. *War* V.238: 'The tower of Antonia lay at the angle between two porticoes, the western and the northern, of the outer court of the Temple';
2. *War* II.330: 'they immediately went up onto the adjoining porticoes next to the Antonia and severed the connection';
3. *War* V.243: 'At the point where [the Antonia] joined to the porticoes of the Temple there was a descent to both of them, by which the garrison came down';
4. *War* VI.165: 'The western part of the northern portico was set on fire . . . where it joined the Antonia';
5. *War* VI.166: 'two days later . . . the Romans set light to the adjoining portico . . . and severed the connection thereby formed with Antonia'.

The first four passages either state or imply that the north and west porticoes met at an angle, and that the Antonia was joined to them at this angle. Thus the fortress did not in any way impinge on the area of the Temple court, but clasped the outside of its northwest corner. One other passage seems to suggest otherwise (*War* V.192): 'The porticoes were thirty cubits broad, and the complete circuit of them amounted to six stadia, including also the Antonia.' The verb *perilambanō* used here means to

'embrace, encompass, surround, enclose, contain, encase, or include' (cf. *Ant.* XV.291, 413, XIV.446). Hence one might gain the false impression that the porticoes completely surrounded the fortress. But along the north side its superstructure rose up directly behind the rockcut ditch and forewall. Moreover, the Roman general Titus was forced to capture and demolish the Antonia *before* he could gain access to the Temple porticoes. So for these reasons alone the northern portico could not have extended along the northern side of Antonia. By the same token, the western portico could not have extended along the fortress' western flank, since both porticoes met at an angle. The expression *perilambanomenēs kai tēs Antōnias* should be translated as 'including also/additionally the Antonia', which stood outside the limits of the porticoes but was so closely connected with the Temple enclosure as to be counted an integral part of it. Thus any reconstruction of the Antonia's ground-plan which has it extending into the area of the Temple enclosure contradicts the testimony of Josephus, either because it severs the connection between the western and northern porticoes (de Vogüé 1864, Pl.XV; Cohn 1979, Fig. 1b; Dalman 1930, 114ff., 120; Bagatti 1962, 19; *idem.* 1973, 441), or requires the insertion of reëntrant angles in both porticoes in order to effect a connection between them. The fortress stood at the northwest corner of the Temple enclosure, and outside it. Where, then, did the western and northern porticoes meet?

The western enclosure wall of the Herodian Temple has now been traced along its full length from the southwest corner as far as the present *bāb as-sarāi* (a distance calculated at 488 metres; see Bahat 1988, 3). Charles Warren found a small section of the western portico's rear wall just south of this gate (Fig. 4A:9). The inner face of the portico wall would have continued to the north for about 4 metres as a vertical rock scarp that rises steadily in height from about 1 metre in the south to 6 metres in the north (Figs 1:2, 4:7b; see Wilson 1880, Figs 9, 9a; the scarp is not as regular now as it once was, and has been modified to receive the steps fronting *bāb al-ghawānīma*; the exact line of the Herodian west wall in this area is complicated by Bahat's discovery that north of the *bāb an-nazīr* it had been built 3 metres west of its normal line; see Bahat 1988, 10). At its southern end (just north of *bāb*

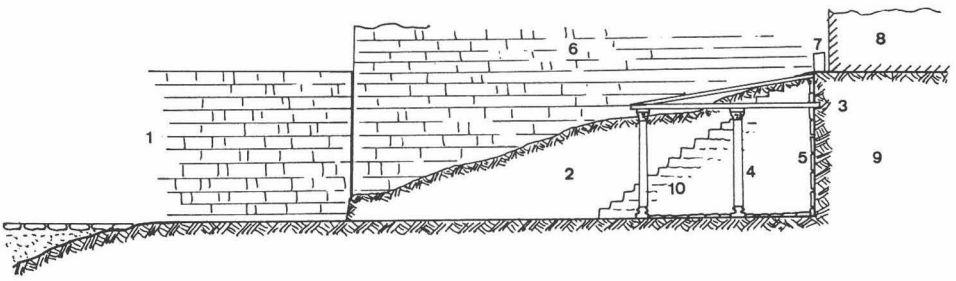


Fig. 1. Sketch elevation and section of northwest corner of Herodian Temple Enclosure. 1: rear wall of western portico; 2: face of north-south scarp of Antonia; 3: mortise for roof beams cut into scarp; 4: northern portico; 5: stone facing against scarp; 6: Antonia fortress' superstructure; 7: forewall around fortress; 8: north-south section through fortress; 9: scarped podium; 10: steps.

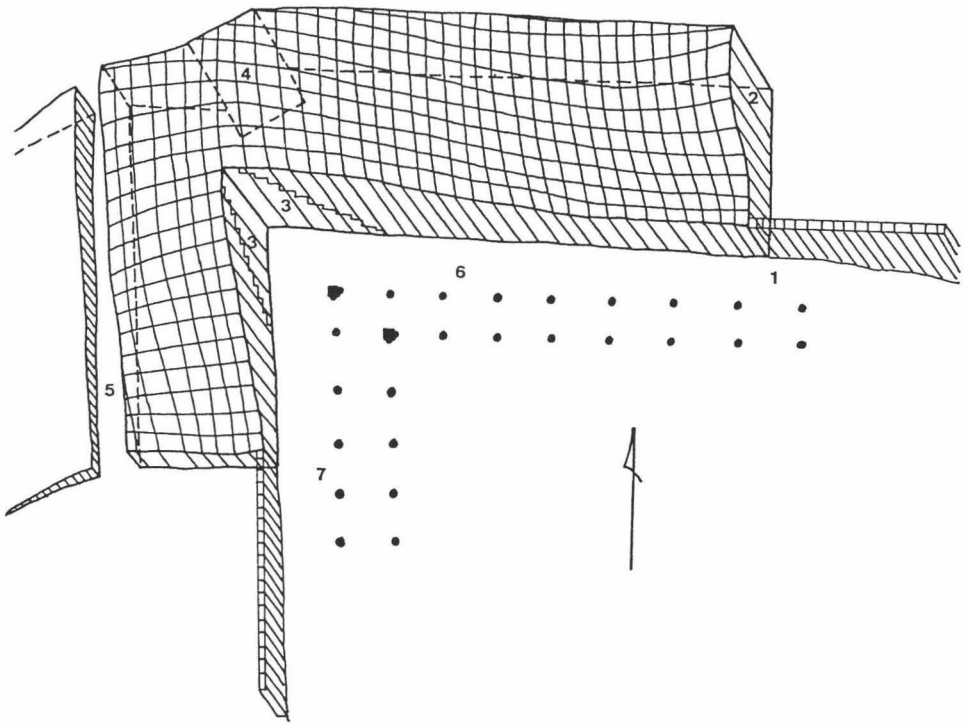


Fig. 2. Axonometric projection of scarped rock podium at northwest corner of the *Ḥaram*. 1: rear wall of Herodian northern portico; 2: north-south scarp; 3: approximate position of steps down from Antonia to porticoes; 4: scarpface above the 'Twin Pools'; 5: possible ditch along west flank of Antonia; 6: Herodian northern portico; 7: Herodian western portico.

as-sarāi) the scarp turns to the west and runs on for about 9 metres before it is covered by modern buildings; so its precise western limit is unknown.

The line of the northern portico's rear wall is indicated by the Herodian T-intersection at the so-called 'Tower of Antonia' near the *Birkat Isrāīl*. From there it passed behind the pool and continued west for some 220 metres, ending against a rock scarp (Fig. 2:1). The inner face of the portico's rear wall then continued westward for another 112 metres as this same vertical scarp, which stood between 8 and 12 metres high, joining the north-south scarp described above (Figs 1:9, 2, 4:7a). At the point where the northern portico wall ends, the east-west scarp turns with a right angle to the north (Fig. 2:2). Warren traced it for about 12 metres before it disappeared beneath modern structures. The scarp rises steadily in height toward the north, and at its point of disappearance stands at least 6.5 metres high (the rock along the foot of the scarp was not reached by Warren).

The high rock scarp defining the northwest corner of the *Ḥaram ash-Sharif* was created during the Herodian period by quarrying the bedrock down to the level of the Temple esplanade (the Hasmoneans are unlikely to have altered the rock conformation significantly). The southward fall-off in height of the scarp probably reflects the original slope of the connecting saddle. Also, the 12 metres maximum

height of the scarp's east-west face is probably its original height. In some places one can still see large ashlar blocks on top of the scarp beneath the smaller Ottoman masonry. These ashlars might have belonged to the fortress' substructure, placed there to create a level platform on the uneven and sloping surface of the scarp. The east-west scarp-face is pierced at intervals by large square mortises, intended for the reception of horizontal wooden beams. Again it is possible that these are vestiges of the Herodian portico (see Fig. 1:3).

The surface of the rock podium was left in its natural state (as far as one can tell), sloping down to the south and east from its highest point at the northwest corner. The lower parts of the podium would have been built up level with the summit of the rock by masonry and fills to create a solid platform about 12 metres high. The scarped faces of the rock podium were probably revetted with stone in accordance with Josephus' description, so that the rock core came to be hidden behind the masonry encasement (Fig. 1:5). The superstructure was built on top of the rock-and-masonry podium, embracing the corner in an L-shaped arrangement (Fig. 2). In *War* V.243 Josephus described the steps that led down from the top of the rock podium to the two porticoes: 'At the point where [the Antonia] joined to the porticoes of the Temple there was a descent to both of them, by which the guards came down . . .' The stairway is also mentioned in *Acts* 21:35, where the Antonia provided the backdrop for Paul's arrest by the Roman soldiers. The steps, which have not survived, were either built of masonry or quarried out of the rock at the time the porticoes were constructed (see Figs 1:10, 2:3). The eastern and southern limits of the fortress are probably given by the scarps that turn at right angles away from the Temple enclosure. The eastern scarp, as mentioned above, rises toward the north with a height of more than 6 metres. Since it does not reappear on the northern side of *Tarīq Bāb Sitti Miriam*, one may assume that it turned back toward the west along the south side of that street (Fig. 3:10). Indeed, the scarp was encountered about 110 metres west of the podium's assumed northeast corner, directly underneath the modern street (Fig. 2:4). Here the scarp stands about 12 metres high and faces toward the northwest over a length of 14 metres. West of this point the scarp has not been traced; but given the fact that bedrock begins to fall off rapidly into the Tyropoeon Valley just beyond the northwest corner, one can imagine the western scarp to have been either very low or absent altogether (Fig. 2:5).

The scarped podium presents itself as an isolated unit with the appearance of a strongly projecting corner tower or bastion, covering an area of between 7000 and 8000 square metres, certainly large enough to accommodate the multitude of courts, cloisters and chambers described by Josephus. But does the rock podium represent the full extent of the fortress? This is the point where scholarly opinion has divided into two camps: (1) the 'maximalists', for whom the Antonia extended well to the north and northwest of the rock podium, into the grounds of the Convents of the Flagellation and Our Lady of Sion north of *Tarīq Bāb Sitti Miriam* (Fig. 3:6, 7); (2) the 'minimalists', who regard the rock podium as the full extent of the fortress. The 'maximalist' position was adopted by Sister Marie Aline de Sion,

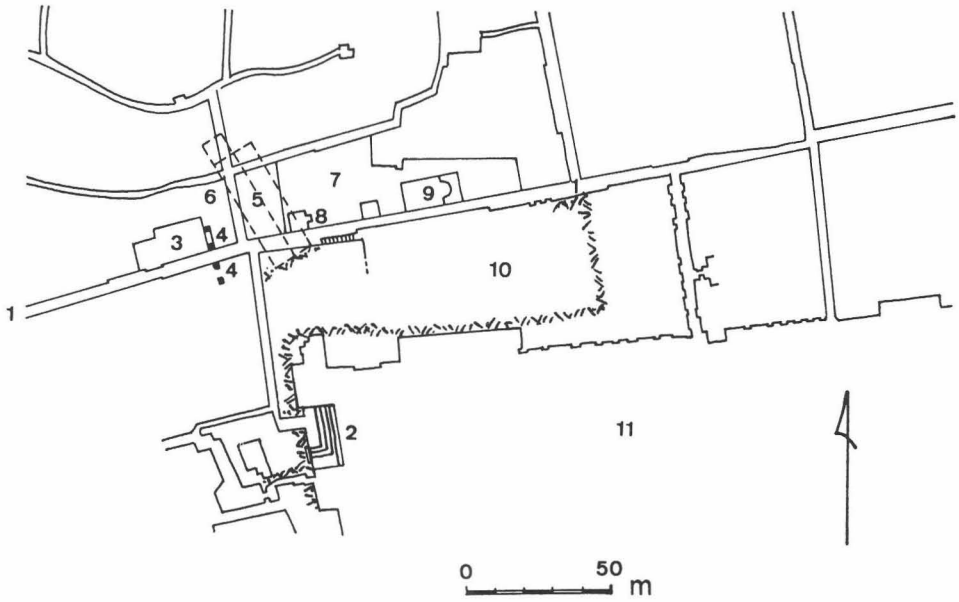


Fig. 3. Modern structures and ancient remains north of the *Ḥaram*. 1: *Tarīq Bāb Sitti Miriam*; 2: *bāb al-ghawanīma*; 3: Church of Our Lady of Sion; 4: *Ecce Homo* arch; 5: 'Twin Pools'; 6: Convent of Our Lady of Sion; 7: Convent of the Flagellation; 8: Chapel of the Condemnation; 9: Chapel of the Flagellation; 10: scarped rock podium; 11: *Ḥaram ash-Sharīf*.

who conducted excavations in the basement of the Convent of Our Lady of Sion, and was further elaborated by the Dominican archaeologist Père Vincent (Aline 1955; *idem*. 1957; Vincent and Steve 1954, 193–221; Vincent 1933, 83–113; *idem*. 1934, 157 ff.; *idem*. 1937, 563–70; *idem*. 1952, 513–30; *idem*. 1954, 87–107; cf. also Avi-Yonah 1968, Figs 1, 6, and Ita de Sion 1968). This viewpoint prevailed until the 1950s, and is still widely accepted. In 1952 another Dominican scholar of the École Biblique in Jerusalem, Père Benoit, questioned certain aspects and assumptions of Vincent's synthesis, especially in regard to the textual evidence (Benoit 1952, 531–50; this was essentially a critique of Vincent 1952). Some twenty years later Benoit expanded his critique to include the archaeological evidence, advancing some compelling arguments for the attribution of much of Vincent's 'Greater Antonia' to the time of emperor Hadrian (Benoit 1982; restated briefly in *idem*. 1975, 87–9; cf. also Wilkinson 1979, 59, Fig. 42, who accepted Benoit's argument). In order to assess the merits of these and other reconstructions of the fortress, it will be necessary firstly to examine the architectural and orological remains in the convents north of *Tarīq Bāb Sitti Miriam*.

Near its northwest corner the scarp of the rock podium changes direction slightly to face toward the northwest over a distance of 14 metres (the lowest 3 metres of the scarp are slightly angled with respect to the upper 9 metres, which are vertical; perhaps this technique had been carried along the whole northern flank of the scarp; see Fig. 4B). The reason for this short and unusual change in direction is the

presence of a rectangular, rockcut pool at the foot of the scarp (Fig. 4:1; see also the plans and elevations in Vincent 1954 and Aline 1955). The pool is orientated from northwest to southeast, parallel to the axis of the connecting saddle, and measures about 52 metres by 14 metres. The pool's depth increases from about 4.5 metres near its northern end to about 6 metres at the south. The long walls are not horizontal but drop steadily in height toward the south, though not to the same degree as the pool's floor. The south face of the pool is flush with the rock scarp above it; the slightly angled lower face of the scarp is carried down to the bottom of the pool. The northern end of the pool is also flush with the base of a rock scarp about 10 metres high (Fig. 4B; for dimensions, see Aline 1955, 66). There is no doubt that the pool was created at the same time as the rock podium, since it was the orientation of the pool that conditioned the slight directional change of the podium's northwest corner.

The pool had been approached originally along its long sides by a series of rockcut steps, regularized at various places by masonry and covered by a waterproof mortar composed of chalk and ashes (Figs 4A:2, 5:4; Bagatti 1979, 50; the steps were noted by Aline and Vincent, but not discussed in any detail; their plans of the steps are highly schematic). Bagatti exposed a portion of the steps beneath the Chapel of the Condemnation along the east side of the pool (Fig. 3:8). The highest step was found about 5 metres from the pool and 3.5 metres above it (Bagatti 1979, Fig. 17). Fifteen metres further east (Fig. 5A: Point C) bedrock is

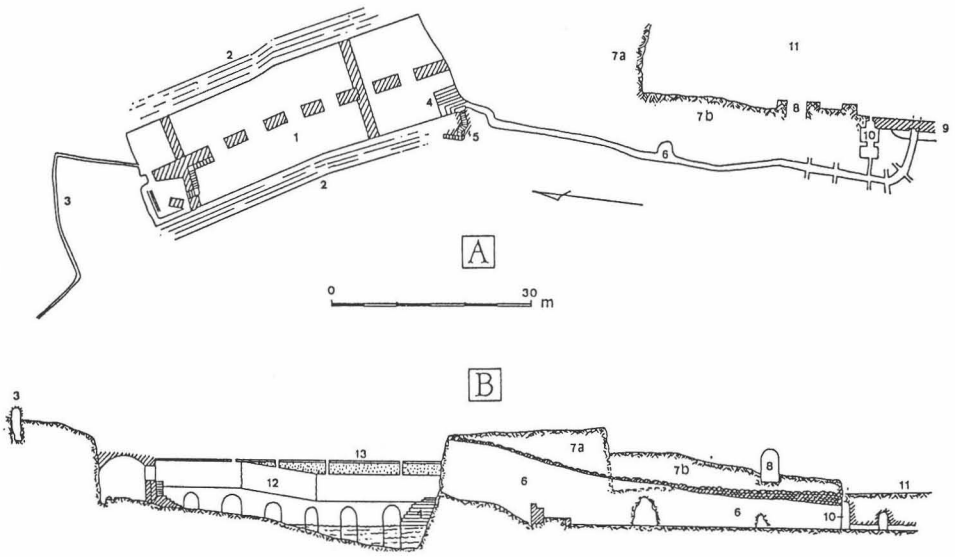


Fig. 4. Plan and Section through 'Twin Pools' and Subterranean Passage (after Wilson 1880; Aline 1955, Pl. 22). 1: 'Twin Pools'; 2: rockcut steps; 3: northern channel; 4: rockcut steps; 5: masonry-built stairwell; 6: rockcut passage; 7a/b: north and west scarps of the rock podium; 8: *bāb al-ghawanīma*; 9: rear wall of Herodian western portico; 10: *bāb as-sarāi*; 11: esplanade of *Ḥaram*; 12: central partition wall of pool, and vaults above; 13: pavement.

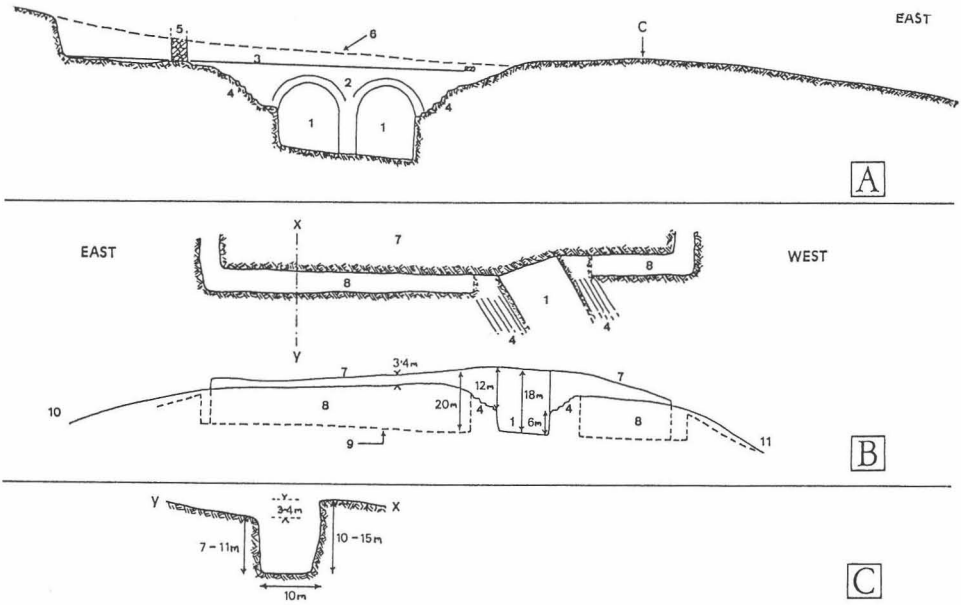


Fig. 5; Sketch plan and sections of rock levels in the vicinity of the 'Twin Pools'. 1: 'Twin pools'; 2: vaults; 3: stone pavement; 4: steps; 5: north pier of *Ecce Homo* arch; 6: probable original rock level; 7: scarped podium; 8: ditch; 9: possible bottom of ditch; 10: St. Anne's Valley; 11: Tyropoeon Valley.

about 4.5 metres higher than the level of the highest step (Bagatti 1979, Pl.XXV:C, in the cloister of the Convent of the Flagellation). So there were probably more steps to the east of those mentioned by Bagatti. The steps along the pool's west side probably emulated those along the east, since 10 metres west of the pool's mid-point, bedrock has been found (beneath the northern pier of the *Ecce Homo* arch) about 5 metres above the level of the pool's western wall (Fig. 5A:5). The western steps probably would have begun a few metres east of the *Ecce Homo* arch.

The eastern steps have not been traced beneath, or south of, *Tarīq Bāb Sitti Miriam*. In fact, bedrock has not been exposed at all under and south of this street. If one supposes that some of the steps extended up to the rock podium's northern scarp, then it can be calculated that the height of the podium fell very rapidly from about 12 metres above the pool to about 3 or 4 metres opposite the entrance into the Convent of the Flagellation (Fig. 5A: Point C; the rock at this point is about 3 metres lower than the top of the rock scarp south of the street). But as mentioned above, the eastern side of the scarped podium stands more than 6.5 metres high. In other words, the foot of the scarp here is about 3 or 4 metres *lower* than the rock level at the eastern end of the Convent of the Flagellation. One way to account for this discrepancy in levels would be to posit the existence of a rock-cut ditch along the northern foot of the scarped podium, running eastwards from the pool (Fig. 5B:8, 5C). The bottom of the ditch may have coincided with the top of the pool's east wall, thus maintaining a 12 metre height for the north face of the podium.

Further to the east the bottom of the ditch may have been lowered in conformity with the fall-off in level of the top of the podium, so that at the latter's northeast corner the scarp would still have been 7 or 8 metres high, if not more; the ditch would then have turned the corner around the eastern flank of the podium (Fig. 5B). A similar situation is to be reconstructed west of the pool as a result of (1) the rapid rise of bedrock between the pool's western wall and the *Ecce Homo* arch, and (2) the fairly steep fall-off in level of the top of the podium toward the Tyropoeon Valley (Fig. 5B). A similarly narrow ditch can be postulated for this side as well, terminating at the northwest corner of the podium or perhaps returning along its western flank with a much-reduced height (Fig. 2:5). If the ditch had extended right up to the edges of the pool, then it could not have been any lower than the top of the pool's walls, because the latter have been traced up to the northern face of the podium. On the other hand, it is quite possible that a rock wall had been left between the pool and ditch, enabling the latter to be deepened indefinitely (Fig. 5B:9), thus giving to the north face of the podium a height of 20 metres or more. This would be more in accord with Josephus' statement that the fortress had been erected upon a rock 25 metres high (but only along the north side). At any rate, the north-south width of the ditch could not have been more than about 10 metres, given the level of bedrock in the Convent of the Flagellation.

The pool is the only one known that stands in close association with the site of the Antonia. It can be identified with little hesitation, therefore, as the 'Strouthion' pool mentioned by Josephus in connection with Titus' siege of the Antonia (*War* V.467). This identification has been accepted by the vast majority of scholars (see Warren and Conder 1884, 295, which first elaborated the thesis identifying the pool with Strouthion).

At the southwest corner of the pool a series of rockcut steps (Fig. 4:4) leads one up to a high and narrow opening in the corner, whose threshold is about 9 metres above the floor of the pool. This opening is the terminal point of a rockcut passage that runs south for about 34 metres before turning to the east near *bāb as-sarāi* (Fig. 4:6). At that point the passage was severed and blocked by the Herodian enclosure wall (Bahat 1988, 10–12; the cutting is now clearly visible as a result of clearances within the tunnel by the Israel Ministry of Religious Affairs). The original southern termination of the passage remains unknown. It may well have debouched into one of the rockcut cisterns under the northwest corner of the *Ḥaram* (this matter has been discussed at length in Cohn 1979, 48 ff.; suggested also by Bahat 1988, 12, Map A:15). A short distance south of the pool the passage jogs abruptly to the west and then resumes its former course; a little further on its floor drops by about 4 metres and maintains that level for the remainder of its course (cf. Bahat 1988, 13, which does not show the drop in rock level, as on Warren's original section). The ceiling of the passage, on the other hand, progressively reduces in height from about 9 metres to 2.3 metres in conformity with the slope of the rock surface above. The ceiling itself is not rockcut but composed of large stone blocks. Since the ceiling and adjacent rock surface have yet to be studied from the outside, it remains uncertain whether the passage originally had been subterranean – and was only

later exposed through quarrying back of the rock – or whether it had been an open passage from the beginning. The ceiling slabs may belong to the time of Herod, though further investigations will be needed to verify this. At various points along its length, small excavations had been made in the walls of the passage, resulting in shallow cul-de-sacs and passages (according to Bahat these were dug to direct water into the main passage, but this conjecture needs further study; Bahat 1988, 13).

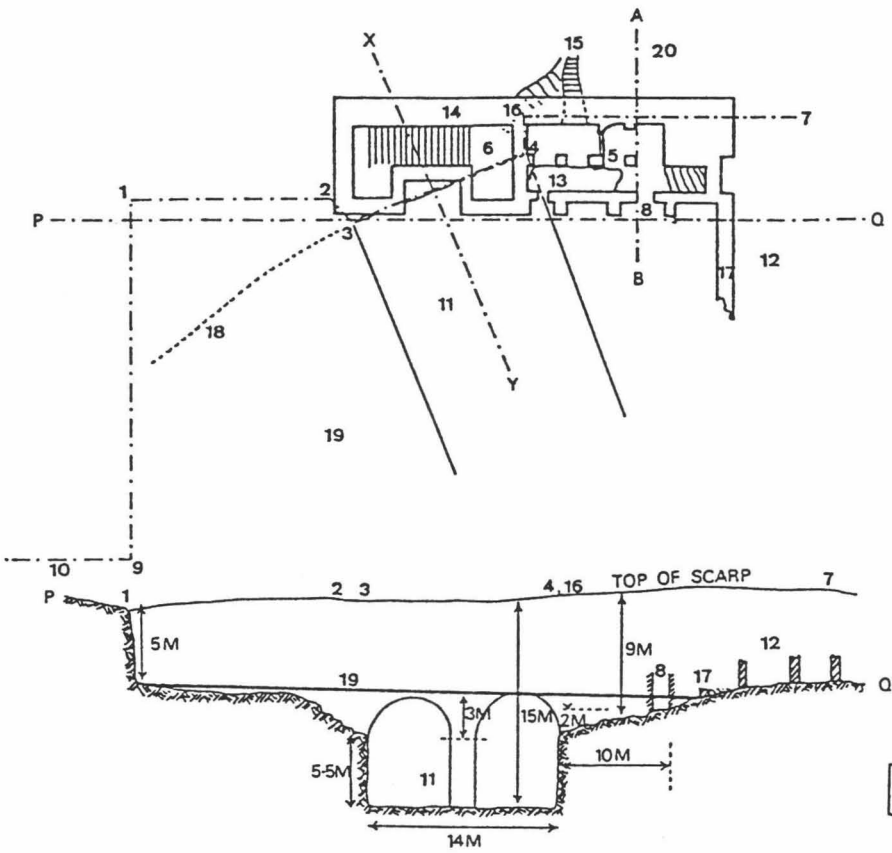
The passage must be earlier than the Herodian enclosure wall. If it had served as a water conduit for one of the cisterns inside the *Ḥaram* then that function terminated with the construction of the Herodian enclosure. How much earlier than this was the passage cut? A date earlier than the Hellenistic period can be ruled out, since the passage terminates well outside the limits of the Israelite and Persian walled towns. A 3rd century BC date *might* be supportable *if* the Ptolemaic citadel had stood in the same area as the Hasmonean *Baris*. That it bears some functional relationship to the pool is suggested by the presence of rockcut steps between the passage and the bottom of the pool. The level of water in the pool was never high enough to spill over into the passage (the top of the pool at its southern end being 3 metres lower than the floor of the passage; cf. Bahat 1988, 13; the section drawing by Ritmeyer differs from Warren's original; any water that had overflowed into the northern end of the passage would have been stopped by the dam wall situated about 15 metres from the pool; south of this the passage would certainly have remained dry). So presumably at the time the pool was cut the passage had been dry, used perhaps as a secret means of access to the pool from within the fortress or Temple enclosure. The pool and scarped podium, and therefore the passage as well, are at least as early as the construction of the Antonia (37–31 BC). But if the passage had at one time been used as a water conduit for a reservoir (which is likely, though unproven), then it must have been cut some time before the scarping of the rock podium and excavation of the pool, since the latter undermined the passage's viability as a water conduit. Of course, if the passage had never been intended to carry water it could well have been cut along with the pool and podium to serve as a subterranean access to the water supply (it may be noted, in this regard, that the large cisterns under the northwest corner of the *Ḥaram* might have been used originally as entrances into the subterranean passage rather than as cisterns).

Assuming for the moment that the passage had been used as a conduit prior to construction of the pool and rock podium, it must have extended some distance north of its present inlet to the pool. At about 20 or 30 metres north of this point the floor of the passage would have been close to the original level of bedrock. How the passage accommodated itself to the rock conformation in this area is now impossible to determine. Perhaps it had opened into a shallow pool built into a natural depression on the connecting saddle, but at a higher level than the present pool. Alternatively, the passage may have continued even further to the north. In 1871 a similar passage was discovered extending from a pit outside, and east of, the Damascus Gate, and debouching into the northeast corner of the pool (Fig. 4:3; Warren and Conder 1884, 163–4; Wilson 1880, Fig. 9; Aline 1955, Pls 13, 14). This

passage is less than 1 metre wide and up to 4 metres high; its lower parts are rock-cut, while the present roof is a stone arched vault. Warren and Conder assumed that it had served to bring water to a reservoir on the Temple Mount. The floor of the northern channel is about 10 metres higher than that of the southern passage at the points where both open into the pool. This difference echoes approximately the slope of bedrock from northwest to southeast; so it is not inconceivable that the two passages had at one time formed a single, open-air aqueduct. Yet the construction date of the northern channel is not as clearly defined as the southern. Since the pool remained in use down to modern times, the northern channel could have been cut any time before, during or after excavation of the pool. There is no certainty that it bears a functional relationship to the southern passage, despite their similar structural features.

If much of the above seems hypothetical, it is because of the changes to rock conformation wrought during construction of the pool and rock podium. Two things are certain: (1) that the northern channel did at some time bring water into the pool, and (2) that the southern passage – whether or not it had been cut before the pool – was not used as a conduit but as a subterranean access to the pool. The southern passage has often been identified as the *hypogeion* mentioned by Josephus in connection with the *Baris* (*War* I.75; *Ant.* XIII.307). This association would be plausible only if the passage had been dry during the Hasmonean period (Josephus gave no indication that the hypogeum was a water conduit, and indeed the contexts in which it occurs render such a function very unlikely). In other words, the identification carries with it the corollary that the pool and rock podium had been cut as part of the *Baris*, and were later incorporated without substantial changes into the Antonia. This is a possibility worth considering, for Josephus also mentioned that the *Baris* had been surrounded by a ditch (*War* I.145–7; *Ant.* XIV.59). There are no grounds for assuming that the Hasmoneans had quarried back the rock on the south side of the *Baris*; but on the north side (and possibly on the east and west as well) the present scarp may have originated with the *Baris*. At the present time all that can be said is that the pool and the northern face of the rock podium were cut sometime between about 135 BC and 31 BC. There are no other likely candidates for Josephus' hypogeum, but it is worth emphasizing that the rock podium has not been investigated except for various parts of its outer face; the interior, beneath the Ottoman Umarriyah School, is still *terra incognita*.

The rockcut basin of the pool is covered by two longitudinal barrel vaults that spring from the side walls and from a wall along the centre of the pool pierced by a series of arches (Figs 4B:12, 5A:2, 6A). This central partition is responsible for the present name, 'Twin Pools'. It is built up level with the height of the rock walls of the pool. As a result, it declines in three sections toward the south in conformity with the pool's walls; the first and last sections are horizontal, the middle one sloping. This segmental arrangement is carried up into the vault, whose central section is rather clumsily integrated with its neighbours. Associated with the barrel vaults is an east-west partition wall near the northern end of the pool, and a rectangular masonry stairwell at the southwest corner near the rock-cut steps (Fig.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19
8·5M
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C

4A:5). The stairwell has yet to be studied in detail, though it seems to have been built as a replacement for the rock-cut southern passage described earlier (similarly constructed stairwells were included in the towers of the Roman Damascus Gate, dating to the 2nd century AD; Bahat 1988, 15, also suggests a 2nd-century-AD date for the pool's stairwell).

The decision to build twin longitudinal vaults rather than a single vault was not conditioned by technical limitations (a barrel-vaulted span of 14 metres was feasible, given the 13 metre spans of the Herodian Wilson's and Robinson's Arches), but by the preconceived design for structures supported by the vaults. The *raison*

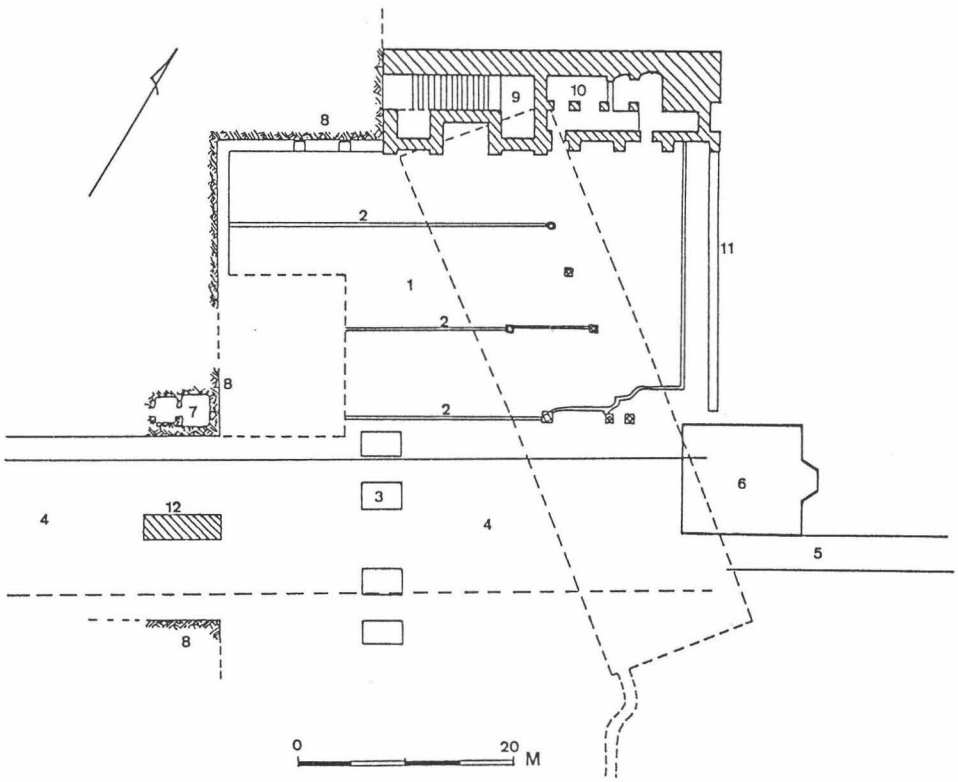

Fig. 7. Plan of structures above and around the 'Twin Pools' (after Vincent 1933, Pl. VII). 1: pavement; 2: water channels; 3: *Ecce Homo* arch; 4: 'striated' pavers; 5: *Tarīq Bāb Sitti Miriam*; 6: Chapel of the Condemnation; 7: rockcut tomb chambers; 8: rock scarps framing pavement; 9: north gallery, western chamber; 10: north gallery, eastern chamber; 11: step along east side of pavement.

Fig. 6; Sketch plan and sections of rock levels and structures around the 'Twin Pools'. 1: scarp at northwest corner of pavement; 2, 3, 4: line of scarp along north side of pool; 5: north gallery, east chamber; 6: north gallery, west chamber; 7–16: possible line of rock scarp; 8: doorway up onto pavement; 9: southeast corner of rock scarp within *Ecce Homo* church; 10: scarp bordering 'striated street', within *Ecce Homo* church; 11: 'Twin Pools'; 12: structures east of the pavement; 13: hydraulic installations cut into rock; 14: north gallery; 15: rock steps up to 'silo chamber'; 17: step along east side of pavement; 18: possible original line of scarp 4–3; 19: pavement; 20: 'silo chamber'.

d'être of the vaults was to support a broad flagstone pavement that covered almost the whole area of the pool and extended well beyond it towards the west and northeast (Figs 4B:13, 5A:3, 6:19, 7:1). The level of the pavement was conditioned by that of the rock on either side of the pool: a single vault would have raised the pavement far above the desired height, whereas a double vault kept the ceiling of the pool low enough to keep the pavement at about the same level as the highest point in bedrock to the east (in fact, bedrock near the entrance into the Convent of the Flagellation is about 2 metres higher than the pavement).

Elements of the pavement first emerged during construction of the Convent of Our Lady of Sion, and further sections have been uncovered since then, eastward as far as the Convent of the Flagellation (Bagatti 1979, Fig. 15, Pl. XIX). In all, the pavement covers a rectangular area of approximately 2200 square metres, well defined on all sides except the south, which remains conjectural (Fig. 7:1). The flagstones are founded on a bed of hard cement mortar laid over bedrock or on the vaulting of the pool. The surface of the pavement shows some peculiar features. At intervals from north to south, shallow channels have been carved into the pavement to carry runoff water toward the pool (Fig. 7:2). The channels terminate in masonry-built manholes that are connected with openings specially constructed in the vaults (Vincent 1933, Pl. VII; Aline 1955, Pl. 22). The presence of these manholes is one of the strongest arguments for contemporaneity between the pavement and underlying vaults. The second peculiarity is a band of 'striated' pavers running east-west through the southern half of the pavement (Fig. 7:4). These pavers are in all respects identical to the smooth ones, except that their surfaces have been keyed with shallow, incised furrows running north-south. This is a common feature of Roman and Byzantine paved roads and was included to counteract slipperiness. Their presence here marks the position of a street beneath *Tarīq Bāb Sitti Miriam* (further patches of this street have been found near the intersection between this street and *Tarīq al-Wād*, and near the *Birkat Israīl*). Curiously, there is no kerb or other form of demarcation between the striated pavers and the smooth ones. Also, the striated pavers appear to terminate at the eastern edge of the pavement, though the street itself continues on with smooth stones (Fig. 7:5). The maximum width of the striated band is uncertain because the pavement has not been traced south of *Tarīq Bāb Sitti Miriam*. In fact, it has been directly observed only in the southeast quadrant of the pavement rectangle (cf. the different schemes adopted by Vincent and Aline, which are more conjectural than real, especially in the area west of the *Ecce Homo* arch). A third peculiarity in the surface treatment of the pavement is the presence of engraved lines in some of the stones, representing games played on the pavement. Where they can be deciphered, the games have been shown to be ones common in the Roman world.

The pavement is bordered on the north and west by rock scarps and/or structures (Fig. 7:7–10). Along most of the eastern flank is a step comprising a single row of stones dressed smooth on their upper and western faces (Fig. 7:11). A fill of debris was found banked against the eastern face of the step, but within a few metres rock had outcropped above the level of the pavement (Fig. 6A:12). Various structures

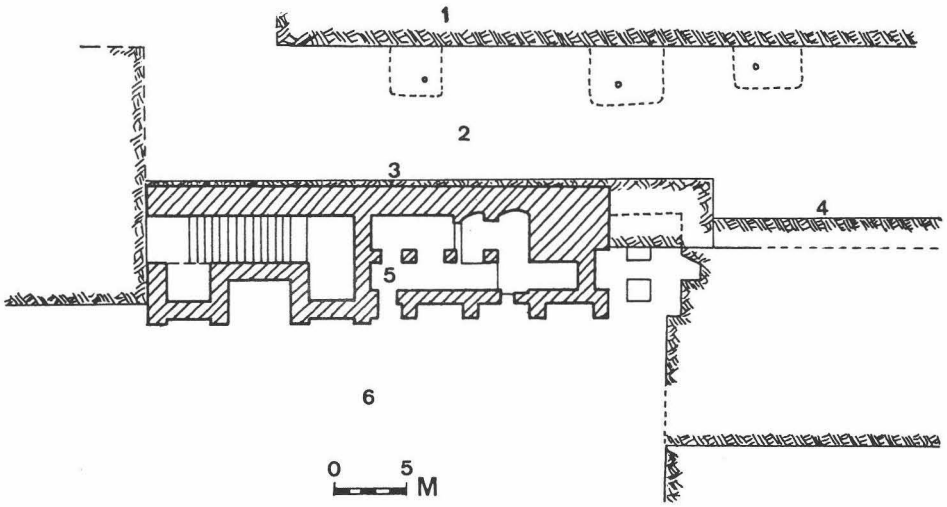

Fig. 8. Vincent's plan of area north of the 'north gallery' (1933, Pl. VII). 1: counterscarp; 2: ditch; 3: scarp; 4: 'éscarpe probable'; 5: north gallery; 6: pavement.

had been built on bedrock east of the step, but it is uncertain whether any of them can be dated as early as the pavement (Fig. 6A:12; Bagatti 1979, Pl. XXV:C, D). Toward the south the step terminates short of the cross-street.

It is along the northern and western sides of the pavement that one begins to note serious discrepancies between the accounts of Vincent and Aline. For Vincent, the eastern two-thirds of the northern flank comprise a single range of rooms which he labelled the 'north gallery' (Fig. 8:5). A partition wall divides the gallery into an eastern and western chamber. The eastern chamber (Fig. 7:10) is divided into a northern and southern corridor by four square piers that support low pendentive arches of rubblestone masonry (Aline 1955, Pl. 31:1, 2). The floor of the eastern chamber is natural rock, cut into by various water installations (Fig. 9:4, 5). Vincent and Aline concurred on the organization of the 'north gallery's' eastern chamber. Its western chamber was reconstructed by Vincent as a series of rooms containing a stairwell (Fig. 7:9). This was omitted from Aline's plan, which explains the marked reduction in width of the pavement on her plan. In place of Vincent's western chamber of the 'north gallery', Aline had a rock outcrop into which had been cut a series of interconnecting cisterns (Fig. 9:6; Aline 1955, Pl. 14:2–6). Vincent's plan omitted these cisterns.

More troublesome still is the area north of the 'north gallery'. Vincent maintained that the gallery's north wall had been founded on a rock scarp 5 metres high that ran the whole length of the gallery and continued for a short distance to the east, after which it was succeeded by a very dubious 'escarpe probable' (Fig. 8:4). Nine metres north of this scarp is a counterscarp, parallel to the first but rising to a height of 11 metres (Fig. 8:1; with three rectangular basins dug into the rock at its

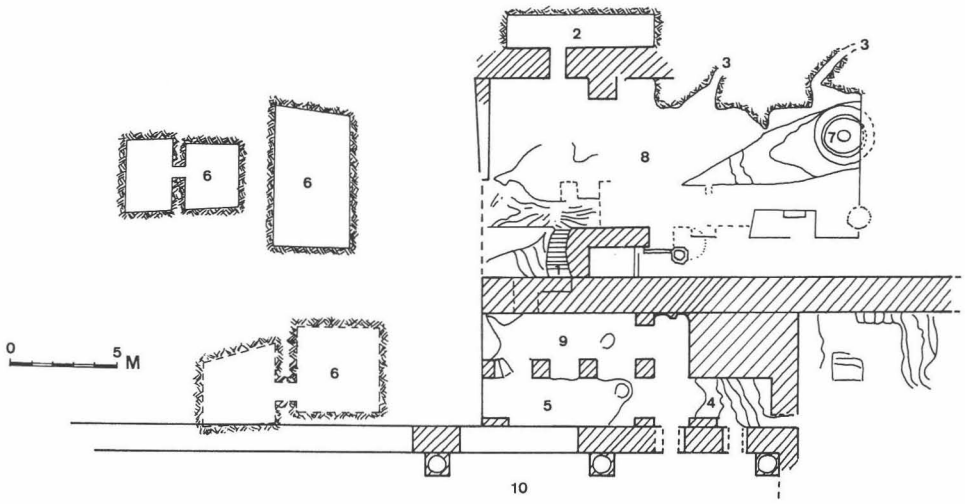

Fig. 9. Aline's plan of area north of the 'north gallery' (1955, Pl. 14). 1: rockcut steps up from 'north gallery' to 'silo chamber'; 2: partly rockcut chamber; 3: rockcut channels; 4: probable steps along east side of pool; 5: rockcut hydraulic installation; 6: rockcut cisterns or tombs; 7: 'silo'; 8: 'silo chamber'; 9: 'north gallery'.

base). Thus for Vincent the 'north gallery' was fronted by a deep, wide, rockcut ditch, which in his opinion extended even further to the east (Fig. 8:2).

For Aline the situation was completely different (Fig. 9). Not only did Vincent's ditch not exist but, on the contrary, the rock immediately north of the gallery *rose* 9 metres to the floor of another chamber, called by Aline the 'silo chamber' (Fig. 9:8). A masonry staircase (still visible today) led up from the 'north gallery' into the 'silo chamber' (Fig. 9:1). The 'silo chamber' is somewhat larger than the 'north gallery', and contains various utilitarian installations, including the cylindrical structure interpreted as a silo (Fig. 9:7). The north wall of the chamber is composed of very irregular rock pierced by several narrow passages/tunnels (Fig. 9:3), and contains on its north side a partly rockcut and partly built chamber (Fig. 9:2). Aline believed that a north-facing rock scarp ran about 8 metres north of the 'silo chamber', and that a ditch approximately 20 metres wide fronted the scarp. All this is rather dubious and not a little conjectural, especially in regard to the alleged scarps and counterscarps. Vincent's reconstruction of the area beyond the 'north gallery' is clearly wrong, whereas Aline erred in her representation of the area immediately west of the gallery.

The northwest border of the pavement is framed by a connected sequence of quarried scarps, some of which are visible within the present *Ecce Homo* church. Here again there are various discrepancies between the plans of Vincent and Aline. Beginning at Point 10 within the church (Fig. 6), the vertical scarp stands about 5 metres high and is traceable for a length of some 8 metres to corner 9. Toward the west the scarp has been traced for a distance of some 30 metres, becoming progressively more irregular as it dissipates on the slopes of the Tyropoeon Valley. At

corner 9 the scarp turns northward and appears at intervals as far as the northwest corner of the pavement (Fig. 6:1), at which point it turns to the east. Beyond this, the situation becomes less certain. Vincent supposed that the scarp made another northward turn along the west side of the 'north gallery', but the evidence for this is tenuous, if it exists at all. A scarp along this line was not indicated on Aline's plan (though her plan is inaccurate in just this area, as noted above). At Point 3 (Fig. 6A) the scarp stands to a height of 6 metres. But Vincent did not explain how the assumed scarp between Points 2 and 3 relates to the 10 metre high scarp along the north side of the pool, which rises approximately 5 metres above the top of the vaulting, i.e. it stands on the same level as the scarp between Points 2 and 3 (Fig. 6C). The western chamber of the 'north gallery', according to Vincent's plan, was built partly on top of the scarp behind the pool and partly on the vaulting in front of the scarp (Fig. 6C). Where did the scarp behind the north wall of the pool go after reaching the pool's northeast corner? It could not have continued on a straight course into the eastern chamber of the 'north gallery', because bedrock was exposed over the entire area of this chamber without any sign of the scarp's continuation. The rock here is also partly natural, so that one cannot entertain the notion that the scarp had been cut away later and removed. The only plausible explanation is that from the northeast corner of the pool the scarp turns immediately northward underneath the wall separating the two chambers of the 'north gallery', and then quickly dissipates in the rising rock north of the gallery (Fig. 6A:4–16).

How, then, does the rock floor of the eastern chamber of the gallery relate to the northern end of the pool (Fig. 6A)? Here one must begin by pointing out an apparent error in Aline's plan, which shows bedrock outcropping in the southwest corner of the chamber. This cannot be the case, for the northeast corner of the pool underlies this corner of the chamber. The height of the pool's east wall here is about 5.5 metres, i.e. about 3 metres below the level of the pavement. At the eastern end of the gallery its rock floor is only 1 metre below the level of the pavement; here there is a doorway with stepped threshold giving up onto the pavement (Fig. 6A:8, 6B:8). So from this point westward to the edge of the pool the rock floor of the gallery falls by about 2 metres over a distance of 10 metres. Part of this slope is due to the generally falling rock level from east to west, but the rock also drops further in the southwest quadrant of the chamber because of a rockcut depression or 'collecting basin' (Figs 6A:13, 9:5).

The 5 metre-high scarp along the line 9–10 within the *Ecce Homo* church marks the northern border of the striated street, which continues towards the west (remains of it were found by Savignac, 1907, 120–21, about 20 metres west of the Sisters of Sion Convent). A similar scarp has been postulated by Vincent and Aline along the south side of the street, about 17 metres from the northern scarp (Fig. 7:8; in theory this is a reasonable assumption, but actual evidence for it is indirect). The south wall of the *Ecce Homo* church, about 7 metres from scarp 9–10, is built partly over an earlier wall of very large stones (Fig. 7:12). This earlier wall appears above the level of the striated street, but it is not known whether it lies

on the flagstones or on bedrock. Vincent calculated the width of the early wall as about 2 metres and its length as 7.5 metres. Both Vincent and Aline believed that it formed the socle of a long pier in the middle of the street, supporting two parallel barrel vaults over the northern and southern halves of the street (see the reconstructed elevation in Vincent 1933, Pl. XIV: centre left). The whole structure would thus have served as a monumental double entrance into the area of the paved court.

About 13.5 metres east of the 'monumental gateway', and standing directly in front of it, is the Roman triple-bayed arch commonly known as the *Ecce Homo* arch (Fig. 7:3). The northern half of the arch is incorporated into the church of that name; the southern half of the central bay spans *Tarīq Bāb Sitti Miriam*, while the remainder lies hidden within an Arabic building on the south side of the street, and has never been exposed for study. The relationship between arch and pavement has been the object of some speculation. Earlier scholars such as Aline and Vincent believed that the arch's foundations had been laid on top of the pavement. But an excavation conducted in 1966 against the base of the northern pier showed that it had been founded on prepared rock, and that the pavement went up to the foot of the pier (Coüasnon 1966; cf. also the emendations to the latter's conclusions in Blomme 1979, 270–1). The pavement in this area had been founded directly on bedrock. The situation in regard to the other three piers is less clear for lack of detailed investigation. It is known that the rock slopes away toward the south, so that in front of the arch's southernmost pier the pavement would have been founded on a layer of cement mortar rather than bedrock. It seems most likely, as Blomme has pointed out (1979, 266), that all four piers were based on rock. The direct evidence of the northern pier, at any rate, suggests contemporaneity between the arch and pavement.

As stated at the beginning of this section, the various architectural elements outlined above have been used to prepare quite differing reconstructions of the Antonia fortress, ranging from the 'maximalist' to the 'minimalist'. The basic premises of the 'maximalist' viewpoint are as follows: (1) the scarped rock podium at the northwest corner of the *Ḥaram* represents only the southern part of the fortress; (2) the 'Twin Pools' are contemporary with the podium, and are to be identified with Josephus' Strouthion Pool; (3) the pool's vaults, the pavement above them, along with the chambers and scarps around the pavement, are all contemporary with the construction of the pool and podium, and belong to the Antonia fortress; (4) the striated pavers belong to a street that passed through the courtyard of the fortress and underneath a monumental, double-arched portal in its western wall; (5) the remains of walls and rockcut installations beneath the Convent of the Flagellation belong to chambers inside the fortress; (6) the *Ecce Homo* arch was built on top of the pavement by Hadrian in the 2nd century AD, the pavement being reused as the 'eastern forum' of the Roman city (Meistermann's 'maximalist' reconstruction has the arch as the western portal of the fortress; *qv*. Bagatti 1979, Fig. 13).

Benoit's archaeological synthesis for a 'minimalist' Antonia bases itself on the

following premises: (1) the rock podium represents the entire extent of the fortress; (2) the 'twin pools' are contemporary with the rock podium and are the same as the Strouthion Pool; (3) the pool vaults and pavement are contemporary with each other, but *later* than the pool; (4) the scarps and chambers bordering the pavement reflect a long period of structural development, only some elements of which might be contemporary with the pavement and vaults; (5) the *Ecce Homo* arch is contemporary with the pavement and vaults and is to be assigned to the 2nd century AD; (6) the 'evidence' for the corner towers in 'maximalist' reconstructions is essentially non-existent.

There is no doubt that the Antonia included the scarped podium at the northwest corner of the *Ḥaram*. Both 'maximalists' and 'minimalists' have agreed on this point. There is little doubt that the pool in its original form was quarried along with the podium, given the congruence between the pool's south wall and the scarp's orientation above it. Concordance on this point between 'maximalists' and 'minimalists' has extended to the identification of the 'Twin Pools' with the Strouthion Pool mentioned by Josephus. Beyond this the two camps go their separate ways. For 'maximalists' the vaults and pavement were built at the same time as the pool, so that the latter had been inclosed within the fortress from the beginning. Benoit has raised a valid objection to this assumption: the presence of steps along the flanks of the pool must have been designed to allow people to descend to the pool's edge to draw water. Since the steps were made obsolete by construction of the vaults and pavement, the pool must have been originally open to the air for some time before it was covered. Three observations support this conclusion: (1) the presence of rockcut installations for water jars, found by Bagatti east of the steps; (2) the fact that the steps had been covered with a hard, waterproof cement mortar, of similar composition to other examples of mortar used for waterproofing cisterns and baths in Hasmonean/Herodian Jerusalem; (3) the fact that the cement mortar showed signs of exposure to water. Thus the open-air pool had been excavated well before the vaults and pavement. How much earlier? Benoit conceded the possibility of a pre-Herodian origin for the pool (1971, 143; presumably he meant Hellenistic), a dating supported (in his opinion) by the several Seleucid and Hasmonean coins found in the debris of the pool (Aline 1955, 273 n. 2). The view has already been advanced that the pool and the northern face of the rock podium may have been built as part of the Hasmonean *Baris*.

But regardless of the pool's construction date, Benoit invoked another important piece of evidence to prove that it must have been open to the air, and outside the limits of the fortress, as late as AD 70. In *War* V.467 Josephus described Titus' siege operations against the Antonia: 'one of these [siege-ramps] was thrown up by the Vth Legion *kata meson* the so-called Strouthion Pool.' Granted an identification between the 'Twin Pools' and Strouthion, it becomes necessary to know exactly what Josephus meant by the expression *kata meson*. 'Maximalists' interpret this expression as 'opposite to', or 'over against the middle of', whereas 'minimalists' prefer 'in/across the middle of'. The first interpretation allows the possibility that the Strouthion Pool lay underneath, and within, the Antonia. The second locates

the Antonia on the south side of the pool and characterizes the latter as an open reservoir.

The etymological aspects of the expression *kata meson* have been discussed in detail only by Maurer (1965, 139ff.), whose conclusions were accepted by Benoit (1971, 143f.). Generally speaking, the preposition *kata*, when followed by a noun in the accusative case (as *meson* or its variant *mesēn*; the similar word *mesaitaton* can also be included in this discussion) has a range of meanings that includes 'opposite', 'over against', 'towards', 'in the region of', 'at', 'about', as well as 'on', 'over', 'in' or 'throughout' (in the spatial sense). Josephus used the expression *kata meson/mesēn* twenty times in his various books, and on all occasions except one (leaving aside the reference under discussion) it means 'in the middle of', in the spatial sense (*War* IV.494, 546, V.131, 207, VI.355, VII.6; *Ant.* III.115, VIII.79, XII.71, 72, XV.298, 411, XVIII.102; *Life* 15; *Against Apion* I.198; see also Benoit's citation of earlier Greek writers in 1971, 144 n.42).

The single exception to this pattern is *War* IV.13, which describes Vespasian's siege of Gamala at the beginning of the First Revolt. The legions had been deployed at various locations around the city, one completing preparations for the siege *kata mesēn tēn polin*, which on the face of it can mean only 'opposite/toward/against the middle of the city'. However, one manuscript of the book (*Codex Laurentianus*) omits the word *kata*, rendering the text thus: *kai to pempton men mesēn exeirgazeto tēn polin*, i.e. 'and the Vth [Legion] made ready in the middle part of the city' (*mesēn* used as an adjective qualifying *tēn polin*, literally 'the mid-city'; or perhaps in the adverbial sense of 'in the middle', 'in the intermediate/intervening area.' The verb *exergazatō* could in this sense mean 'dealt with' or 'completed the fortifications against', i.e. 'the Vth Legion dealt with/completed [the siegeworks against] the city in the intervening area [between the other two legions]'). The textual uncertainties in this passage dampen its value in assessing the meaning of *War* V.467, as Maurer has pointed out (1965, 141). Given that on all other occasions Josephus used *kata meson* to mean 'in the middle/centre' or 'through the middle', the balance of probability strongly favours this meaning in the phrase *kata meson tēs Strouthiou kolymbēthras*. In brief, Benoit's opinion that the pool was open at the time of the Roman siege, and that the Antonia stood on the south side of the pool, accords better with the archaeological and textual evidence than do the 'maximalist' positions. A further observation in support of the 'minimalist' viewpoint is that architectural fragments from the fortress' destruction – including stone ballistae – were found within the pool (Aline 1955, 154, 163, Pl. 24). How could these have fallen into the pool if it had been covered by vaults?

If the 'minimalist' argument were accepted, then the vaulting and pavement must be assigned to the 2nd century AD. The rock scarps bordering the pavement would have reached their present configuration at that time, e.g. the scarp along the north side of the 'striated street', and the one around the northwest corner of the pavement. The high scarp above the north end of the pool is of Hasmonean or Herodian origin, but its westward continuation may have been altered when the pavement was being laid (see Fig. 6A:18, which shows how the original scarp may

have continued, being cut back toward the north at a later date). Bedrock immediately west of the pool might also have been quarried down at that time, while on the east the Roman structures seem, on the whole, to have been accommodated to pre-existing rock levels. The foundations of the 'north gallery' probably date to the construction of the pavement as well, though much of the extant masonry within its eastern chamber (including the low pendentive vaults and piers) is probably Byzantine or later (the 'silo chamber' is probably also late).

The chronological relationship between the pavement and the *Ecce Homo* arch is still a matter for conjecture. Technically, the arch could be later than the pavement; at only one point has a paving stone been found in association with the arch, but there is no guarantee that this paver belonged to the original pavement and is still *in situ*, or whether it is a new slab inserted into the older pavement when the arch came to be built in order to accommodate the arch to the pavement. Blomme's thesis of an Herodian date for the arch is undermined by the absence of a contemporary road or surface earlier than the present pavement, which dates to the 2nd century AD. It is difficult, moreover, to accept that a city gate (which the arch almost certainly was) would have been built in such a way that the pool stood as an open obstacle in front of it (Blomme's supposition that the southern half of the pool had been spanned by a bridge is really a case of 'grasping at straws'). Also to be considered is the possibility, discussed earlier, that a deep ditch had been excavated along the northern front of the rock podium during the Hasmonean or Herodian periods. The central bay of the arch aligns itself with the postulated ditch, a rather unlikely situation. Finally, it is difficult to understand why Hadrian would have elected to preserve an 'Herodian' city gate as the centrepiece of his eastern forum. There is no denying Blomme's contention that, in terms of its style and form, the arch is more like a city gate than a commemorative or triumphal arch. Nevertheless, it had never been attached to a city wall but was left free-standing as an official marker of the Roman city's eastern boundary.

At the present time the combined weight of archaeological and textual evidence favours a 'minimalist' reconstruction of the Antonia, though future discoveries may swing the pendulum in the opposite direction. The choice between the two alternatives rests essentially on two issues: (1) the meaning of *kata meson tēs Strouthiou kolymbēthras*, and (2) the structural relationship between the *Ecce Homo* arch and the pavement. If *kata meson* in this context does mean 'against/toward the middle of', then much of the archaeological evidence could be reconciled with a 'maximalist' viewpoint: some of the 'Herodian' paving stones might have been removed while the Hadrianic gate/arch was being built, and then recut and relaid against it; there is no certainty regarding the alignment of the 'striated street' with the *Ecce Homo* arch; the wall of massive masonry which 'maximalists' reconstruct as the central pier of the Antonia's monumental western portal could have been just that, even though it stands directly behind the central portal of the *Ecce Homo* arch (for all we know the masonry foundation might have been rebuilt as the socle for a statue of the Roman emperor, in which case its axial alignment with the gate/arch would have been a positive advantage); despite the obvious inconsistencies

between Aline and Vincent regarding the corner towers, ditch and 'north gallery', and despite the fact that many of their 'Herodian' architectural remains are most probably later, the possibility remains that the chambers of the Antonia had been built around the pavement but that they were completely destroyed in AD 70 so that only the paved court and pool remained to be reused by Hadrian in his eastern forum.

On the other hand, if it could be demonstrated beyond doubt that the *Ecce Homo* arch and the whole of the pavement are contemporary, then the above possibilities will be relegated to the categories of anachronism and coincidence. And if *kata meson* in *War* V.467 does, as seems likely, mean 'through/over the middle', then this will also undermine the 'maximalist' position.

One further issue associated with the 'maximalist' position is worth considering. After reconstructing the fortress Vincent proceeded to identify it as the praetorium of the Gospel narratives, and to recognize in the pavement the infamous *lithostrōtos* of *John* 19:13:* 'Hearing these words, Pilate had Jesus brought out [from the praetorium], and seated himself on the chair of judgment at a place called the *lithostrōtos*, in Hebrew *gabbatha*.' The praetorium is mentioned also in *John* 18:28–29:* 'They then led Jesus from the House of Caiaphas to the praetorium. They did not go into the praetorium themselves or they would have been defiled; so Pilate came out to them;' and also in the Gospels of *Matthew* and *Mark*:* 'the soldiers took Jesus with them into the praetorium' (*Matt.* 27:27);* 'the soldiers led Jesus away to inside the palace, which is the praetorium' (*Mark* 15:16).

Josephus related that on the occasions when the Roman prefect/procurator visited Jerusalem he stayed in Herod's palace in the Upper City along with his praetorian bodyguard, leaving the defence of the Temple area to the cohort stationed in the Antonia. Vincent believed, however, that on special feast days, when civil disturbances were more likely, the prefect/procurator would remove to the Antonia to personally supervise proceedings (Vincent 1954, 216ff.). Obviously, if the pavement dates to the 2nd century AD (which is likely), it could not be the *lithostrōtos*. Yet even if the pavement had been the central court of the Antonia, it would still not qualify as the New Testament *lithostrōtos*, because by law a Roman judgment tribunal could be set up only outside the praetorium in a public place, since the public was forbidden access to the interior of the praetorium. This is the sense of *John* 18:28–29 and 19:13: Jesus was taken into the praetorium for questioning by Pilate, but the Jewish mob remained outside for fear of defilement, and also because they simply were not allowed in. Pilate then came out of the praetorium and delivered his judgment at a tribunal set up on the *lithostrōtos*.

Mark 15:16 draws an equivalence between the palace (*aulē*) and the praetorium (*praitōrion*). During the Imperial period 'praetorium' was the name given to the official residence of a provincial governor. Its equivalent names in Greek (apart from the simple transliteration) were *stratēgion, ta basileia, hē aulē*, or *hē aulē basilikē* (Benoit 1952, 531). *Acts* 23:35 refers to the residence of the prefect/procurator at Caesarea Maritima as the *praitōrion tou Hērōidou* (it had formerly been the palace of King Herod). Herod's palace in the Upper City of Jerusalem

was called by Josephus *hē basilikē aulē* (*Life* 46.407), *hē basileōs aulē* (*War* V.176), and even *hē anōterō aulē* (i.e. 'the upper palace'; *War* II.429). Thus for Benoit there was no doubt that the *aulē* of *Mk* 15:16 is the same as the praetorium, the official residence of the Roman prefect/procurator in Jerusalem.

In further support of this equation Benoit invoked a passage from the *War* (II. 301–08) which described the procurator Gessius Florus' persecution of the seditious Jews, whom he had sentenced to death by scourging and crucifixion. Florus delivered his judgment at a tribunal (*bēma*) set up in front of (*pro*) the palace (*basileia*), in full view of the Chief Priests and Elders. The palace referred to here can mean only Herod's palace in the Upper City, for at that time Herod Agrippa II's sister, Berenice, happened to be staying in Jerusalem and, out of fear for her life, had sought refuge in another palace, which can have been none other than the family palace of the Hasmoneans, in which Agrippa II and his family lived whilst in the city. Although Vincent is probably correct in calling the Antonia '*la palace primitive d'Hérode*', used by the king before construction of the Upper Palace, and despite Josephus' estimation of the Antonia as a palatial building in its own right, there is no clear evidence that the Antonia was commonly thought of as a palace during the 1st century AD. Only three palaces (called such) are known in the city of that period: two of them have been mentioned above; the third was that of queen Helena of Adiabene in the Lower City. It is also known, on the other hand, that during the 1st century AD the Antonia's common name was the *parembolē*, i.e., soldiers' barracks, mentioned several times in *Acts* (21:34–37, 22:24, 23:10, 16, 32). Just how common the name Antonia was among Jerusalem's citizens during the Roman occupation is an interesting question. Josephus' use of the name may have been conditioned to some extent by his pro-Roman sentiments and by the fact that he was writing for a Roman readership.

In any event, there seems little doubt that the Antonia was not the praetorium of the Gospels. Benoit was surely correct in identifying the praetorium with Herod's palace in the Upper City, and in locating the *lithostrōtos* in an open, public area near the main gate of the palace (not, however, within the Upper Market/Forum, which is mentioned in connection with Florus' persecution in *War* II.301–08, but as a separate place where he set up his tribunal). Commenting on the Greek word *lithostrōtos*, transliterated from the Aramaic as *gabbatha*, Benoit, like most scholars before him, derived the word from the Hebrew root *gāvah*, meaning 'high', 'lofty', 'tall' or 'exalted'. This is undoubtedly correct, though the Greek form *gabbatha* probably came directly from the Aramaic *gāvuṯ* or *gāvuṯā'*, meaning a 'height' or 'elevation' (as used in Aramaic targums on the Hebrew Bible), referring in the present context either to the exalted position of the tribunal and *lithostrōtos* or, as Benoit suggested (1952, 548–49), to the *lithostrōtos* being set up high in the Upper City (hence, *gbh* = *anō*).

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The Plan of Herod's Temple

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The question of the relationship between the site of the ancient Jewish Temple and the existing topography of the *Ḥaram ash-Sharīf*, the enclosure housing the Dome of the Rock (*Qubbat as-Ṣakhra*) and the *Aqṣā* Mosque in Jerusalem, has exercised scholarly debate for well over a century.[1]

The majority opinion holds that the present rock summit, known as *as-Ṣakhra* ('the Rock') enshrined within the Dome of the Rock, is a vestige of the inner precincts of the Temple, but views differ as to its significance. Some scholars identify *as-Ṣakhra* as the base of the great sacrifical altar and would place the Sanctuary somewhere to the west of it. Others claim that *as-Ṣakhra* underlies the Holy of Holies. Both proposals raise difficulties: see, e.g. Bagatti (1979, 27–8). The first presents topographical problems, not least that the Holy of Holies would occupy an area where the ground slopes away rapidly. Its proponents therefore need to introduce an artificially raised podium on which to prop up the Sanctuary. The second hypothesis does not provide a satisfactory explanation of *as-Ṣakhra* with its irregular dimensions and uneven surface, nor of the cavern beneath it.

Other scholars, including Busink (1970, 1–20) and Kaufman (1983) take the view that the Sanctuary was situated to the north of *as-Ṣakhra*. A critique of this position by Lance (1985, 482–3) is contained in a response to Mazar's ideas on the Temple Mount. A contrary opinion, held by Warren (Warren and Conder 1884, 97–112) and recently revived by Bagatti (1965, 428–4; 1979, 11–32) and Vogt (1974, 23–64) asserts that the site of the Sanctuary lies on the south side of the rock summit.

A solution was proposed a decade ago (Jacobson 1980), that was worked out from the remains of the enclosing wall (*peribolos*) created by Herod for the Temple precinct (*temenos*), rather than being based on the position of the enigmatic rock of *as-Ṣakhra*. This solution will be further developed here.

The Visible Remains of the Herodian Peribolos

The first step is to identify the *peribolos* of the Herodian Temple. This is straightforward for the southern, western and eastern boundaries. The explorations conducted by Warren (1884, 122–216) in 1867–70 established that the masonry in the west and south walls of the *Ḥaram*, together with that of the southern section of the east wall is of a consistent type (Busink 1980, 951–81). However, irrefutable proof that these walls with their characteristic drafted masonry belong to the Herodian

building project had to await the results of the excavations of Mazar at the western and southern perimeters of the Temple Mount, a full century later (Mazar 1969; 1971).

Approximately 32 metres north of the southeast corner of the *Ḥaram*, there is a joint or 'seam' in the east wall, where the stretch of Herodian masonry abuts on an earlier wall containing ashlars of a different character. The older blocks are generally shorter and, while these also possess drafted margins, they are not as finely dressed (Tsafrir 1975, 515–21). This ancient wall appears to continue northwards possibly as far as the Golden Gate, where the same distinctive masonry is again visible. A little beyond this point, there is a further stretch of Herodian ashlars, which continues beyond the northeast corner of the *Ḥaram*.

The age of the east wall north of the 'seam' is still controversial. The earliest dating proposed for it is pre-Exilic, or even Solomonic (Laperrousaz 1973; 1975; 1979), but the arguments put forward for an Israelite dating, based on the technical characteristics of the masonry, have been soundly refuted (Chapman 1984, 127–9). The ancient section of the east wall has also been attributed to the Achaemenid–Persian period (Dunand, 1969; cf. Tsafrir 1975, 515–16 and n. 39). The most persuasive dating provided for this wall, based on stylistic criteria, would place it somewhere in the Hellenistic (including the Hasmonaean) period, i.e. between the fourth and the first century BC (Tsafrir 1975; Mazar 1985, 466). At the other extreme, Avi-Yonah (1975, 13) supposed the masonry on either side of the seam to be Herodian, with each section belonging to a different phase of Herod's building project (Busink 1980, 1009–10 n. 228). Whatever the exact date of the portion of the wall north of the 'seam', there can be little doubt that the east wall of the existing *Ḥaram* formed part of the *peribolos* of Herod's Temple.

The Problem of the North Wall

In marked contrast with the other boundaries, the position of the northern line of the Herodian *peribolos* is uncertain and it has been the subject of considerable debate.

At the northwest corner, the border of the *Ḥaram* is demarcated for a distance of approximately 102 metres by the rock scarp that is generally identified with the remains of the podium of the Antonia fortress (Busink 1980, 1233–49). Good evidence that this rock cutting was Herod's work has been furnished by the comprehensive survey of the Mameluk buildings carried out between 1968 and 1984 by Burgoyne and other architects from the British School of Archaeology in Jerusalem (Burgoyne 1987). Examining the structures perched above the rock scarp, they were able to trace a massive wall, 4 metres thick, intermittently over the whole length, from the re-entrant angle at the northwest corner, through the *Madrasa al-Jāwaliyya* (ibid., 202, Fig. 14.2, and 204) to the *Madrasa al-Is'irdiyya*, where large Herodian ashlars have been identified (ibid., 368, 369, Fig. 33.2; 372, Fig. 33.4; 375, Pl. 33.18). Burgoyne reasoned that 'because of its size and location, the wall is doubtless a vestige of the Antonia' (ibid., 204). His findings should finally lay to

rest suggestions that this fortress extended further to the south and the rock scarp was cut back at a later date (Dalman 1930, 114–15, 120; Bagatti 1965, 441–2; cf. Busink 1980 1234–5).

Towards the northeast of the *Ḥaram*, the north wall of this enclosure fronts the southern side of a now filled-in cistern, the *Birkat Bani Isrāīl*, also known simply as the *Birkat Isrāīl*. This stretch of wall was examined in Warren's explorations of 1867–70 (Warren and Conder 1884, 122–6; cf. Busink 1980, 991). The existing facing consists of small blocks set in mortar, and is very different from the imposing ashlar construction of the other three walls of the esplanade. Beneath this layer of stonework, Warren's team found a second layer of the same type, which Conder judged to be representative of Byzantine construction (Conder 1880b, 93; Warren and Conder 1884, 237). He concluded that it was unlikely that the Herodian north wall extended to this part of the esplanade.

There are additional grounds for believing that the *Birkat Isrāīl* postdates the Herodian period (Busink 1980, 992). Josephus does not mention it and Simons questions its antiquity (Simons 1952, 22; 417, n. 2). A 'Christian cross of Byzantine type' carved into the wall of the outlet channel near the base of the pool (Warren and Conder 1884, 126) would suggest that the pool was in use in Byzantine times. The first explicit mention of it is by al-Muqaddasī in the tenth century AD (Le Strange 1890, 200–1; Marmardji 1951, 28).

The north face of the 'tower' at the northeast angle of the *Ḥaram*, beside the *Bāb al-Asbāṭ*, contains ashlars that are unmistakably Herodian, but these are interspersed with stones from later periods (Wilson 1866, 25; *contra* Burgoyne 1987, 43), and this must signify that the ancient masonry is here in secondary use. A supplementary consideration is the lack of attached pilasters on the northern and eastern faces of this 'tower' (Warren and Conder 1884, 215), which are believed to have graced the upper part of the Herodian temenos wall, as they still do on the contemporaneous enclosure of the Tombs of the Patriarchs at Hebron (Vincent and Mackay 1923, 43; Pls. III, IV, XIVA, XVIII, XIX, XX). A trace of such a pilaster course survives towards the northern end of the west wall of the *Ḥaram* (Conder 1877; Vincent and Mackay 1923, 103–6). From this evidence, Conder (1877) suggested that the pilasters once adorned the length of the west wall, while Watzinger (1935, 34) broadened this suggestion to supposing that the pilasters existed on all four sides of the enclosure. However, as Simons (1952, 362, n. 3) points out, at least as regards the east wall which contains much pre-Herodian masonry, such an adornment may have been less likely.

To sum up, while it is accepted that the outline of the Herodian *temenos* is preserved in the present boundaries of the *Ḥaram* on three sides, there is insufficient justification for assuming that the same is true regarding the northern perimeter. Nor would a hypothetical wall to the south of this line provide a satisfactory answer.

Reconstruction of the Herodian Temenos

The absence of a clearly identifiable Herodian wall between the rock of Antonia and the east wall has been seized on by some scholars to suggest that the Herodian *temenos* did not extend as far north as does the existing *Ḥaram* (Busink 1980, 990–2).

The *Ḥaram ash-Sharīf* has the shape of an irregular trapezium with the following approximate dimensions (Simons 1952, 346): south wall, 280 metres; east wall, 470 metres; west wall, 485 metres; north wall, 315 metres. The angles formed by the southwest and northeast corners are close to 90°. However, those at the southeast and northwest are approximately 92° and 85° respectively (Simons 1952, 346–47, 369).

A major ground for doubting that the *Ḥaram* is exactly coextensive with the Herodian *temenos* is its irregular shape. One might have expected that Herod's scheme would have been laid out on a more symmetrical ground-plan, in accordance with the precepts of Roman imperial architecture that were then current. The design of monumental building schemes on symmetrical principles took root in classical architecture after the second century BC. This development appears to have been inspired by ancient Pharaonic architecture and was disseminated throughout the Mediterranean basin from Ptolemaic Egypt. Associated with this process was the adoption of a regular formula for the plan comprising a rectangular *temenos*, framed by porticoes, within which was set the actual temple, aligned with one of the axes of symmetry of the enclosure (Coulton 1976, 168–72). The *propylon*, or principal entrance to the *temenos*, was commonly placed directly opposite the temple proper, on the same axis.

This combination of one or more peristylar courts with an axial temple in a symmetrical arrangement became a hallmark of the great temple complexes of the Roman Empire. Some of the most impressive examples are in the Near East and include:

1 The precinct of Jupiter Heliopolitanus at Baalbek, probably begun in the reign of Augustus (Schulz and Winnefeld 1921, 48–126; Seyrig 1937, 95–7).
2 The precinct of Bel at Palmyra (early first century AD) (Seyrig, Amy and Will 1975; Ward Perkins 1981, 354; 487, n. 84).
3 The precinct of Jupiter Damascenus at Damascus (well advanced by 15–16 AD) (Dussaud 1922; Sauvaget 1949, 315–26; Seyrig 1950, 34–7).
4 The precinct of Artemis at Gerasa (probably begun in the early second century AD) (Fisher 1938; Parapetti 1982; *idem* 1983/84).

Further temple complexes of a similar type are to be found in Asia Minor, and elsewhere (Lyttelton 1987, 38–49).

According to the testimony of Josephus, Herod's Temple in Jerusalem followed the same arrangement. We are told that the Temple platform was ringed by a circuit of porticoes (Jos. *BJ* 5.192; *AJ* 15.396) and that the Sanctuary occupied the central position in the scheme (Jos. *BJ* 5.207). There is also direct archaeological evidence of Herod's architects working to this very formula. Excavations have

revealed that his Sebasteion at Samaria-Sebaste was symmetrically oriented in relation to a peristylar court and was probably axially aligned with its *propylon* (Netzer 1987, 97–105; cf. Jos., *BJ* 1.403; *idem*, *AJ* 15.298). This temple would have been begun in the year that Herod ordered the rebuilding of Samaria which he refounded as Sebaste, an event dated to 25 BC, approximately five years before he ordered the reconstruction of the Temple in Jerusalem (Schürer 1973, 290–1, n. 9; 292, n. 12; Hänlein-Schäfer 1985, 199–201).

Indeed, the two walls that definitely originated in the Herodian building project, the west wall and the south wall, essentially follow a straight course and they meet at right angles. The irregular line of the east wall can be ascribed to it having been begun at an earlier period and extended on, perhaps, more than one occasion. But what about the north wall of Herod's enclosure? Wilkinson has noted that four of the streets of present-day Jerusalem north of the *Ḥaram*, including the eastern section of the Via Dolorosa, are aligned broadly parallel to one another and are oriented at right angles to the western wall of the enclosure (Wilkinson 1975, 123–5; Figs 4 and 5). Moreover, this author has argued that these streets are remnants of an extensive grid plan from an earlier time; because of their relationship with the south and west enclosure walls of Herod's Temple, it is reasonable to assume that they share a common origin (ibid. 128–35). On the other hand, the line of the present north wall of the enclosure has an orientation without any parallels elsewhere in the city. Wilkinson supposed that the northern boundary of the Herodian *temenos* coincided with the southern edge of the first section of the Via Dolorosa and its continuation towards St Stephen's Gate (*Bāb Sittī Maryam*). However, he would still retain the existing wall of the *Ḥaram* as an 'inner wall' of the ancient enclosure. The area contained between these two lines, which embraces the rock outcrop associated with the Antonia fortress and the *Birkat Isrāīl*, Wilkinson designated as a 'utilities area' (ibid. 123).

Following Wilkinson, we shall assume that the ancient northern boundary of the *temenos* ran parallel to the south wall, but that it followed a line that joined the western perimeter where it terminates today, namely close to the northwest corner of the *al-Ghawānima* Minaret (Warren and Conder 1884, 215). The north wall would have resumed at the eastern edge of the Antonia and terminated at its junction with the east wall, at a point approximately midway between the northeast angle of the *Ḥaram* and the *Bāb Sittī Maryam* (St Stephen's Gate). It is, perhaps, significant in this connection that this proposed junction lies just beyond the limit of the gallery driven by Warren northwards to a point about 65.5 feet (20 m) beyond the northeast angle of the *Ḥaram*. Warren (1884, Pl. XIII) somewhat appositely labelled the vicinity of this spot as the 'possible termination of Old Wall with marginal drafts.'

A possible vestige of the northwest corner of the Herodian *temenos* might be the masonry adjoining the corresponding corner of the *al-Ghawānima* Minaret, noted by Burgoyne (1987, 202–4; Fig. 14.2 (marked 'C'); Pl. 14.2). He is of the opinion that one of the ashlars, bearing distinctive marginal drafting on both its north and west faces, is almost certainly a Herodian corner stone *in situ*.

Predictable objections to our proposal include the following:

1 The lack of any visible traces of such a wall, other than the masonry mentioned above.
2 The proposed wall would cut right across the centre of the *Birkat Isrāīl* reservoir.
3 The existing rock scarp that is generally associated with the Antonia fortress is aligned with the present northern boundary and not with the proposed wall.

The first point can be answered by reiterating that there are no proven traces of *any* Herodian wall on the north side of the *Ḥaram*, between the Antonia rock and the east wall. It is possible that an archaeological investigation of the area in question, especially below the present ground level, might expose such a wall, but none has yet been carried out there. A suitable site for excavation would be the now filled-in area of the *Birkat Isrāīl*, which is an open plot used as a car park. Warren did conduct limited soundings at this site in the nineteenth century but he did not report finding the remains of a wall answering our description. However, he reached the bottom of the pool only at one point, 20 feet (6 m) from the south side and 158 feet (48 m) from the east side (Warren and Conder 1884, 123). The bed of the pool at the point where it was exposed consisted of small stones bonded with mortar and covered by a layer of hard plaster. Actual bedrock was not reached, which might help to explain why no trace of any wall was found within the pool, bearing in mind that the Herodian *peribolos* walls are everywhere sunk down to bedrock (Vincent 1928, 332). Trenches dug transverse to the length of this pool, preferably one at each end, would suitably test our hypothesis concerning the north wall of the *peribolos*. The trenches would have to be excavated down to bedrock because it is expected that only meagre remains of the wall survive owing to the devastation wrought by the Romans. Eucherius, writing in about AD 440, tells us that 'once the walls (of the Temple) were destroyed to their foundations, but by a miracle the pinnacle remained from one of the walls, though the rest of the wall fell down' (Eucherius, *De Situ* 7; translated by Wilkinson (1977, 53) from *Corpus Chr.* vol. 175, 238).

With regard to the second possible objection, Warren's findings have a more direct bearing. Warren drew the conclusion that some kind of a fosse had existed within the area of the *Birkat Isrāīl* at 'a very early period' but the evidence suggested that the pool did not acquire its existing form at least until the time Hadrian refounded Jerusalem as Aelia Capitolina (Warren and Conder 1884, 10). The authors of the British Survey report recognized that the masonry lining the *Birkat Isrāīl* was 'inferior in character and resembles the later Roman work in Syria' (Warren and Conder 1884, 10; 237). We are further reminded that 'there is no description of this pool in the works of Josephus, and it is very improbable that he would have omitted to mention so enormous a reservoir had it existed in his time. He speaks only of a fosse . . .' (ibid., 10).

The position and orientation of the rock scarp of the Antonia does not conflict with our proposal. We have no direct evidence that the southern front of the Antonia fortress was flush with the line of the Herodian north wall. Indeed, the

transformation of the Hellenistic *Baris* into the Antonia and Herod's enlargement of the Temple enclosure were separate building projects, as we are reminded by Simons (1952, 403; cf. 415): 'Herod is not likely to have honoured Antonius by giving his name to the new fortress after the lost battle of Actium, as it was his constant policy to befriend the strongest Roman party of the moment.' For this reason, there could well have been a misorientation between the south front of the Antonia and the Temple enclosure. As recorded by Josephus 'the tower of Antonia lay at an angle where the two porticoes, the western and the northern, of the first court of the Temple met; it was built upon rock fifty cubits high and on all four sides precipitous . . . At the point where it (the Antonia) impinged upon the porticoes of the Temple, there were stairs leading down to both of them' (Jos., *BJ* 5.243). Although this description allows for a certain amount of ambiguity, it does, nevertheless, suggest that the Antonia jutted into the northwest corner of the *temenos*, coming between the northern and western colonnades. Such an arrangement would result if the Herodian north wall followed the line proposed here.

From a topological viewpoint, the line of the proposed north wall is hardly inferior to the present-day boundary of the *Ḥaram*. The altitude of the *Ḥaram* platform at the existing northern edge opposite the *Birkat Isrāīl* is about 736 metres, which is considerably higher than that of the terrain immediately to the north. The same would be true regarding the proposed north wall of the Herodian *temenos*. The gulley separating the enclosure from the hill of the Bezetha Quarter to the north, whatever its depth in antiquity, would have afforded the Temple a reasonable topographical advantage against attack from that direction. This cleft was evidently extended westwards by a rock cutting that runs along the north side of the eastern section of the Via Dolorosa (Clermont-Ganneau 1899, 49–60).

The two alternative proposals for the northern boundary of the Herodian enclosure that have received widespread scholarly endorsement are:

1 A line coextensive with the present northern edge of the *Ḥaram ash-Sharīf* (de Vogüé 1864/65, 19; 50; Pl. XV; Schick 1896, 242; Vincent and Stève 1956, 529–32; Pl. CII; Busink 1980, 990–2; 1179, Fig. 253).
2 A line running approximately parallel to the south wall of the enclosure, starting from the vicinity of *Kursī Sulaymān*, within the *Ḥaram* (Hollis 1934, 51–4; 56–7, Pl. II; Simons 1952, 413–20; Fig. 55). Warren and Conder (1884, 98) and Bagatti (1979, 12) would place the north wall even further to the south.

There are counter-arguments to both of these hypotheses, namely:

1 *The Ḥaram line*:

(a) The Ordnance Survey of 1864–65 was unable to locate rock scarp or characteristic Herodian masonry remaining *in situ*, beyond the Antonia outcrop to the present northeast angle. Hollis (1934, 58–60) rightly concluded from these findings that the present north wall is of a later date than the other perimeters.

(b) The continuity of the east wall without a break beyond the northeast angle. Warren found that the drafted masonry of the wall below present ground level continues without a break of any kind north of the existing northeast angle (Warren

and Conder 1884, 129–30; Simons 1952, 372–3; 500 n. 2). Warren conducted another probe some twenty metres north of the point he reached in the subterranean gallery driven beyond the northeast corner of the *Ḥaram*. This revealed a wall of a different style, evidently belonging to a later period, which rests on concrete instead of bedrock. Thus, whoever built the section of the east wall south of this corner, continued it northwards by approximately 25 metres. The more ancient wall therefore terminated in the vicinity of the point proposed for the notheast corner of Herod's *peribolos*.

2 *An inner line*:
(a) The continuation of the west wall with its characteristic drafted masonry northwards without a break up to within 30 metres of the northwest corner of the *Ḥaram*. At the northernmost point, in the vicinity of the *Bāb al-Serai*, there are remains of an ornamental pilaster course that originally articulated the upper stage of the entire west wall of the *peribolos* (Conder 1877, 135–7; Warren and Conder 1884, 212–15; Simons 1952, 361–2; 413). This section of the wall with its surviving pilaster fragments is situated beyond the line of the supposed northern boundary of the *temenos*.
(b) The deep fill towards the northeast of the present esplanade and beyond the proposed 'inner line', is fully consistent with the levelling operations carried out by Herod. A branch of the Kidron ravine originally looped westwards to take in the northeast corner of the existing *Ḥaram ash-Sharīf* as shown on Conder's survey map (Conder 1873, opp. 151). Within the area of the present enclosure, the lowest point of the valley lay to the south of the northeast angle, about two-thirds of the distance to the Golden Gate. At its deepest, where it emerged under the line of the east wall, the floor of the valley is about 142 feet (43 m) below the average level of the esplanade (Warren and Conder 1884, 134; Warren 1884, Pl. XIV). A shaft sunk by Warren just outside the east wall (Shaft B) into this valley revealed the presence of 'Roman' remains near the very bottom, suggesting that both the fill and the adjacent city wall was Herodian (ibid., 131–2; cf. Hollis, 1934, 42). Warren was of the opinion that the floor of the esplanade in the area towards the northeast angle was either raised in solid fill or may actually be raised, at least in part, on substructures of masonry, similar to those in the southeast corner of the enclosure (Wilson and Warren 1871, 192–5; Hollis 1934, 60).

Warren's survey team had, in fact, found more direct evidence that the fill towards the northeast of the enclosure dates from the Herodian period. When they explored the base of the east wall in the vicinity of the northeast angle, they observed smooth-faced blocks extending to a depth of about 60 feet below the existing accumulation of earth and, continuing further down to bedrock, further courses of ashlars with rough projecting bosses (Warren and Conder 1884, 128–30). As at the southwest corner of the Temple Mount, the division between the smoothly rendered blocks of masonry and the rough hewn ashlars corresponds to the ground-level of Herod's day. This is proven by the fact that the smooth-faced blocks below the present ground level were found to be in a much weathered

condition, i.e. this masonry had for a long period been exposed to the elements. Since the top of the highest course of crudely executed masonry is at a level of 2346 feet (715 m) (Warren and Conder 1884, table, p. 120), and the foundation of the southern end of the 'tower' (Warren's Shaft D) at the northeast angle which contains both types of masonry is anchored in bedrock at a level of 2292 feet (699 m) (ibid.), it is most likely that the ground outside the wall at this point had been raised by 16 metres with earth fill at the time when the wall was constructed.

Thus, the suggested lines of the northern boundary of the Herodian *temenos*, either coinciding with the present *Ḥaram* boundary or situated further to the south both raise difficulties which are overcome by placing the wall further to the north as proposed here.

However, the most compelling argument in favour of the more northerly line is the continuation of the ancient east wall northwards past the northeast angle of the *Ḥaram*. In Herod's day, the walls of Jerusalem did not extend northwards beyond the *peribolos* of the Temple (Avi-Yonah 1968). To the east of the Antonia, the north *peribolos* wall must have been identical with the city's defences. The fact that the massive east wall with its ancient drafted masonry is known to extend beyond the corner of the *Ḥaram* must surely favour our hypothesis.

Location of the Temple Proper Within the Temenos

Having identified the four boundaries of the Herodian temenos, the position of the Temple proper may be deduced from the former (Jacobson 1980). The vital clue is provided by a geometrical order governing the dimensions of the enclosure. Firstly, it has been observed that the ratio of the western wall to the southern wall is equal to 485/280 = 1.732 (Simons 1952, 346), which is identical to tan 60°. These proportions strongly suggest that the plan of the enclosure was determined on the basis of geometrical principles. 60° angles are among the simplest to construct using a straight-edge and a pair of compasses, following the procedure given in Euclid's *Elementa*, proposition 1.1 (Jacobson 1986, 75).

This supposition finds reinforcement from the monumental enclosure that Herod constructed at Hebron around the tombs of the Patriarchs (Jacobson 1981). The walls of this enclosure, which are constructed of drafted masonry in an identical style, form a perfect rectangle, the proportions of which are 59.1 m to 34.0 m, i.e. the lengths of the adjacent sides are in the ratio 1.737:1, or tan 60.1°. Other ancient enclosures built with these proportions are those of the Temple of Jupiter Damascenus (ibid.) and the Delphineion at Miletus (Jacobson 1986, 71). The ratio tan 60° = $\sqrt{3}$:1 also governs the plan of the Teatro Marittimo in Hadrian's Villa at Tivoli (ibid., 72–5; cf. Wilson Jones 1989, 134–5).

A relevant point to make in this regard is that abstract geometrical designs dominated the artistic repertoire of Judaea in the period of the Second Temple, no doubt being cultivated as they have also been in Islamic art, because of religious prohibitions on representational images. Particularly favoured were compass-drawn rosette patterns, which occur with great regularity as decoration on mosaics

and stonework of this period (Balty 1981, 357–60 (mosaics); Avi-Yonah, 1981, 15–21 (stonework)). Most common of all are three- and six-petalled rosettes having a 60° symmetry, both of which form the main motifs on Herodian floor mosaics in Jerusalem. One of these rosettes in mosaic, comprising six petals in black on a white ground graces the floor of a small bathroom of the luxurious mansion in Area P of Avigad's excavations of the Upper City, that directly overlooks the Temple Mount (Avigad 1984, 104; 144). The craftsmen who were responsible for this mosaic might have received their geometrical training from the same school as the architect who provided the ground plan of Herod's Temple.

The second key surviving feature of the Herodian *temenos* is the pair of ramped passageways leading up to the Temple platform from the southern entrances identified as the *Ḥuldah* Gates of the *Mishnah* (*Middot* 1.3; Hollis 1934, 245). These entries are oriented perpendicular to the south wall. Wilson, Warren and Conder (Wilson and Warren 1871, 215–17; 229–32; Warren and Conder 1884, 164–8) were struck by the complementary character of these submerged entrances. The Triple Gate is so named because it is fronted by a now-blocked triple archway behind which is a lobby of three bays, as compared with the double entry and lobby of the Double Gate. However, their examination showed that 'it was a gateway of about the same style as the Double Gate, and is very likely at that time to have exactly corresponded to it in only having two passages' (Wilson and Warren 1871, 231; cf. Corbett 1952, 8–9). Conder concluded that 'these two double tunnels in the south wall, at the Double and Triple Gates, thus correspond to each other in their length, width and slope of ramp; the sill of each is on the same level' (Warren and Conder 1884, 165).

Having identified the key elements of the plan geometry, we shall proceed to use this information to show how the Temple itself may have been placed within the enclosed area. A suggested plan of the precinct with its geometrical basis is presented in Fig. 1. The outer perimeter walls are labelled AB, B″C, CD and DA, B″C representing the suggested line of the north wall. The line B″C extrapolated meets point B, close to the northwest corner of the *al-Ghawānima* Minaret, possibly coinciding with the corner ashlar noted by Burgoyne, and referred to earlier.

The identification of the principal axes of the esplanade will now be described. The lateral west-east axis of the area is taken to be parallel to the sides BC and AD, and midway between them; this is shown as the line PQ. The longitudinal north-south axis presents a less obvious choice because AB and CD are not parallel to one another, nor do the walls follow a straight course, especially the east wall. However, taking note of the fact that the twin aisled ramps descending to the two *Ḥuldah* Gates in the south wall of the enclosure *a* and *b*, were original elements of the Herodian scheme, it is supposed that the locus of the midpoint between these two passages formed the north-south axis, which is shown as the line RS. Although point S is not the midpoint of AD, being closer to D than to A, the aptness of the choice of AD as a principal axis will soon become apparent. It is given weight by the parallels provided by other, slightly older, temple complexes that possess twin ramped entrances, namely those of the Hellenistic Apollo Didymaion, in Ionia

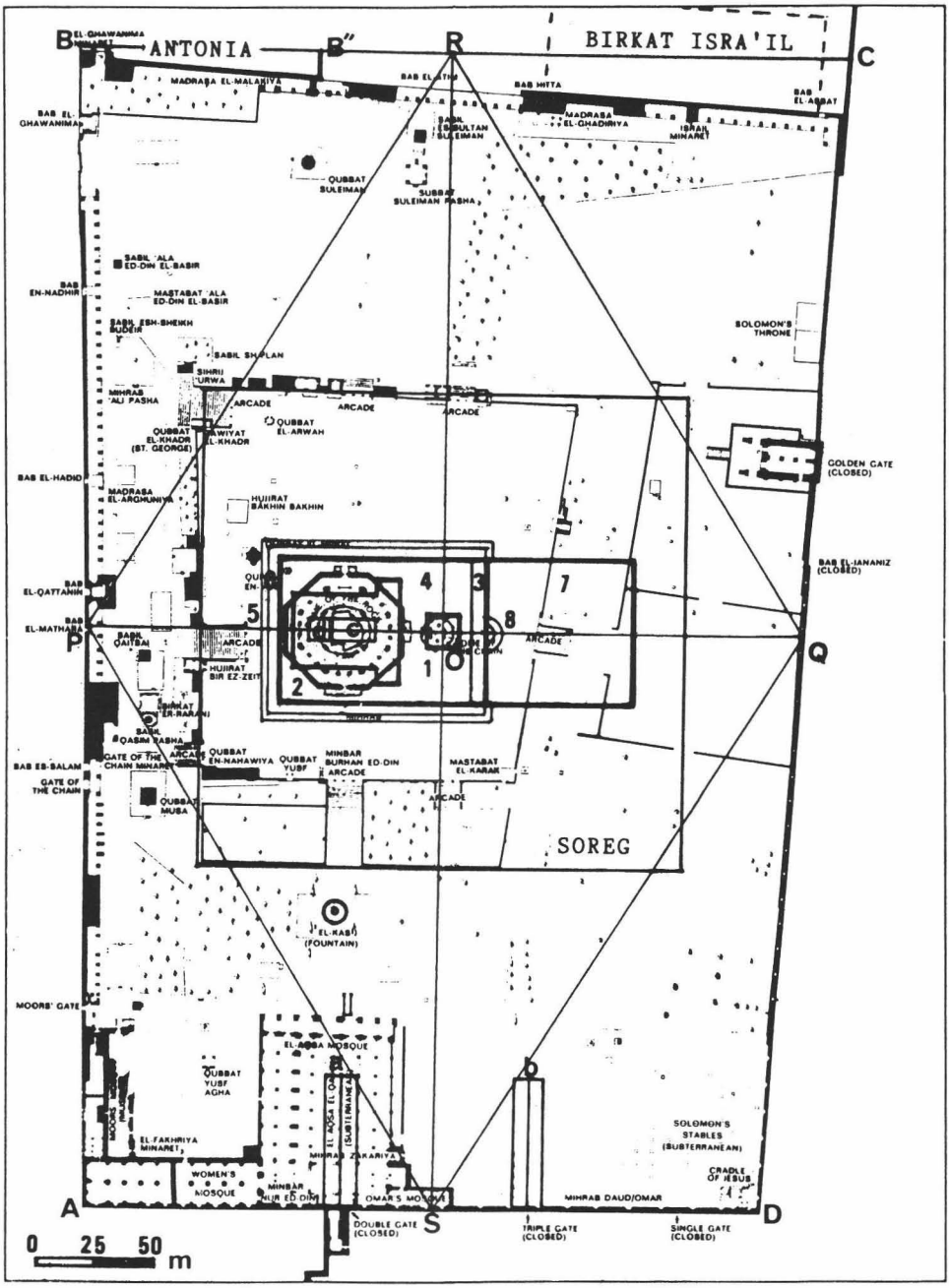

Fig. 1. A restoration of the plan of Herod's Temple, superimposed on the existing Ḥaram ash-Sharif. The geometrical basis of the plan is indicated. 1: Great sacrificial altar; 2: Temple edifice (shrine); 3: Court of Israel; 4: Court of the Priests; 5: Fourteen steps; 6: Terrace (*ḥel*); 7: Court of the Women; 8: Gate of Nicanor; a: Passage to the Ḥuldah Gate; b: Passage to the Ḥuldah Gate; c: Sanctuary (*hekhal*); d: Holy of Holies (*dĕvīr*).

(Knackfuss 1941; Voigtländer 1975 for dating), and of the Fortuna Primigenia temple complex at Praeneste, in Latium, dating from c. 80 BC (Fasolo and Gullini 1953, 57–117; Kähler 1958). At both sites, the ramped passages are symmetrically disposed about their principal axes.

The point of intersection O of the two axes PQ and RS coincides with the site now occupied by the Dome of the Chain (*Qubbat al-Silsila*). Point O lies close to the centre of PQ, being slightly offset to the west of the precise central point by 2.5 metres, or 0.85% of length PQ, as measured on the original manuscript copy of the 1/500 1864–65 Ordnance Survey map of the *Ḥaram*. A concomitant geometrical feature is that the triangles RPQ and SPQ are close to equilateral triangles. In particular, the contained angles QPS, PSQ and SQP are 59.1°, 62.7° and 58.2°, respectively, as measured on the same survey map. Therefore, a space that at first sight would appear to be totally lacking in symmetry, in fact possesses a considerable degree of geometrical order.

There remains the task of explaining how the main Temple edifice, or Shrine, may have been related to the broader area. If our geometrically-based hypothesis is correct, point O was the focal point of the Temple enclosure, and may be considered to have coincided with an important feature of the Temple. We shall assume that it marked the position of the great sacrificial altar, the focus of public worship, labelled *1* in Fig. 1. Curiously, this has also been the view of certain other authors (Conder 1879, 361; Pl. facing p. 359; Hollis 1934, 309; Rosen-Ayalon 1989, 27, n. 21). This spot could not have been occupied by the Holy of Holies (*dĕvīr*), *d*, if only because it would have left insufficient space for the Court of the Women (*ʿazarat ha-nashim*), *7*, to the east. On this particular point, it may be noted that there is evidence of the altar occupying the centre of the courtyard in front of the temple of Jupiter Heliopolitanus at Baalbek in the initial Roman scheme (Kalayan 1969, 154, Fig. 2).

Using the information supplied by our two primary sources on the Temple, the *Mishnah* and Josephus (Jos., *AJ* 15.380–425; *BJ* 5.184–247; *Mishnah*, tractate *Middot*) an attempt will be made to reconstruct the plan of the Temple, outwards from the altar. The two textual sources are in broad agreement about the general layout of the Temple, but it must be borne in mind that they disagree on several points of detail, as noted in the recent review of this subject given by Busink (1980, 1532–36).

First, however, it is necessary to ascribe a modern equivalent to the standard unit of length used in the descriptions of the Temple, the cubit. A representative sample of values that have been quoted for the cubit of Herod's Temple values are: 0.46 m (Busink 1980, 1068), 0.445–0.457 m (Hollis 1934, 349) and 0.428 m (Kaufman 1984). Vincent and Mackay (1923, 108) reasoned that the cubit used by Herod's builders lay somewhere in the range between 0.445 m to 0.52 m.[2] A value for the cubit of 0.464 m has been selected here, largely because it harmonizes with a foot of 0.31 m, or 0.309 m to be more precise, deduced by Grafman (1970, 60–6), inasmuch as the value of the cubit corresponded to $1\frac{1}{2}$ ft (or 2 cubits = 3 feet) in the Roman imperial period (Adam, 1984, 42, table).[3]

The Temple precincts comprising the Court of the Women *7*, and the Main Temple Court (*ʿazarah*), *3* and *4* in Fig 1, are seen to be symmetrically situated within the *temenos*. For this inner area, the plan relies mainly on the dimensions given in the *Mishnah*, our most detailed source for the Temple proper. The Main Court was raised on a *podium* reached on three sides up a flight of 14 steps (*crepis*), *5*, (Jos. *BJ* 5.195). This figure would appear to conflict with that given in the *Mishnah*, because *Middot* 2.3 speaks of 12 steps leading up to the Temple *podium*. This discrepancy is explained by Hollis (1934, 264; 280–1; cf. Busink 1980, 1546; 1065–66) as being accountable by the uneven topography of the esplanade adjacent to the *podium*, which would have made for a variation in the number of steps. Josephus intimates that there were no steps on the western side, but simply a high retaining wall (*BJ* 5.38), but the statement in *Middot* (2.7) that there were two gates on that side contradicts the testimony of the former (Busink 1980, 1546–7, n. 39). A. Büchler (1898, 706–09; cf. Hollis 1934, 158; 167–92; 276) has argued that the Court of the Women, as a walled-in enclosure was a relatively late addition to the Temple, dating from as late as the fourth decade of the first century AD.

Following Hollis (1934, 174–7; 275–6), it is assumed here that, being a later annexe to the Temple, the Court of the Women was level with the outer esplanade and not, as some would suppose (Busink 1980, 1071–9), included within the terrace, or *ḥel*, *6*, at the top of the *podium*. Accordingly, the 15 steps leading up to the *Nicanor* Gate, *8*, (Jos. *BJ* 5.206: *Middot* 205) can be interpreted as the eastern approach to the raised *podium*. The further 5 steps leading up from the *ḥel* to the Court of the Priests, *4*, (Jos. *BJ* 5.198) could then correspond with the $2\frac{1}{2}$ cubits height difference between the Court of Israel, *3*, (*Middot* 2.6) and the Court of the Priests on the fourth side, if we rely on the statement in the Mishnah that the height of all the steps on the Temple Mount was $\frac{1}{2}$ cubit (*Middot* 2.4). Considering the cubit to be 0·464 m the step height should be equal to 0.232 m.

It is possible to test this element of our hypothesis because a stairway belonging to Herod's Temple complex survives. This stairway, a monumental construction of 28 to 32 steps (depending on the distance along it), has been brought to light in front of the Double Gate, one of the twin *Ḥuldah* Gates. The average height of these steps happens to be 0.227 m, as measured from a section through this stairway drawn to scale (Mazar 1972, 80). This value differs from our step height of 0.232 m by a mere 2%![4]

On the equality of one step height to half a cubit, it would also follow that the Court of the Priests was $9\frac{1}{2}$ cubits, or 4.4 metres, on the scale adopted in the plan, above the surrounding esplanade, that is roughly level with the existing platform of the Dome of the Rock, which rises roughly 4 metres above the *Ḥaram* platform (Simons 1952, 352; Vincent and Stève 1956, 561).

In our plan (Fig. 1), the altar, *1*, is placed centrally in front of the Temple edifice, in accordance with most sanctuaries of that period (Lyttelton 1987). This axial arrangement is also perfectly consistent with the description and detailed measurements given in the *Mishnah* (Hollis 1934, 212–13, Pl, XVIII; 231; Vincent 1954, 15, Fig. 2; 22–4; Busink 1980, 1545, Fig 344, 1559, n. 60). Even assuming that height of

the altar was 15 cubits (7 m), as claimed by Josephus (*BJ* 5.225: *Middot* 3.1 implies that the altar was only 8 cubits high; cf. Busink 1980, 1153–6; 1557–9), it would not have greatly obstructed the view of the Sanctuary entrance that the *Mishnah* insists could be had from the summit of the Mount of Olives (*Middot* 2.4). The vantage point was, presumably, the spot that has come to be associated in Christian tradition with the Ascension of Jesus. It stands 805 metres above sea-level (Smith 1907, 31, n. 1) and a horizontal distance of about 900 metres from the site of the Temple Shrine. By comparison, the Court of the Priests would have been at an altitude of approximately 742.5 metres. An observer on this summit would have been at a sufficient elevation to have been able to gaze over the altar at the curtain within the Sanctuary, notwithstanding the fact that its entrance threshold may have been as much as 9 cubits below the top of the altar. Incidentally, high altars were commonplace at that period. That of the Artemision at Magnesia on the Maeander in Ionia reached a height of 6 metres (Humann 1904, 92), while the monumental altar at Baalbek was no less than 17.8 metres tall! (Amy 1953).

With the Temple Shrine, *2*, and the altar, *1*, aligned along a common axis, the former is found to coincide almost exactly with the Dome of the Rock, when equating the cubit to 0.464 m, and using the measurements supplied by tractate *Middot* of the *Mishnah*. There, we are informed that the altar was 32 × 32 cubits square at its base (*Middot* 3.1) and that the distance between the altar and the Sanctuary was 22 cubits. The Sanctuary was 100 cubits long (*Middot* 4.6–7), and so the distance between the mid-points of the Shrine and the altar was 16 + 22 + 50 = 88 cubits = 40.8 metres. This compares with a value of 38.6 metres for the distance between the centres of the Dome of the Chain and the Dome of the Rock scaled off the original 1/500 1864–65 Ordnance Survey map of the *Ḥaram*.

Other striking comparisons that emerge between the dimensions of the structures belonging to Herod's Temple and those of the surviving Umayyad buildings are as follows:

Length and breadth of the Herodian Temple Shrine = 100 cubits
= 46·4 metres (*Middot* 4.6–7).

Diameter of the Dome of the Rock to the octagonal faces = 49·3 metres (Wilkinson 1981, 168, Table 3).

Length and breadth of the altar at its base = 32 cubits
= 14.8 metres (*Middot* 3.1)

Outer diameter of the Dome of the Chain = 14.3 metres (scaled off the original 1/500 1864–5 Ordnance Survey map of the *Ḥaram*).

Thus, with the altar coinciding almost exactly with the Dome of the Chain, the Temple Shrine, *2*, would seem to correspond closely in position and size with the existing Dome of the Rock. The centre of the edifice is seen to stand directly over the Rock itself, which is not confined to any single feature of the Temple, although most of it occupies the area of the Sanctuary (*hekhal*), labelled *c* in Fig. 1. The Holy of Holies (*dĕvīr*) *d*, lies just off the celebrated rock to the west. Thus the proposed layout is consistent with Josephus' testimony that the Temple was built at the top of

the mountain (*AJ* 8.97; cf. Donner 1977, 3). Even a small percentage difference in the value of the cubit would not fundamentally affect our conclusions, as this would merely incur a small displacement of the Temple Shrine relative to point O, the position we have fixed for the altar.

This solution for the site of the Temple Shrine would give substance to a tradition that can be traced back to the tenth century that identified the Dome of the Rock with the ancient Jewish Temple (Vajda 1959). The origin and symbolic significance of the Islamic Dome of the Rock have been extensively assessed by modern scholarship (Grabar 1959; Busink 1980, 914–21). In the Middle Ages, Jews would refer to this Shrine as the site of the *bet ha-miqdash* (Schiller 1976, 29–30; 65) and the Christian pilgrims of the Crusader era renamed the Dome of the Rock as *Templum Domini* (Tobler 1853, 519–20; Wilkinson 1977, 173b). The weight and demonstrable age of the tradition linking *as-Ṣakhra*, the Rock, at the centre of the Dome of the Rock, with the site of the Temple cannot be overestimated (Donner 1977). The oldest literary source that links *as-Ṣakhra* with the Jewish Temple is the chronicle of Eutychius (Saʿīd Ibn al-Batrīq), Melkite Patriarch of Alexandria, written no later than AD 939 (Marmardji 1951, 213; Baldi 1955, 447–8, no. 680).

The Soreg and 'The Mountain of the House'

The raised inner platform on which the Dome of the Rock stands measures 132 m, 160 m, 170 m, and 165 m, respectively on the south, north, west and east sides (Schick 1896, 241). If a square area is now drawn around the Inner Temple centred on the altar, as we have located it, then it will broadly coincide with the boundary of this inner platform along its western side, and contain the raised area entirely, if the dimension of each side is made equal to 205 metres. A value of 205 metres is roughly the median of one stade (furlong) = 600 podes (feet) = 178 metres (as compared with the commonly accepted value of 185 m (Simons 1952, 305, n. 1; Busink 1980, 1015–16)), and 500 cubits = 235 metres. The dimension of one stade per side is that given by Josephus (*AJ* 15.400), for the perimeter of the Temple *peribolos*, while 500 cubits is the equivalent length ascribed to the *har ha-bayit* = 'mountain of the house' in *Middot* 2.1 (Hollis 1934, 260–1; Busink 1980, 1539). Josephus, unwittingly perhaps, appears to have confused the dimensions of the entire Herodian *peribolos* with those of the consecrated area (Donner 1977, 11). He repeats this error in his description of the Herodian royal basilica flanking the south wall of the enclosure.[5]

Various attempts have been made to explain the significance of these areas and to reconcile the dimensions given in the two sources (Simons 1952, 406–8). In his discussion of this problem, Simons was surely incorrect to assume that the term *har ha-bayit* used in the *Mishnah* refers to the entire area of the Herodian enclosure (*ibid.*, 392). As pointed out by Safrai and Avi-Yonah (1971, 965), *har ha-bayit* more logically refers to the consecrated area of the Temple Mount, which was demarcated by the *soreg*, a stone barrier 3 cubits (= 1.4 metres) high, containing inscribed slabs at frequent intervals, with a warning to gentiles not to penetrate the

sacred zone, on pain of death (Hollis 1934, 153–7; 263; Busink 1980, 1066–8; Schürer 1979, 284–5; Segal 1989). It may be assumed, then, that the square stade of Josephus and the 500 cubits square of *Middot* are equivalent specifications for the sacred inner zone of the Temple enclosure (Hollis 1934, 116–17).

The existing raised platform of the Dome of the Rock, with its monumental entrance arcades, is not a natural formation, although its nucleus is constituted by the highest part of the hill. Parts of this area have evidently been artificially built up, although we lack detailed topographical information due to the prohibitions on exploration in this sacred precinct (Simons 1952, 351–3). The earliest recognizable description of this feature is that of Ibn al-Faqīh in 903 AD (Le Strange 1890, 157; Marmardji 1951, 211).

It is not unreasonable to suppose that the perimeter of the platform corresponds, at least in part, to the line of the ancient *soreg*, and that some of the interior space was later filled in to produce the approximately level platform of the Dome of the Rock. In that sense, the inner platform can be seen as a reflection of the *soreg*, with the arcades as successors of the ancient entrances through the balustrade.

With the dimensions proposed for the *soreg* of approximately 205 × 205 metres, the hallowed area contained within would have projected to the south and east of the existing elevated platform. On the south side it would have reached the terrace that today projects towards the *Aqṣā* Mosque. At least in part, this terrace is shown in the earliest reliable plans of the *Ḥaram*, notably the survey plans prepared by F. Catherwood in 1833 (Fergusson 1847, Pl. IV), and by the Ordnance Survey team in 1864–5 (Wilson 1866, map entitled 'Haram Grounds &c.'). The rock outcrops delineated in the Ordnance Survey plan immediately to the east and south of the elevated platform, would have been situated within the area prescribed for the *soreg* and this may imply that the entire fenced off area of the Temple Mount was slightly raised above the outer esplanade.

The Seleucid Akra and the Temple

The hallowed area bounded by the *soreg* would have been coextensive, essentially, with the Temple enclosure at some point in time before Herod 'doubled' its area (Jos. *BJ*, 5.186; cf. Schürer 1973, 175–6, n. 6), but subsequent to the late third century BC, when it appears to have been considerably smaller. If we can rely on the figures of Hecataeus of Abdera, as cited by Josephus (*Ap.* 1.198), the Temple enclosure then measured a mere five *plethra* (500 Greek feet) by 100 cubits, i.e. approximately 150 × 46 metres. The limit that we have defined for the *soreg* and by implication for an earlier boundary of the Temple, at least on the south side, is backed by other pieces of information. One of these is the location of the citadel, or *akra*, that Antiochus IV Epiphanes built to police Jerusalem and its inhabitants (Jos. *AJ* 12.252; 1 Macc. 1.33–35).

The location of the *akra* has been suggested at various points to the north, south and west of the Temple Mount (Schürer 1973, 154–5, n. 39; Tsafrir 1975, 503–10; Bar-Kochva 1989, 445–65; Decoster 1989). This divergence of opinion is perplexing

because the textual sources are actually quite clear and consistent on the subject. The author of 1 Maccabees (7.36) informs us that the *akra* was built in the City of David, which is identical with the Lower City, where Josephus (*AJ* 12.252) places it. The Lower City, which was the site of King David's Jerusalem, occupied the narrow ridge between the Tyropoeon and Kidron Valleys, that rises from their confluence at Siloam to a summit at the Temple Mount. The *akra* evidently dominated the Lower City as evidenced by the fact the spur was referred to as the 'Hill of the *Akra*' long after the citadel had been destroyed (Jos. *BJ* 1.39; 5.137, 252; 6.355; cf. Tsafrir 1975, 509). This evidence leaves little doubt that the *akra* stood somewhere to the south of the Temple.[6]

It is possible to define even more closely the site of the *akra* from the information given in our two sources. We are told that the *akra* overlooked the Temple and controlled its main approach from the rest of Jerusalem which, in the Maccabaean period, was confined to the Lower City (1 Macc. 4.41; 14.6; Jos. *AJ* 12.217, 252, 318, 362, 406). There is the clear implication that the *akra* lay adjacent to the Temple because its garrison was in the habit of harassing worshippers in the Temple precincts (1 Macc. 6.18; 14.36).

The site that would best tally with these points is on the crest of the ridge towards the south of the present *Ḥaram*, as proposed by Watson (1906). He has suggested that the *akra* stood over the immense cistern, designated as No. 8 by Wilson, and possibly over cistern No. 7 as well (Wilson 1866, 42–5; Warren and Conder 1884, 217–25). Watson (1906) supposed that the citadel must have been well provided with water because its garrison withstood a Maccabaean siege lasting almost continuously for 21 years (1 Macc. 6.20; 1 Macc. 13.51). Cistern No. 8, in its present state, has a capacity of over two million gallons (Warren and Conder 1884, 219–20). Cisterns Nos. 9 and 11 might also have been connected with the *akra*, as shown schematically in Fig. 2.

As pointed out to the author by R. L. Chapman, the four cisterns, 7, 8, 9 and 11 form a square, which would suit a *tetrapyrgon*, a fortress of that shape possessing corner towers, that constituted the canonical type in the Hellenistic period (Marzolff 1976, 40–5; Jacobson 1985/86, 60). It happens that one of the cisterns on the Temple Mount was known as the *bor ḥaqer* (Mishnah tractate *Erubin*, 10.14), which may be translated as 'Cistern of the *Akra*' (Mazar 1985, 466). J. Schwarz (ibid.) has identified the *bor ḥaqer* with one of the three tanks of cistern No. 11.

An admitted weakness of this particular hypothesis is the lack of firm evidence regarding the antiquity of the various cisterns with which it is concerned. Furthermore, some of them may have been modified at various times. Nevertheless, the existence of a series of noteworthy underground cisterns close to the Temple is attested by the Letter of Aristeas (89–90), which may be dated to the second century BC (Schürer 1986, 677–87).

One serious criticism that might be made of Watson's proposals is his quite unnecessary conjecture that the ridge between the Tyropoeon and Kidron Valleys rose sharply to a peak at the spot where the *akra* stood, in an attempt to make the citadel fit the description of its dominating position overlooking the Temple, given

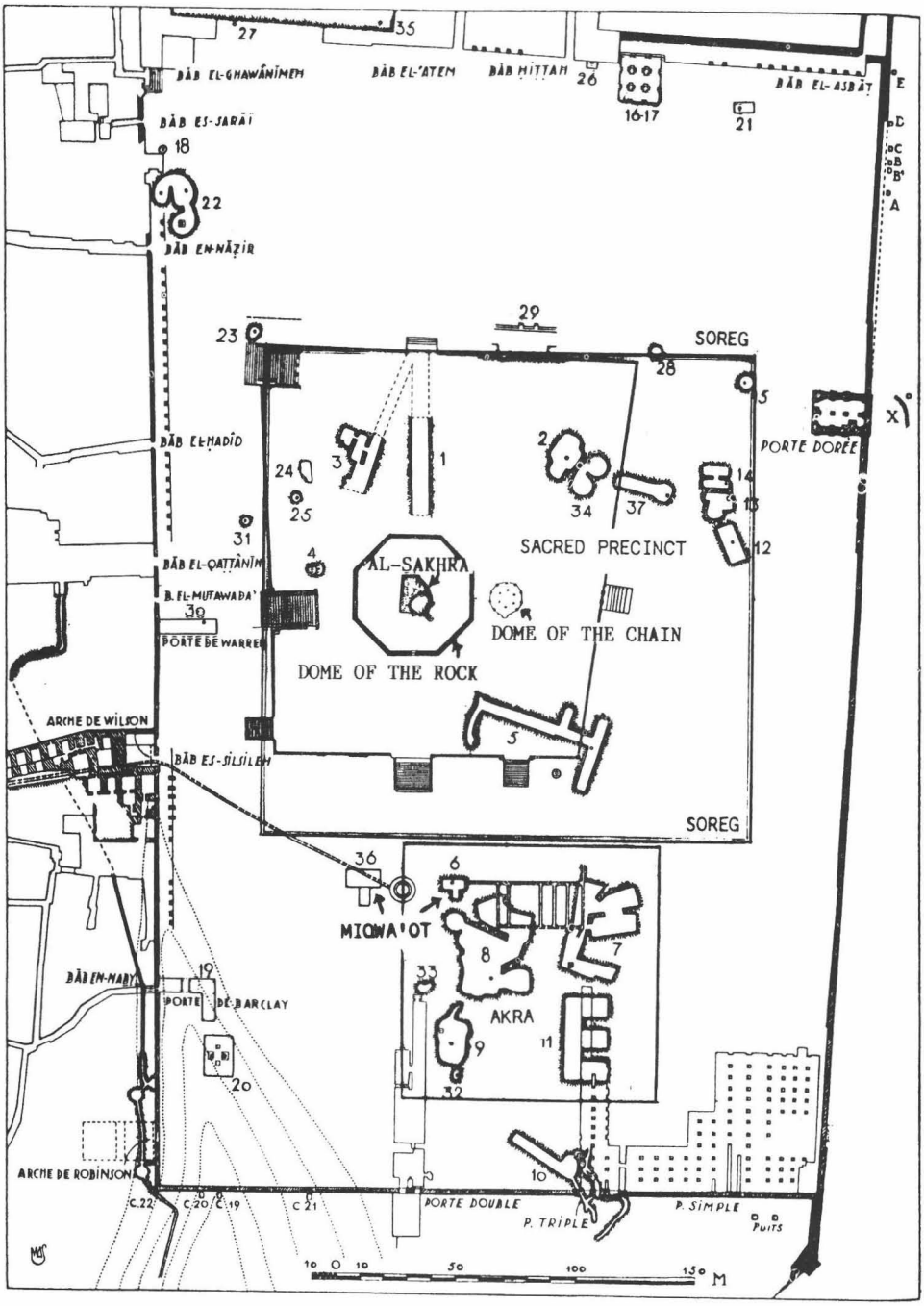

Fig. 2. The proposed sites of the sacred precinct (*har ha-bayit*) and the *akra*.

by Josephus (*BJ* 5.139; *AJ* 12.252, 406; 13.217). Tsafrir (1975, 510) has put forward the suggestion that the 'summit' levelled by Simon the Maccabee may have been the massive *podium* of the *akra*, destroyed along with the rest of the hated Seleucid citadel.

As noted above, the textual sources that refer to the *akra* make it clear that it stood cheek by jowl with the Temple (Wightman 1989–90, 35–6). With the *akra* therefore defining the southern limit of the enclosure at the time of the Maccabaean uprising which, as we have maintained, was preserved by the line of the *soreg* balustrade in Herod's scheme, the citadel dovetails nicely with the latter, as indicated in Fig. 2. Presumably, the eastern wall of large ashlars north of the seam was constructed as part of an expansion of the enclosure undertaken in the Hasmonaean period, possibly by the Maccabee brothers, Jonathan and Simon (1 Macc. 10.11; 12.36–7; 13.52; Jos. *AJ* 13.181). This picture of a gradual enlargement of the Temple area spanning the two centuries between Hecataeus and Herod accords well with Josephus' account (*BJ* 5.185–6).

A recent observation made by Reich would seem to further reinforce the proposed location of the *soreg*. Two of the subterranean cavities, that had been classed by Wilson and Warren as cisterns, have been identified as *miqwa'ot* (Jewish ritual baths) by Reich (1989). These two cavities, Nos. 36 and 6 in Wilson's scheme (Wilson 1866, 42–5; Warren and Conder 1884, 217–25), are similar in plan, resembling the letter 'T'. They also share the same orientation, namely their main arm is aligned east-west and the central projecting arm points south. The southern extension originally contained the flight of steps that joined the rectangular pool transversely. According to our scheme, these *miqwa'ot* would have been situated just outside the southern perimeter of the *soreg*, as shown in Fig. 2. Consequently, they would have provided worshippers entering the Temple area via the *Ḥuldah* Gates with an opportunity to ritually cleanse themselves immediately before continuing into the sacred enclosure. As Reich points out, the symmetrical position of these installations 'on either side of the western *Ḥuldah* Gate points to an interconnection between them and the gate' (Reich 1989, 64). This means that these elements were part and parcel of the same scheme. It is also not without significance that the two pools are correctly oriented with the principal axes that we have identified for the Herodian Temple complex.

Thus, the position and size of the area enclosed by the *soreg*, referred to in the Jewish sources as *har ha-bayit* are compatible with the evidence provided by the ancient texts and the physical remains. This is not to say that the hypothesis presented here resolves all the enigmas associated with the layout of Herod's Temple. A case in point concerns the passage in the *Mishnah* which states that the 'largest part (of *har ha-bayit*) was to the south, the second largest was to the east, the third largest was to the north and the smallest was to the west' (*Middot*, 2.1). If we take this somewhat terse passage to refer to the areas in the various directions between the podium of the actual Temple and the *soreg*, it accords partly with the reconstructed plan shown in Figs. 1 and 2, except with regard to the north side. In our scheme, the northern and southern areas are approximately equal. There is no

obvious solution to this discrepancy other than to suppose that the northern side of the hallowed area was occupied by various structures that created an apparent assymmetry between the two sides. Some of these buildings might have been connected with the subterranean passages linking the Temple with the *Ṭadē* Gate to the north, that were used by the priests (*Middot*, 1.9). These passages have been identified with cisterns No. 1 and possibly also No. 3 in Wilson's classification, shown in Fig. 2 (Wilson 1866, 43; Warren and Conder 1884, 99–100; 217–18; Hollis 1934, 218–19; 259–60; 270–1, Pl. XXI).

Setting Out the Ground-Plan of the Herodian Temenos

With the geometrical basis of the ground-plan of the *temenos* of Herod's Temple identified and some substantive evidence provided for the layout, an explanation will now be given of how the plan would have been set out by the arcitects at the actual site.

The new scheme would have faithfully preserved the position and essential dimensions of the Temple Shrine and the altar from the earlier arrangement. This is clearly implied from the assurances given to the population by Herod, as recorded by Josephus (*AJ* 15.389), to the effect that the old Shrine would not be dismantled until all the materials needed for its rebuilding had been got ready. As a further guarantee that the new buildings would satisfy Jewish ritual requirements, Herod assigned the construction of the Inner Temple to priests, whom Herod had specially trained as masons for this task (Jos. *AJ* 15.390, 420–1). Outside the *soreg*, which marked the boundary of hallowed ground, Herod and his architects enjoyed a greater degree of freedom (Jos. *AJ* 15.420). Here they were able to create a stylish *quadriporticus*, incorporating a basilica on one side, that was in harmony with the cosmopolitan architectural tastes of the Augustan Empire. This classical arrangement was used to set-off and enhance the prestige of the more modest-scale Jewish Temple.

The altar, which stood at the centre of the sacred enclosure before Herod embarked on his rebuilding project, was maintained as the focal point of the Herodian scheme. One of the principal axes of the new scheme was defined as the line of symmetry passing through the Sanctuary and altar (Fig. 3a). In the Herodian enlargement of the *temenos*, this axis was lengthened to twice the distance between the centre of the altar, O, and the east wall at Q. Extremum P determined the position of the western boundary of the enlarged *temenos*.

Points R and S, such that lengths PQ $\triangleq$ PR $\triangleq$ RQ $\triangleq$ PS $\triangleq$ SQ, defined the positions of the north and south walls of the *peribolos*. These points may have been determined directly at the site by geometrical procedures, using a cord of fixed length equal to PQ. By holding the cord successively at points P and Q, and drawing arcs about these free ends, the points R and S would have been obtained at the two intercepts between the two arcs, as shown in Fig. 3b. The large area of the site and the possible obstruction presented by the Temple Sanctuary suggest that a different procedure might have been used. This would have involved the following steps:

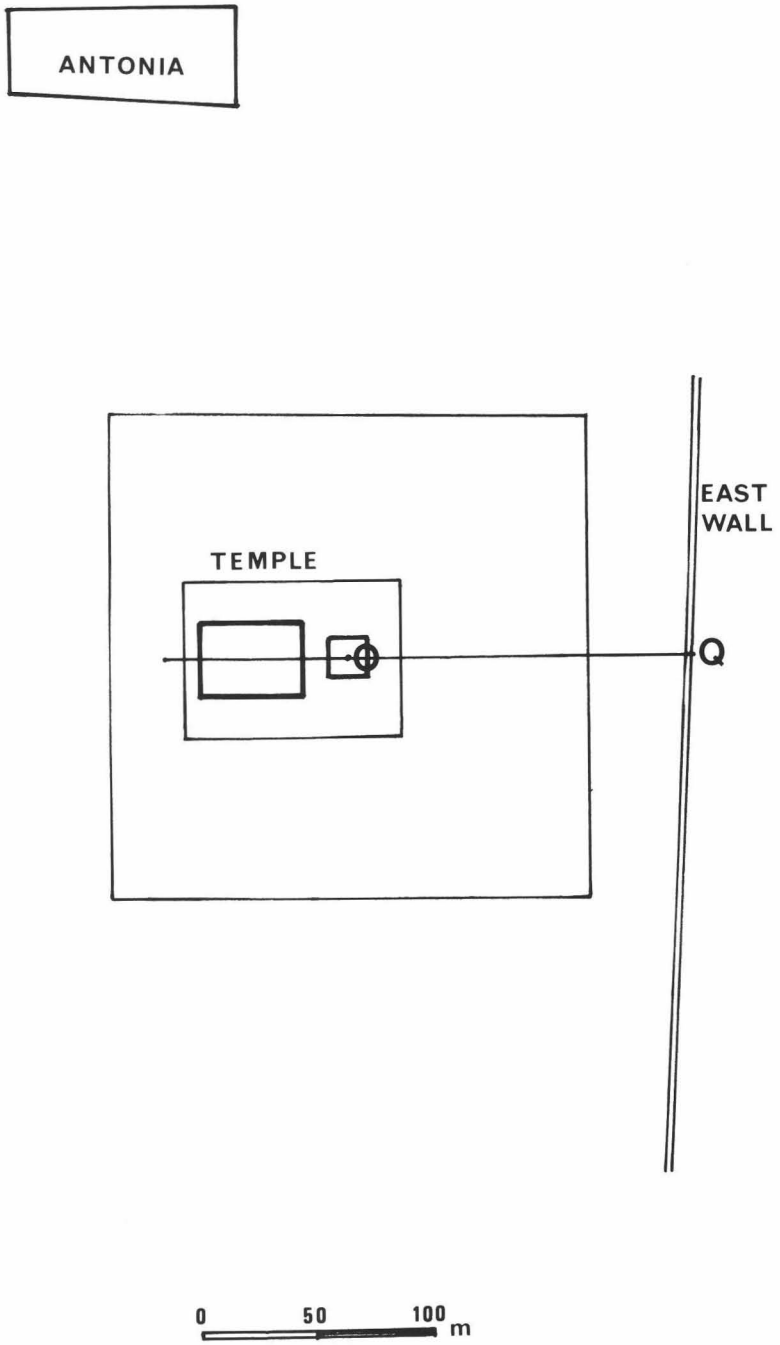

Fig. 3(a). Pre-Herodian Temple shown in relation to the eastern wall and the Antonia fortress. OQ = the principal axis of the Temple.

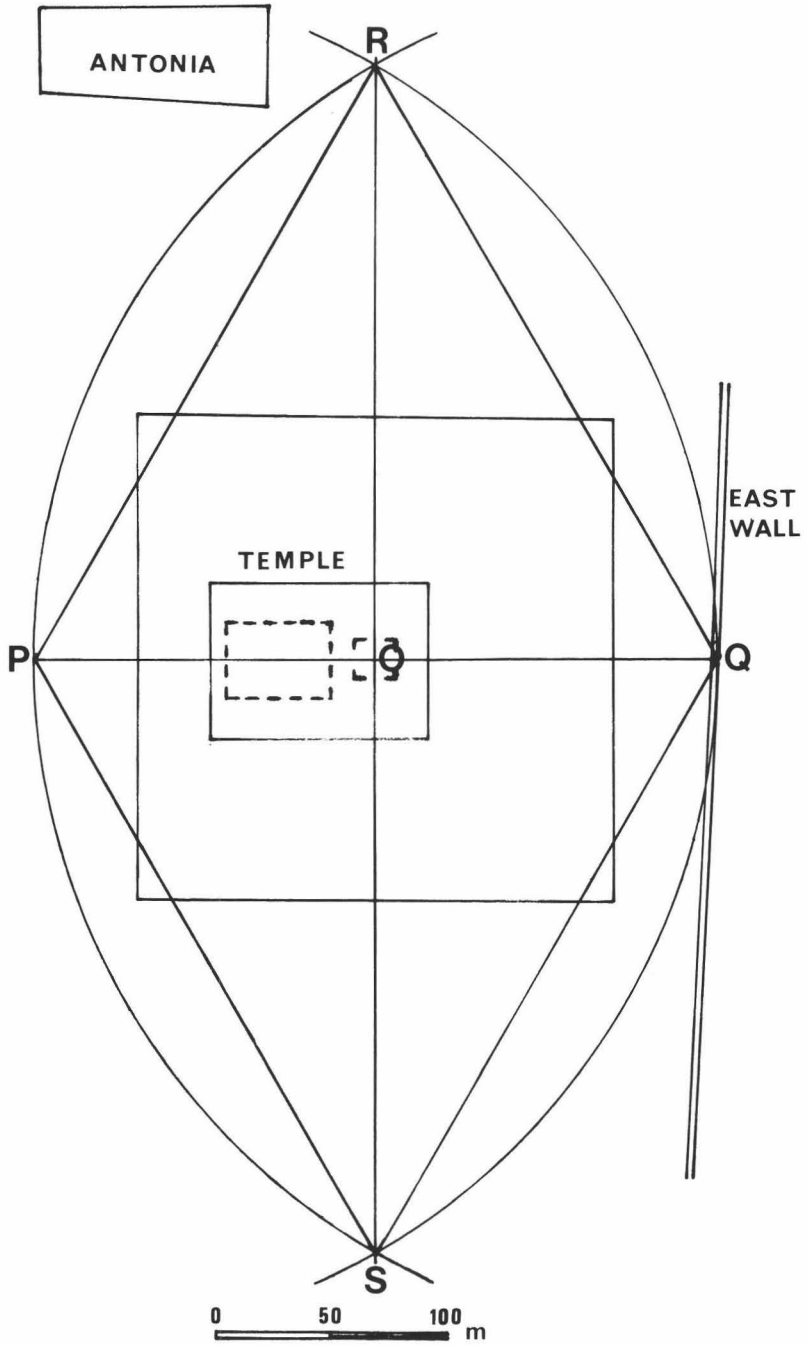

Fig. 3(b). Schematic diagram indicating how the area of the Herodian *temenos* was set out. PQ and RS are the principal axes of the *temenos*.

1 Surveying the site;
2 Formulating the geometrical scheme and drawing it on a suitable surface, using a straight-edge and compasses (Wilkinson 1981, 171–2; Jacobson 1986, 69);
3 Translating the scaled-down architectural drawing to the actual ground plan by measuring the key dimensions on the drawing to the nearest dactyl ($\frac{1}{16}$ of a Roman foot) and multiplying them up by an appropriate scaling factor (Coulton 1975, 82; Wilkinson 1981, 160–1).

It is notable that the length of the principal west-east axis, PQ = 296 m = 960 Roman feet (to within 0.2%), which is divisible by both ten and twelve. The key dimensions of Roman buildings are frequently observed to be expressed as simple multiples of four or five Roman feet and in several instances are multiples of ten or twelve (Jacobson, 1986, 84; Wilson Jones 1989, *passim*). Accordingly, the *temenos* of the Temple of Jerusalem, appears to fit the general pattern in this regard.

The deviation of the ground plan, as realized, from the idealized geometrical scheme can be attributed to the imprecision of the methods then in use for setting out ground-plans. The two principal tools employed for this purpose, the measuring cord and the measuring rod, were prone to error (Coulton 1975, 90–1). Calibration errors and the uneven topography might have amplified the distortions introduced to the ground-plan and indicated in Fig. 1.

In the execution of the systematic scheme, Herod's builders were obliged to make indelible changes to the natural terrain. The southern part of the expanded *temenos* had to be raised on vaulted substructures. On the northeastern side, a branch of the Kidron Valley was filled in, while towards the northwest the rising rock-scarp was levelled flat. All these changes have left their indelible mark. This subordination of the landscape to the whims of architectural grandeur is a constant theme running through Herod's building enterprises. The vast concrete harbour of Sebastos built to serve Caesarea Maritima was one such evident feat over nature, to quote Josephus (*BJ* 1.310–11; cf. Hohlfelder *et al.* 1983), and the artificial hill of Herodium was another (Jos. *BJ* 1.419; cf. Netzer 1981). At Herodium, an adjacent hill was levelled to enhance Herod's creation (Netzer 1981, 86).

The Question of the Rock Known as As-Ṣakhra

The question still remains, how can the existing rock known as *as-Ṣakhra*, a prominent natural feature, be accommodated into the proposed plan?

A simple and acceptable solution is to assume that the present rock is not the summit that existed prior to the destruction of the Temple by Titus. Piecing together the information contained in our two principal sources, it is inferred that the minimum height of the Court of the Priests above the floor of the Temple Shrine above the esplanade corresponded to 14 + 12 + 5 = 31 steps, equal to 15.5 cubits or 7.2 metres in this reconstruction.

Now, the highest point of *as-Ṣakhra* is at an altitude of 743.7 metres, approximately 5·7 metres above the mean level of the *Ḥaram* of 738 metres in the vicinity of the elevated platform of the Dome of the Rock (Busink 1970, 13, n. 47). We

have no reason to believe that the level of the *Ḥaram* has risen since Herodian times, especially as a large part of the floor of the esplanade is exposed bedrock. This supposition is supported by another observation. The base of the upper pilaster course in the west wall of the Herodian *peribolos* is level with the esplanade at the point where a fragment of this feature survives in-situ, close to the northwest corner of the *Ḥaram*. A similar correspondence is observed between the base of the pilaster course and the enclosed platform in the much better preserved Herodian Tombs of the Patriarchs in Hebron (Vincent and Mackay 1923, 42–3; 103–4; Pl. VI). Likewise, the plinth moulding on the inner wall of the *adyton* is level with the outer *stylobate* in the Ionian temple of Apollo Didymaion (Knackfuss 1941, 67). The architecture of this prestigious sanctuary, as rebuilt under the patronage of the early Seleucid kings (Voigtländer 1975), exerted much influence over subsequent Hellenistic and Roman buildings and also, it would seem, over those of Herod. The arrangement employed at Didyma is, in a sense, a convolution of the enclosures at Jerusalem and Hebron, with its great pilastered wall turned in on a sunken internal court.

Because the level of the *Ḥaram* has not changed, we reach the inescapable conclusion that the ancient summit of Mount Moriah has been reduced by approximately 1.5 metres since the days of the Second Temple. Busink (1970, 13) has estimated this shortfall in the elevation of *as-Ṣakhra* to be 1.3 metres. The pioneering investigator of ancient Jerusalem, Barclay (1858, 242) was the first to record the fact that the Rock (*as-Ṣakhra*) was 'not sufficiently elevated' for the floor of the Temple Sanctuary (cf. Bagatti 1979, 19–20).

The truncation of the summit must have occurred before the fourth century when the Bordeaux Pilgrim recorded seeing the 'lapis pertusus' familiar to us today (*Itin. Burdigalense* 591.4, *Corpus Chr.* vol. 175, 16). The identification of the 'lapis pertusus' with as-Ṣakhra is widely accepted (Busink 1970, 6 with bibliography), although this position is not without its critics (Bagatti 1979, 27).

It is reasonable to assume that the cutting back of the summit was carried out by Hadrian's workmen, perhaps in preparation for his Temple of Jupiter referred to by the historian Dio Cassius (Dio Cassius, *Roman History*, 69.12.1). In a rare description of Aelia Capitolina, the foundation that replaced Jerusalem, the *Chronicon Paschale* refers to Hadrian's destruction of the sanctuary (*naos*) of the Jews at Jerusalem (*Chron. Pasch.* (ed. Dindorf) i, 474). This statement in the seventh century chronicle appears to reflect a tradition, repeated in Jewish literature elsewhere, of such an event (Smallwood 1981, 445).

One explanation is that the passage refers to a makeshift shrine erected at the time of the Bar Kokhba rebellion. However, the dearth of archaeological finds, including coins, ascribable to the Bar Kochba period in Jerusalem (Mazar 1975, 236), has led Mildenberg (1980, 320–5) to suggest that Jerusalem never fell under the control of Bar Kokhba's forces.

Another possibility is that Hadrian 'desecrated the site (i.e. substructure of the sanctuary) irreparably' (Smallwood, 1981, 445). The underground cavern might then logically be attributed to the same stone cutting operation. Crypts beneath the

cellas of temples, usually in the form of rock-cut chambers, are a recurrent feature of the temples of Lebanon, Syria, Transjordan and Asia Minor (Will in Seyrig, Amy and Will 1975, 166; Naumann 1979, 65–6; Parapetti 1983/4, 82; Pl. XI). These crypts, which were reached from the *cella* itself or from the *podium* of the temple had a function that remains unclear.

Quarrying, in Kenyon's opinion, is the hallmark of the Hadrianic period in Jerusalem (Kenyon 1974, 263). If, as she contends, 'Hadrian very literally abolished Jewish Jerusalem' in order to build his new town of Aelia Capitolina (*ibid.*, 264), Mount Moriah, the site most sacred to the Jews, would have been particularly vulnerable to his endeavours to erase the Jewish character of the city.

The Rock itself bears evident signs of quarrying which may not only be due to Christian pilgrims eager for relics at the time of the Crusades (Busink 1970, 13; 1980, 998–9). The records left by Muslim visitors to the *Ḥaram ash-Sharīf* prior to the Crusades bear witness to the fact that the Rock is not significantly shorter than in their day. The tenth century travellers, Istahrī and Ibn-Hawqal described the Rock as being 'breast high' (Le Strange 1890, 123; Marmardji 1951, 214), whereas Nāṣir-i Khusraw of the following century, who is generally more accurate, described the Rock as standing to the height of a man (Le Strange 1890, 128; Marmardji 1951, 222). By comparison, the Rock summit now reaches 5 feet 3 inches (1.60 metres) above the floor of the Dome of the Rock (Conder 1880a, 82).

By the third and fourth centuries, all that could be seen inside the area once occupied by the Temple proper was the exposed crag of *as-Ṣakhra* and the two imperial statues, one of the emperor Hadrian on horseback (Origen, *C.Matt.* 4 on 24.15 (fr. 469, iv), *GCS (Origenes 12)*, 194; *Itin. Burdigalense* 591.4, *Corpus Chr.* vol. 175, 16; cf. Wilkinson 1976, 77–8: 1977, 173a–b; Creswell 1969, 29–32). Origen noted that the latter was erected on the site of the Holy of Holies (Origen, *ibid.*), which, on the basis of the present plan, would have stood immediately to the west of the Rock.

The Bordeaux Pilgrim of the fourth century was also able to discern the site of the altar, delineated in the marble paving (*Itin. Burdigalense*, 591.1, *Corpus Chr.* 175, 15; cf. Wilkinson 1977, 173a–b). Evidently, this spot was still held in reverence when the Arabs conquered Jerusalem; when half a century later they raised the Dome of the Rock over *as-Ṣakhra* (Creswell 1969, 65–100), another cupola, the Dome of the Chain, was simultaneously erected over the site of the altar (Burgoyne 1987, 45; Rosen-Ayalon 1989, 25–9). By then the original associations of these sites had become obscure and were superseded by new traditions (Le Strange 1890, 114–73; Marmardji 1951, 210–60). Meanwhile, the symmetrical layout of the Herodian *temenos* was vanishing under the accretions of the ages that followed.

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Notes

1 A useful review of the various theories including his own, together with an extensive bibliography, is provided by Busink (1970, 1–20).

2 On this subject, a degree of uncertainty is compounded by some confusion inasmuch as more than one standard cubit was employed in ancient Palestine. A cubit of six hand-breadths is implicit in the specification of Solomon's Temple given in II Chronicles 3.3, where measurements are quoted 'in cubits of the old standard'. This expression is used to distinguish the standard of Solomon's time from the long, or royal, cubit of seven hand-breadths then in use (Paul and Dever, 1973, 173–4; Wright, 1985, i. 118–19). The *Mishnah* adds a further twist by referring to three standard cubits displayed in the Palace of Shushan Gate of the Second Temple, differing from one another by half a finger-breadth (*Kelim* 17:9; cf. Jeremias 1969, 11–12, n. 20). One may reasonably assume that the cubit of Herod's Temple was close in value to the one used in Solomon's Sanctuary (Scott 1958, 205–14; 1959, 22–40). Scott estimated that one short Solomonic cubit was equal to 0.444–0.450 m (cf. Simons 1952, 406, n. 1). Ben David (1969, 159–69; 1978, 27–8) deduced from a study of artefacts and structures that the short cubit of Herod's day had a length of about 0.465 m. Jeremias (1969, 11–12, n. 20), without adequate justification, supposed that the long cubit, equal to the so-called Philaetarian cubit of 525 mm, was the one used for Herod's Temple.

3 This relationship is also consistent with the reconstruction of the Royal Basilica on the south side of the enclosure, as suggested by Hollis (1934, 106–7), according to which the building extended across the entire width, from the southwest corner to the southeast corner of the present *Ḥaram*, each of the stoas being divided into 40 colonnaded intervals. Allowing for one column thickness of 1.55 m (Grafman 1970, 61), each intercolumniation would have been (280 − 1.55/40 = 6·96 m, which is exactly 22.5 feet of 0.309 m (ibid., 65–6). But, as noted by Hollis (1934, 107), 2 × 22·5 feet is equivalent to the 30 cubits given by Josephus (*BJ* 5.190–92) for the width of the double porticoes that ran along the border of the *temenos* of the Temple (*AJ* 15.396; *BJ* 1.401). That being the case, the columns of the double colonnades would have registered with those of the basilica where they met at right angles, which is reminiscent of the arrangement used in the mid second century AD agora at Smyrna (Naumann and Kantar 1950, 69–114). The same formula was also employed in the peristylar court of the Sanctuary of Zeus Soter at Megalopolis, that may date from the second century BC (Coulton 1976, 256). This temple was surrounded by twin-aisled porticoes on three sides and a triple stoa on the fourth side.

4 A step height of approximately 0.23 m is also consistent with step heights recorded in three famous temples in Asia Minor, dating from the Hellenistic and early Roman imperial periods, as shown in the table below:

temple	ascribed value of the foot, F	step height, c	cubit, C = 2 × c	ratio 3F/2C
Magnesia	0.328 m[r1, 45]	0.233 m[r1, 40]	0.472 m	1.06
Didyma	0.298 m[r2, 62]	0.225 m[r2, 47]	0.450 m	0.99
Aizanoi	0.314 m[r3, *]	0.260 m[r3, 14–15]	0.520 m	0.91

r1 = Humann 1904; r2 = Knackfuss 1941; r3 = Naumann 1979.

* calculated from the dimensional plan in Naumann 1979, 12, Fig. 5. Naumann's value of 1 ft = 0.296 m (*ibid.*, 14) does not provide a convincing modular fit to the building's principal dimensions. Using less accurate data, Weber (1969, 196) deduced a foot of 0.311 m for this temple.

This table also shows that the relationship 2 cubits = 3 feet was generally observed in these temples.

5 Josephus states that this basilica was one stade long (*AJ*, 15.415), although a little earlier in the same text he emphasized that it stretched the entire length 'from the eastern to the western ravine (i.e. from the Kidron Valley to the Tyropoeon). It was not possible to extend it further' (*AJ*, 15.411). This is patently an error, because the south wall, which survives along its complete length between the two valleys, is 280 metres, i.e. more than $1\frac{1}{2}$ stades long. When Josephus wrote these passages, his memory evidently cast up the 'one stade per side' of the sanctified area of the Temple Mount. His statement in the *Jewish War* that the complete circuit of the Temple porticoes of the *peribolos* measured 6 stades (Jos. *BJ*, 5.192) is also a considerable underestimate, by more than 50%. We have further evidence of his use of incorrect figures elsewhere, for example in relation to the perimeter of the *temenos* of the *Sebasteion* at Samaria-Sebaste, which he gives as $1\frac{1}{2}$ stades = 267 metres (Jos. *BJ*, 1.403) as compared with an actual value of approximately 305 m for its main courtyard and enclosing porticoes, but not including the actual temple. The latter projects beyond the quadrangle and adds a further 90 metres to the perimeter of the *temenos* (Netzer 1987, Figs. 1 and 3).

6 A similar conclusion concerning the location of the Seleucid *akra* has been reached independently by Wightman (1989–90) from a critical assessment of the textual sources.

Abbreviations

Abbreviations relating to textual sources used in this article are:
Corpus Chr. = *Corpus Christianorum, Series Latina*, Turnhout 1953ff.
GCS = *Die griechischen christlichen Schriftsteller der ersten drei Jahrhunderte*, Leipzig and Berlin, 1897 ff.

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Three Coins of Alexander Jannaeus from El ʿAl in The Golan Heights

SHIMON GIBSON and DAN URMAN

Three bronze coins of Alexander Jannaeus (103–76 BC) of the star/anchor types, from El ʿAl in the Golan, were recently examined by the authors in the collections of the Palestine Exploration Fund. These coins were in a small envelope marked on the outside with three numbers: 38, 39, 40 (Pilcher, n.d., 15). A segment of card inside the envelope had the name of George Armstrong printed on its front. Armstrong was the Acting Secretary of the *PEF* between the years 1887–1910. Inscribed in pen on the back of the card was the following: 'Jewish. 1089. Alexander Jannaeus. From Elal. – E. shore of Lake Tiberias. Jolan.'[1]

The three coins are of the well-known types of low denomination (cf. Hill, 1914, pp. 207–11, Pl. XXII, Nos 1–12; Narkiss, 1936, p. 98, Pl. II, Nos 9–10; Reifenberg, 1963, p. 41, Pl. II, Nos 14–15; Meshorer, 1967, p. 119, Pl. II, Nos 8–9; Kindler, 1974, pp. 16–17, Nos 8–10; Meshorer, 1982, pp. 119–22, Pls 5–7 *passim*). The description of the three coins (Figs 1–2) is as follows:

No. 1 Bronze, 15.5 mm, 1.70 gr.;
Obverse: Star with eight rays and a central knob within a plain border.
Reverse: Anchor surrounded by Greek inscription: (of Alexander the king).

No. 2 Bronze, 12 mm, 1.40 gr.;
Obverse: Star with six rays and a central knob; the rays extend over the beaded border.
Reverse: Anchor (?) within a plain border.

No. 3 Bronze, 14 mm, 1.07 gr., struck off flan;
Obverse: Star with six rays and a central knob within a beaded border.
Reverse: Anchor within a plain border.

Nothing is known about the name of the person who deposited these coins in the *PEF*. It is doubtful whether G. Schumacher who visited El ʿAl during his survey of the Golan region (1888, 81), would have described the site as being on the east shore of Lake Tiberias (Sea of Galilee). The coins were probably given to the *PEF*

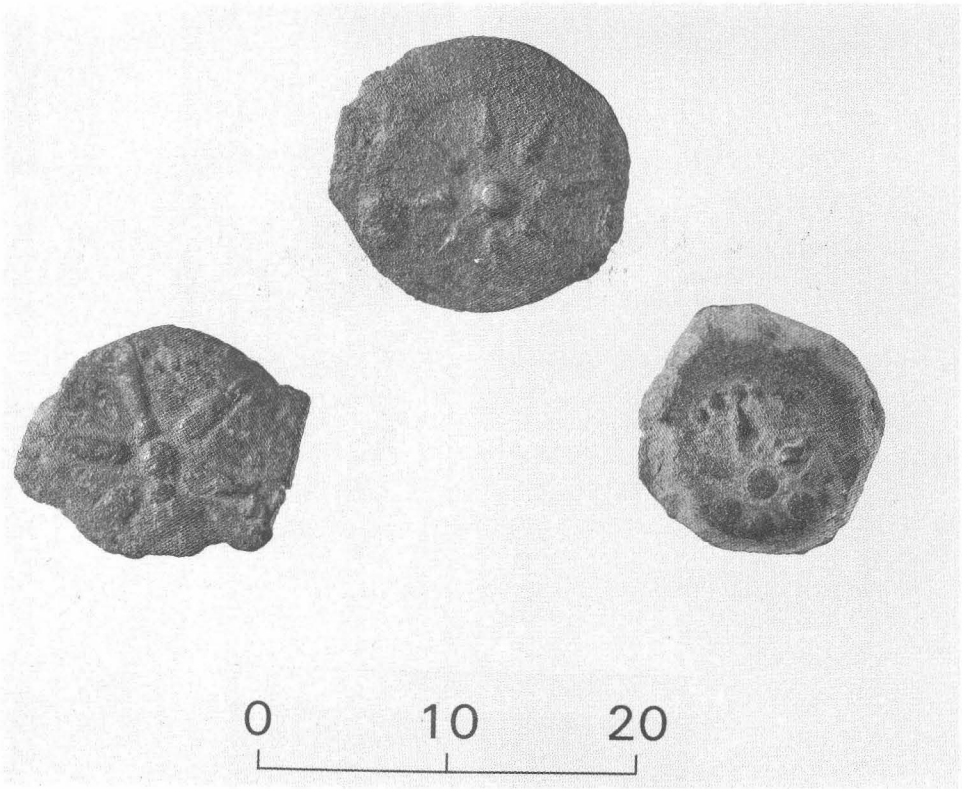

Fig. 1. Obverse view of Coins (from left to right) Nos. 2, 1 and 3 (Photo: L. Woodman).

by Sir Laurence Oliphant who described a visit he made to the site in an article for the *PEF Quarterly Statement* (1885, 87) entitled, appropriately enough, 'Explorations north-east of Lake Tiberias and the Jaulan'.

El ʿAl is the site of a large village in the southern Golan (Israel grid map ref. 2200 2457), on the road linking Rafid with el-Hammeh (Hamath Gader). The village is located at the head of the southern tributary of Wadi Semakh. J. L. Burkhardt passed the site during his visit to the area in April–May 1812, and described it as a 'ruined village' (1822, 281; see also Ritter 1866, 284). Oliphant visited the site during the Winter of 1885 (1885, 87; 1886, 250–1), mentioning the large stone vaults of a 'building of some importance' in the village, a Corinthian column and a broken statue of a woman. Schumacher later also visited the site and recorded various antiquities which had been dug up in the vicinity of the village, including a statue (probably the same one Oliphant saw), a Greek inscription, architectural fragments and sculptured sarcophagi (1888, 81–5). Schumacher wrote: 'Avarice and curiosity will prompt the inhabitants of el-ʿAl to further investigations, which will result in bringing more discoveries to light'.

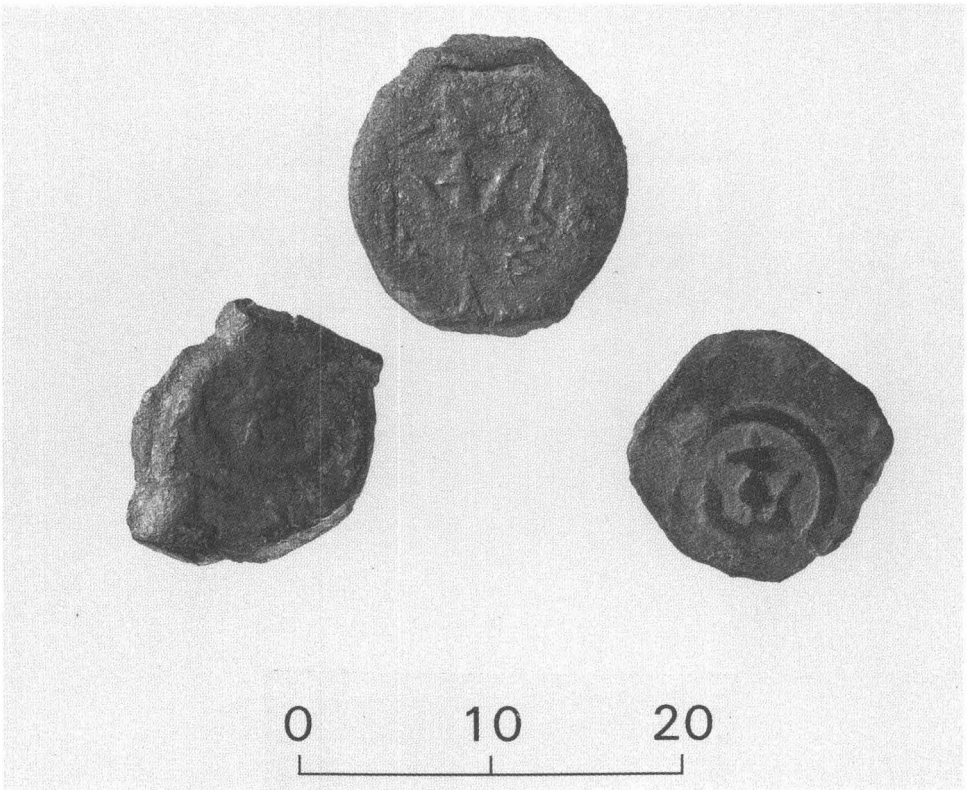

Fig. 2. Reverse view of Coins (from left to right) Nos. 2, 1 and 3 (Photo: L. Woodman).

During recent times the village was investigated in 1968 by archaeological survey teams led by C. Epstein and S. Gutman (1972, 287–8). They recorded inscriptions, decorated arechitectural fragments and pottery from Hellenistic (?), Roman, Byzantine and Ottoman periods.

In 1969, a two-week survey of the site was carried out by D. Urman (1985, 206). During this survey it became clear that the ancient ruins in the centre of the village extended over an area of about 100 dunams (approximately 25 acres). In addition to the pottery types noted by Epstein and Gutman, Urman's team recorded pottery from the Early Arab and Medieval periods, including wares exclusive to the Crusader period. Traces of walls built of large ashlars with chiselled margins, were visible beneath the densely-built modern village. These remains suggested the existence of a large medieval building which would have protected the spring in the wadi below. Perhaps this building is to be associated with the fortress of Qasr Bardawil built in the early twelfth century?

A number of Syrian houses were investigated which had been built over 'Hauran'-style houses of Late Roman and Byzantine date. The ancient rooms were

being used as the cellars in the modern houses. Some of the internal walls were pierced with 'Korazin windows', a few had troughs which were used as mangers. Nearly all of the Syrian houses in the centre of the village were built out of ancient stones. On the east side of the village, south of the Syrian mosque, there was a large concentration of ashlars and architectural fragments, including bases, columns, and capitals. These probably all derived from the ruins of a public building. Many inscriptions were also found at the site and they will be published in a forthcoming corpus of Greek inscriptions from the Golan by D. Urman and R. C. Gregg.

The significance of the three Jannaeus coins from El ʿAl is that they come from a site situated in the southern Golan. Coins of Jannaeus have also been found during the excavations at Gamala in the Golan (Gutman, 1981, 43, 140–1; Meshorer, 1982, 45). The geographical distribution of such Jannaeus coins is now known to be quite wide, with coins appearing from as far afield as Cyprus (Barkay, 1977, 119–20) and Dura-Europos (Bellinger, 1949, 11, Pl. V, No. 175).

Alexander Jannaeus's link with the Golan is an extremely interesting one. Between the years 93–90 BC (concerning the date, see Schürer, 1973, 577), he clashed with the Nabatean king Obedas I near a village site called Garada Γαράδα), or Charadra (χάράδρα), or Gadara (Γάδαρα) (see the different manuscripts of Josephus' *Ant.*, XIII, 375). According to Josephus (*ibid.* and cf. *War*, I, 90), Jannaeus retreated down a deep valley after having been ambushed by the Nabateans. The precise reason behind this clash is not known (Kasher, 1988, 90), nor is it clear where ancient Garada, or Charadra, or Gadara of *Ant.*, XIII, 375 was located (Stern, 1981, 42; cf. Urman, 1982, 9, note 5; Urman, 1985, 10–11, and 25, notes 7–8; Maoz, 1986, 29–30; Kasher, 1988, 92ff.). Presumably Jannaeus was trying to weaken the Nabatean hold over the road linking the Nabatean kingdom with Damascus. Hence Garada, or Charadra, or Gadara should perhaps be sought at a location along the eastern limits of the Golan, rather than at Bîr esh-Shqûm (according to Maoz, 1986, 29–30) in the southwestern Golan.

Jannaeus eventually succeeded in extending his control over central and southern Golan, conquering the cities and fortresses of Gamala, Golan, Seleucia and Hippos, during his campaign of 83–80 BC (*Ant.*, XIII, 393–4; *War*, I, 104–5; *Syncellus*, I, 558–9). El ʿAl may have been settled by Jewish settlers and/or by Jannaeus' mercenaries (cf. Stern, 1981, 31), immediately following this campaign.

Note

1 According to a handwritten list of coins in the Palestine Exploration Fund prepared by Mr E. J. Pilcher during the early part of this century, a further thirteen coins were found at El ʿAl (Nos 145, 41–6, 117, 86, 115, 116, 143, and 144): 1 Seleucid; 6 Hasmonean (of Alexander Jannaeus); 2 Roman (including a coin struck at Ashkelon in AD 198); and 4 Byzantine (including two of Constantius II, AD 337–361, one of which was struck at Constantinople). The coins themselves have not yet been located in the *PEF* collection of coins.

Acknowledgements

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Book Reviews

Review Article: In Pursuit of the Early Bronze Age

RUPERT L. CHAPMAN

De Miroschedji, P. (Ed.)., *L'urbanisation de la Palestine à l'âge du Bronze ancien: Bilan et perspectives des recherches actuelles: Actes du Colloque d'Emmaüs, 20–24 octobre 1986,* BAR International Series, 527(i–ii) Oxford, 1989. Price £28.00.

Too early for those with 'biblical' interests, too late for those with 'prehistoric' interests, the Early Bronze Age has long been the Cinderella of Levantine archaeology. This lack of interest is exaggerated by the fact that the Early Bronze levels on most sites lie beneath many metres of later deposits. In consequence, the number of major works devoted to this period is very small, and any addition to their number is most welcome. This is without any doubt the most important single work on the Early Bronze Age yet published, and congratulations are in order to the organizers, the participants, and the editor. It is quite a coup for BAR to have landed it for a British series, when it might have gone to a French one. The Early Bronze Age provides an interesting challenge, as it is, at most, telehistorical, with a few cryptic references in Egyptian texts. In this period, then, archaeological techniques come fully into their own in the interpretation of a state-organized culture unimpeded by the tortuous complexities of textual studies of the Bible, and the religious and political beliefs which accompany them, which beset the text-impeded historical archaeology of all later periods. The traditional techniques used in Levantine archaeology, which rely on the interpretation of the archaeological remains in terms of the sequence of events already known from the historical, are clearly inadequate for the understanding of this period. Similarly, the traditional goal of using archaeological remains to write the history of the period will not work, nor can Albright's aim of studying the religious history of the period be carried out in the absence of any texts. These circumstances provide the ideal point of entry for the aims and techniques developed in Europe and the United States over the last thirty years. That this type of new thinking is beginning to take root in Levantine archaeology is clear from some of the papers in a colloquium held in Emmaus on 20–24 October 1986, while other papers reveal the tenacity of some of the falsified hypotheses of the past.

The two volumes under review result from the seven sessions of the colloquium, each of which had its own theme. The first of these concerned the emergence of the Early Bronze culture of Palestine. Braun's metaphor of the semi-permeable mem-

brane (p. 8) through which information passed from the Chalcolithic culture to the Early Bronze I culture, is excellent. This remains valid even if the 'temporally proximal' ends of the two cultures overlap, as I believe they do. So does his rejection of both extreme diffusionist and anti-diffusionist views, and his recognition that what is true in the north might not be true in the south. His recognition of the existence of 'a mosaic of regional variations' (p. 9) is an important departure from the traditional Albrightian paradigm in which such regional variation is explicitly excluded (Albright, 1965, 47–9). His explicit recognition of the polythetic nature of the 'northern culture' is also a step in the right direction. On the other hand, Braun sees no evidence for a Chalcolithic/Early Bronze I overlap, which leaves room for the possibility of rigid succession. This, however, is, at present, a matter of interpretation, since similarities between artefact types in two cultures may also represent horizontal, synchronic, as well as vertical, diachronic, relations. This need not remain the case, however, since the chronological relations between assemblages may be tested independently. Braun cites one type of evidence, in the form of objects usable for cross-dating, which would indicate an overlap (p. 24). Another would come from suites of C14 dates from Chalcolithic and EB I sites. This would also have the advantage of being logically independent of the archaeological evidence. Yet another would be the establishment of a dendrochronological sequence for the Levant, which, with its environmentally marginal climate, would seem to be the ideal region for this type of study.

The next two contributions to this debate are much less impressive. Eisenberg recognizes that Tel Teo was abandoned by its Chalcolithic inhabitants and resettled, after a time, by an EB I population. There is in this no evidence to support his conclusion that the EB I culture is intrusive or represents a 'change in ethnic elements' (p. 39), nor, of course, to oppose it. He has not discussed any evidence relevant to this question, which he treats in a wholly conventional manner. His hypothesis remains untested, and may be untestable. His Fig. 4:7, on which he offers no comment, is surely the large end of a 'churn' (cf. Fig. 4:17).

I see no evidence to support Ben-Tor's assertion that there was 'a massive population movement' (p. 41) at the beginning of the EB. It is curious that he does not see the 'Mediterranean economy' as having been established until EB I; the essentials of this economy were clearly established in the Neolithic. Ben-Tor's assertion of the isolation of the Chalcolithic settlements seems at odds with the growing evidence of trade between regions within Canaan, and between Canaan and Egypt (Prag 1986). It is not clear where Ben-Tor stands in the evolution/diffusion debate, in spite of an extensive discussion (pp. 42–4). His discussion of Chalcolithic and EB I architecture does not cover the doubts which have been raised for some years now by Braun as to the existence of 'apsidal' structures. For reasons which are quite unfathomable he classifies the oval houses excavated by Braun at En Shadud and Yiftahel as subtypes of the apsidal house. He refers to houses with rounded corners at En Shadud and Yiftahel, which are not visible in any of the published plans (p. 46).

Amiran's suggestion of the cultic significance of the 'churns', which she quite

plausibly reinterprets as water-carrying vessels, after rightly questioning the ethnographic parallel used to identify them as churns (pp. 55–6), is impressive. If this suggestion is accepted, it enables us to identify the deity worshipped in any temples in which such vessels are found, although it does not, of course, make all 'churns' ritual vessels. Rather, it should serve to remind us that, in contrast to our own secular society, in ancient societies there was no distinction between sacred and profane, and utilitarian objects could also have a cultic significance. It is also worth noting that, while we may be able to identify temples as for the worship of the water-deity concerned, we cannot determine the name of this deity, nor can we say anything specific about the ideology or mythology of this deity.

The second session was concerned with the unfolding of the process of urbanization. In Miroschedji's section entitled 'Chronologie' (pp. 63–6) he does not discuss chronology, but provides an excellent summary of current views on taxonomy and terminology. His suggestion that EB I represents the sedentarization of a semi-nomadic population (p. 66) has considerable merit. On the other hand, it is difficult to understand why he thinks that the occupation on the tell at Jericho only began in EB I B (p. 67). He begs the question of the definition of the term 'city' (p. 68). I agree with Popper that a term given an essential definition, as this invariably is, sets up an infinite regress. Since such a question is, by definition, unanswerable, I question whether the issue is worth pursuing. A relevant question which is, at least potentially, answerable is whether the fortified settlements of EB Canaan were chiefdoms or states, or, indeed, some one and some the other. He also sees the advent of war with the advent of fortifications. This presents great difficulties in view of the known number of Chalcolithic maces, quintessentially weapons of war. A more plausible suggestion would be an intensification of warfare in EB II. Miroschedji (p. 70), like Esse (p. 86), sees a major economic shift in EB II. I would offer the hypothesis that this is the shift from horticultural production essentially for use by the producers to agricultural production for exchange in a market. His list of characteristics of urbanism (p. 72) is clearly, and rightly, under the (unacknowledged) influence of Childe (1950). His reference to 'une mosaïque de cultures locales' (p. 73) is very important, both in its recognition of regional variation and in its use of the concept of the archaeological culture. As noted above, this shows that the Albrightian paradigm is breaking down, as the 'epochal' paradigm broke down in European prehistory fifty years ago. I am not clear, however, as to what he means by the phrase 'phases agro-pastorales' (p. 73 and Fig. 1). If it refers to transhumance then it is likely that it is true of EB I and IV. If it refers to pastoral nomadism, as it appears to in his conclusion (p. 75), I cannot agree. His use of the phrase 'la "longe durée" ', and his title of part II: 'Rhythmes', marks one of the first explicit references to the work of the great Fernand Braudel. This is an outstanding article, which will repay multiple readings.

It is a great relief to hear someone say 'In the absence of texts, or even art, the ideational aspects of society must remain a mystery', as Douglas L. Esse does (p. 82). Too often scholars attempt to 'get inside the heads' (as M. Harris puts it: 1968, 604) of the ancients. The increase in settlements without increase in site size which

Esse points out (pp. 82–3) strikes me as what I would expect to see in the expansion of a segmentary society. It should be noted that the shift of the EB I C city wall at ʿAi to EB II (p. 83, n. 2) is neither a change of date, nor a taxonomic change, but a change of label, a change of terminology, since Esse follows Schaub in calling what others have called EB I C, EB II. Esse's clear recognition of regionalism in the EB I culture (p. 84) is very welcome, as is his hypothesis that this culture exhibited a 'chiefdom' social organization (pp. 84–5). He examines the grounds for testing this hypothesis and the evidence for his conclusion that both ranked and segmentary organization were present in the EB I culture (p. 85). He recognizes the shift in mode of production between EB I and EB II, and the accompanying changes in social structure and settlement pattern (p. 86). In connection with this, he sees a change from an overland trade in small, high unit value goods in EB I to a seaborne trade in low unit value bulk goods in EB II–III (pp. 88, 89–90). He stresses the vital point that 'Urbanization was not only an ecological adaptation to the natural environment but also was an adaptation to the "superorganic" surroundings of competing city states' (p. 89). He rightly points out that the cultural history and traditions of coastal and inland Syria are distinctive, and, contra Childe, that 'trade with Egypt served as the catalyst for the rapid development of stratified society in Early Bronze Age Palestine' (p. 92). This is another outstanding article.

Gophna's study of the shifting pattern of settlement in the Lod Valley is interesting, especially the way the settlements appear to have moved upstream in EB as opposed to the Chalcolithic.

Amiran and Gophna's paper on 'Urban Canaan in the EB II and EB III Periods' contains two useful distribution maps. These could have included the Palestine Grid, for ease of reference, indication of topography, and differentiation of symbols for estimated site sizes. While it does seem likely that the Khirbet Kerak pottery was produced by an intrusive population group, there is no evidence to support the major invasion postulated by Gophna and Amiran (p. 115). Indeed, one of the problems concerning this pottery is that it appears to occur only as an acquired class within the standard EB III assemblage, and not to form part of a separate assemblage; there are no 'Khirbet Kerak' classes of artefacts other than pottery – no 'Khirbet Kerak' architecture, metalwork, fortifications, etc.

Seger's article attempts to correlate the strata at EB sites across the country. While he sees continuity between EB III and EB IV in the south, he contends that the northern cities were destroyed and then abandoned early in EB III (p. 119). In this he appears to follow Dever, as against the excavators, Kenyon and Kempinski, all of whom see a clear continuity of occupation at Megiddo from EB III to MB I (IIA); it is difficult to see how Megiddo XVI–XIV B can be placed in early EB III (p. 133). At ʿAi the latest datable Egyptian object is, indeed, Vth Dynasty, however, the Vth Dynasty objects were clearly heirlooms, found together with even older objects dating to the IInd Dynasty. There is no evidence to support the contention that the northern EB III ended earlier than the southern EB III, or that either ended earlier than 2180 BC (p. 133). On the other hand, there is every reason to believe that the EB IV culture began well before the end of EB III. It is high

time the Albrightian paradigm of rigid succession was abandoned, as it already has been by some of the other authors in this volume. As a result of these disagreements, while I can accept Seger's correlations within southern Palestine, I cannot accept his broader correlations or his dates for the end of the EB III culture or the beginning of the EB IV culture. Again, this merely illustrates the weakness of dating based on taxonomy alone, with its untested and untestable assumptions, which render it metaphysical (in Popper's use of the term). Such taxonomic dating lacks the crucial factor of logical independence, in that the result of one such analysis becomes the basis for the next analysis. Logically independent dating methods such as C14 and dendrochronology would not only make the dating more certain, but would in themselves be a good test of Seger's hypothesis.

The third session was concerned with the desert peripheries in the Negev and Sinai, areas hitherto peripheral in terms of the distribution of archaeologists as well as geographically. Ilan and Sabbane have produced an excellent study of EB metallurgy and its implications. While I question their bold assertion that metallurgy originated (once?) 'in Iran, Mesopotamia or Anatolia' (p. 139), this is not an issue which they pursue, and it is a testable hypothesis. Their illustration of the concentration of Chalcolithic copper-working in the south is predictable on geological grounds, but nonetheless impressive, as is their plot of the fall off of copper implements from south to north (p. 141). I find it pleasantly surprising that a class of artefacts with so few attributes as copper awls actually has such a clear-cut chronological distribution as the round/square section taxonomic distinction appears to have (p. 144). They propose metallurgy as the economic motor driving the rise of Arad, which has a broader significance in that it constitutes an implicit recognition that the economic base need not have been uniform across Canaan (p. 154). Their summary is excellent (pp. 158–9). It is refreshing to see metallurgy discussed not simply in terms of its own technical details, but also in terms of its wider implications and effects.

Kempinski's brief paper (pp. 163–8) is good. I would suggest that the Canaanites are more likely to have imported linen than grain, although the Egyptians could undoubtedly have produced grain in bulk for export more cheaply than the Canaanites. In addition, they probably imported gold, as suggested by Prag. That the Egyptians began their own expeditions to Sinai and shifted their main trade to Byblos from Dynasty III seems indisputable. Prag has, however, shown that this northern trade began in the Pre-Dynastic.

Porat's article (pp. 169–88) is wonderful. The trade pattern she reveals shows how much information a technological analysis of the pottery can reveal when its significance is taken beyond the pottery itself. The most important aspect is the fact that the revealed information is so unexpected.

Beit-Arieh's article (pp. 189–97) clearly reveals that EB settlement plans in Sinai are distinctive. The 'local types' clearly show that there were two patterns, 'a courtyard surrounded by broadrooms (i.e. the "Canaanite type")', found in the centre of the high mountain regions, and a courtyard plus room, courtyard and compartments, i.e. the 'local types' (pp. 189–90). The first type is seen as an

adaptation of the Canaanite broadroom house to desert conditions, while the other type is seen as belonging to a contemporary local non-Canaanite culture. Two questions not addressed are whether they were houses, that is, whether there was a brick (or other solid) superstructure, or whether they were solid bases or 'hard standings' for tents, and whether the two types actually represent two separate cultures, or whether they represent different functional or seasonal patterns. These would obviously be very difficult questions to answer, but not, I think, impossible ones.

Rosen's article (pp. 199–222) on the EB lithics shows the wealth of information which has been, and to a great degree still is being, lost by excavators who do not systematically collect *all* lithics. On the basis of the lithics he reveals patterns of trade, value systems, technologies, and cultural affinities and disaffinities which provide a major addition to the lines of evidence provided by pottery, architecture, etc. His statement that, 'while lithic analyses clearly support claims for the existence of trade between the North and South, they suggest that this contact should not be taken for cultural identity' (pp. 215–16), is clearly very important. His work should certainly serve as a model and a spur to others.

The fourth session concentrated on the end of the Early Bronze culture, a subject which W. G. Dever has very much made his own over the last twenty years. Dever makes a serious attempt to understand the end of the urban Early Bronze Age in Palestine (pp. 225–46). His analysis is, however, fundamentally flawed by his historical (in Popper's sense of the word) assumption of the periodic collapse of complex societies (p. 225). His notion of the nature of hypotheses in the 'hard' sciences is at odds with the views of, for example, Sir Karl Popper, in that it appears to be empiricist, in the Baconian tradition. His model (p. 229) is purely descriptive. He notes the success of his taxonomy of EB IV material in 'predicting' the type of EB IV material which would be found at a given site (p. 229, n. 9). This is not an hypothesis in a scientific sense, with explanatory powers, it is merely a case of pattern recognition, which then requires an hypothesis. Dever's hypothesis to explain this distribution pattern merely utilizes the traditional Albrightian assumptions that there was never any regional variation in Palestine, and that there were never any chronological overlaps between variant assemblages in Palestine, which premises accepted, the variant assemblages revealed in Dever's excellent pattern recognition analysis must be chronologically successive, with occupational gaps in certain regions for as long as 400 years on Dever's chronology. For the end of the Early Bronze Age the cyclical collapse of complex societies is Dever's attempt at an explanatory hypothesis. It is, however, not a testable hypothesis, as it relies on inductive reasoning, which cannot be sustained, since no matter how many examples of 'a' are observed to be 'b', this does not justify the conclusion that all 'a's are 'b', as Hume showed more than 200 years ago. Dever's view of the role of models in the social sciences is clearly instrumentalist, as exemplified by the statement that 'a social science model cannot correspond exactly to an external "real and knowable" world in the same way that a "law" can in the natural sciences' (p. 229 and section II.E.2 (p. 234)). He is, it seems, unaware that many physicists, instrumen-

talists like himself, hold that the 'laws' of physics, and many of the subatomic particles whose existence was deduced from them, are merely useful instruments which do not correspond to anything in the real world. I can only suggest that Dever should read some philosophy of science, as he clearly does not understand the nature of scientific laws and hypotheses. On a more mundane level, Dever, unlike Esse, does not mention Saghieh's study of Byblos, which shows that EB III did not end until a point well into the reign of Pepi II, at the earliest. Curiously, he dates the First Intermediate Period in Egypt *c.* 2315–1991 BC, which places the beginning in the reign of Pepi II. No justification is offered for this dating. All of this might matter little but for the manner in which Dever has chosen to put his 'systems theory' model to use. Here he has treated Cisjordan and Transjordan as an isolated unit unaffected by geopolitical events (pp. 235–8), in other words, he has failed to grasp the point made by Esse (on p. 89 of this volume), and latterly by Trigger (1989, 330–7), that urbanism, like any other adaptation is also an adaptation to the surrounding cultures, and neither begins nor ends in isolation. In section III.C.3 (pp. 238–40) Dever explicitly states his historicist view of history, in apparently unconscious echo of Popper, tracing it, like Popper, to the early Greek historiographers. I find it difficult to credit his favourable view of the work of Oswald Spengler (p. 239), quondam favourite of the Nazis. In section III.D.2 Dever claims to have aligned himself with the 'New Archaeology' (p. 241). It is difficult for me to understand how he can square this with his acceptance of the ancient paradigm of historicism, which is fundamentally opposed to everything the founders of the 'New Archaeology' stood, and stand, for. It is, perhaps, worth noting that in his theoretical sections he makes hardly any reference to Binford, and none at all to Binford's post-1962 work. This displays a complete misapprehension of the true nature of what was new in the 'new archaeology'. The new factor was paradigmatic and theoretical, the adoption of a new philosophical position derived from the work of Popper, and for some, Hempel, in the philosophy of science, and, in anthropology, Leslie White and Julian Steward, whose theories of cultural change provided a model radically different from the idealism of Boas and Albright. This has led the 'new archaeologists' to a concern with aspects of the past quite different from Dever's traditional concern with pattern recognition and chronology.

Arlene Rosen's critical assessment of previous attempts to use climatic change as a factor in the collapse of the EB II–III culture is welcome, particularly her warning against inferring 'wet' and 'dry' phases from single lines of evidence and/or too narrow a data base. Her warning of the need to get the chronology of the sediments right before linking them to the archaeology (pp. 247–8) is also welcome. Her warning that we must be aware of the effects of human activity on the pollen spectrum is an essential factor missing in earlier studies (p. 249). European prehistorians have for many years used the pollen spectrum as a means of detecting human activity (Dimbleby, 1969, 168–70). Her use of Stager's calibration of Horowitz' Hula core (p. 250) is important. This appears to show *olea* rising in the Chalcolithic at the time when trade with Egypt was also rising. It also appears to show the desiccation continuing through the renewed urbanism of Middle Bronze

up to the Byzantine era. As she points out later, this implies a technological change to adapt to the conditions. Her assessment of the effects of climatic change (pp. 253–4) is admirable. In particular her refusal to see it as a monadic explanation, although, in light of the criticism published by Tainter two years after the date when these papers were presented (1988, 54–61), her assessment of the vulnerability of the EB II–III culture to climate change may be exaggerated. I completely agree with her conclusion (p. 254) that, while it would not have been sufficient alone, taken with other factors, notably the collapse of international trade, it could have brought about the collapse of the EB II–III culture.

Kochavi's attempt (pp. 257–9) to derive the Middle Bronze I culture from the north Levantine coast (p. 259), is unimpressive.

The fifth session was concerned with environment and economy. In this section, Liphschitz, Gophna, and Lev-Yadun's paper (pp. 263–8) is impressive. Their conclusion 'that the Early Bronze urban culture was not severely affected as a result of man's impact on the natural vegetation and soil' confirms this writer's long-held belief that the erosion of the Early Bronze Age tombs at Jericho had more to do with the location of these tombs in relation to the local wadi system (at some post-EB date) than with deforestation, as Kenyon (1979, 114–17) thought.

Liphschitz' own paper (pp. 269–77) contains some surprising conclusions. While it may be true (p. 275) that olives cannot grow even with irrigation at Bab edh-Dhra and Numeira, because of the year-round high temperature, I find this less convincing in the case of Tuleilat Ghassul. It is not noticeably warmer at Deir Alla, 20 km north of Tuleilat Ghassul, than at the north end of the Dead Sea, yet Deir Alla is the site of extensive olive groves (irrigated) which not only grow and thrive but fruit abundantly. Her comment that plant remains from excavations '. . . can . . . only furnish information concerning dietary habit . . . but cannot contribute to the knowledge of the composition of vegetation or the climate conditions that prevailed in those days' (p. 275) minimizes the wealth of information on these topics and on agricultural practices (through the weeds of cultivation) which can be derived from this material. Of course we must be careful in interpreting this material, since it constitutes a sample of a sample, but her pessimism seems excessive.

Horwitz and Tchernov present an excellent paper in which they begin by correctly stressing the importance of infrastructure, and particularly the mode of production (pp. 279–80). They then go on to reject the 'laundry list' type of analysis, and seek culturally relevant information, which they clearly succeed in recovering.

Patricia Smith's paper is disappointing. She appears to believe that skeletal remains provide a means of recognizing migration, regional variation and kinship (pp. 297–8). There is no evidence in the works of her fellow physical anthropologists to suggest that this is the case. She expresses the belief that head form is heriditary, although she admits environmental effects of climate (through what arcane mechanism she does not say) (p. 298). She makes no mention of dietary adequacy or disease as major factors, nor does she note the fact that as long ago as 1910 Boas demonstrated that nutritional variability could produce different

cephalic indices in different children of the same parents (Boas, 1911, 1912; Harris 1968, 99). She suggests that different patterns of cranial deformation at Byblos and the Palestinian sites suggest there was 'little or no exchange of wives between communities in Byblos and those in Israel' (p. 302), doubtless true, but hardly surprising. She suspects an across-the-board change of population in MB II, where I suspect a major change in dietary adequacy (p. 303). She notes that stature is affected, and growth stunted, by poor health in childhood, and that, therefore, short stature in a population in one period does not necessarily reflect genetic change. She does *not* note that because nutritional deficiencies affect resistance, they directly affect stature, as well as robustness of bone structure and length/breadth ratio of the skull. These points are fundamental to the interpretation of the skeletal remains.

The sixth session was concerned with relations between Early Bronze Canaan and the rest of the Near East. Burney, in his excellent survey of the Early Trans-Caucasian culture from which the Khirbet Kerak ware is derived, sees the latter arriving in the Levant via the classic 'Volkerwanderung', and not by trade, in contrast to Dever writing in the same volume (above, p. 232, n. 12). He also rejects the hyper-diffusionism of the following article by Yakar.

Yakar, like Smith, accepts the long discredited use of the cephalic index as an indicator of 'racial' affinity (p. 341). He shows no awareness of the fact that Hennessy, in a preliminary report on his excavations at Tuleilat Ghassul, has described a continuous development of the Ghassulian culture out of the Pottery Neolithic A/B culture (Hennessy, 1982, 58; see also Kenyon, 1979, 328). He also shows a classic, unsophisticated diffusionism. His three waves' of EB I invaders have been untenable since the 1950s. He appears ignorant of Braun's work on the myth of the 'apsidal' house. He is clearly an adherent of the 'shreds and patches' view of culture common among diffusionists (p. 342). He describes the migrations of the various grey wares from Greece to Afghanistan as if the pottery travelled on its own, while shaft-tombs of different types travelled by separate routes both from each other and from the different types of pottery (pp. 347–8). Apsidal houses, too, were on the move (p. 349). He argues that these arrive due to yet another group, and seems unaware of the fact that the artefacts which typify each of his 'groups' are all part of one assemblage used by one group. This is pure fantasy, and brings to mind a vision of hordes of cultural traits wandering the world and occasionally encountering people (could the shaft tombs be carnivorous, as they are generally found with human remains inside?).

It is a relief to turn to Brandl's preliminary report on the material from Tell es-Sheikh Ahmed el Areini/Tel Gat, which is important both for itself and for its wider implications. A point not addressed due to the preliminary nature of this report, which will doubtless form an important feature of the final study, is the date of the Egyptian material associated with the final EB III occupation at the site.

Oren's report on the EB sites in north Sinai is both very important and quite surprising. The revelation of the complete Egyptian domination of this area in Dynasties 0–I is important. The interruption of this domination and traffic late in

Dynasty I is *very* surprising, especially in light of the fact that contacts between Canaan and Egypt continued as late as Dynasty V (at least), and to the end of Dynasty VI at Byblos. This supports the suggestion that the *route* of the later contacts changed and went entirely by sea.

Kroeper's report on the imported Palestinian pottery from Minet Abu Omar is very useful, representing some of the best published and dated (in Egyptian terms) early Levantine imports.

While Tutundžić's paper on Egyptian–Canaanite relations in EB I/Proto-Urban (pp. 423–32) is not the most clearly written, it does give a useful study of the chronological relations.

I cannot agree with Schulman that *the* primary task of the archaeologist is the excavation and recording of data, although this is *a* primary step in the archaeologist's task of studying human behaviour in the past. Nor do I think that the synthetic work of archaeologists is limited to the 'reconstruction of historical events and scenarios' (p. 434). In spite of his disclaimer, I get the distinct impression that in his view archaeology is a technique for supplying 'raw data' (whatever *that* may mean!) to the historian, and that the archaeologist really ought not to meddle with synthesis, for which the historian alone is properly equipped (pp. 434–5). In spite of this wholly unjustified disciplinary arrogance, his article is, on the whole, a good one. His cautious assessment of the pictorial evidence is welcome (pp. 435–41). While I can agree with most of Schulman's assessment of the written evidence, I cannot agree with his assessment that the Egyptian pottery at Arad, and, in particular, the Narmer *serekh*, means that Arad was Egyptian royal property (pp. 441–5), I simply do not think that there is sufficient Egyptian material at Arad to justify this, in contrast to Tell Erani, not to mention En Besor. His comments on the archaeological evidence (pp. 445–9) are generally good. He doesn't mention grape products (we know there were raisins at Arad, as well as wine).

To summarize, this is an excellent volume, which should be carefully studied by anyone with an interest in the Early Bronze Age in the Levant. It contains some truly outstanding articles, as well as a few quite poor ones, and is a valuable contribution to our understanding of the period in this area. Perhaps its most important aspect is that it brings together so much of the latest thinking on this period. Its different sessions, with their focus on specific problems, provide a useful guide not simply to current thinking on these topics, but to what topics are currently occupying the minds of archaeologists. On this subject, perhaps the most hopeful sign is that there is not a session devoted to questions of detailed ceramic taxonomy and seriation, nor are there any papers devoted to the precise taxonomic designation of specific strata at specific sites, in the traditional Albrightian manner. Not that such work is unimportant, on the contrary, it is fundamental to all other forms of cultural analysis. The problem lies in the fact that traditional Levantine and Biblical archaeology regarded this analysis as the end toward which archaeology should aim. In the present writer's view, this constitutes what Harris calls 'quitting early' (1968, 304–8). What is greatly encouraging in this volume is the emergence within Levantine archaeology of a systemic view of culture, and of

cultural change, in contrast to the Boasian, eclectic, idealist approach of previous generations. Also hopeful is the extent to which the traditional isolation of Levantine archaeology, especially among those who consider themselves 'Biblical archaeologists', has begun to break down, with citations of theoretical and other works from outside Levantine archaeology, and even from outside archaeology generally. In this, Levantine archaeologists are returning to what was best in the work of W. F. Albright; the broad-ranging search for the truth about the past, unlimited by regional or disciplinary boundaries.

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This book should prove to be a most useful handbook both for teachers and students of ancient Jewish art and archaeology. Its didactic aim is tangible in the thorough treatment of all aspects of Jewish art, as well as in the clear layout of the text divided up like lecture notes into sections and sub-sections, with points of discussion emphasized by numbering and alphabetical itemizing.

Jewish art is defined in the Introduction as 'an art that was created specifically for the Jewish community' (p. 1). The author adds that 'Jewish art found expression in various aspects of Jewish life: secular, sacred and funerary', all of which are fully discussed in the book.

A brief historical background sets the scene. The book then falls into two parts. Part I surveys in five chapters the art and archaeology of the Second Temple period (second century BC–first century AD) and concludes with a sixth chapter covering the Bar Kokhba period (AD 132–5). Part II concentrates on the development of the synagogue in Late Antiquity, between the late second and the seventh centuries AD.

Rachel Hachlili's treatment of the Second Temple period is comprehensive. Chapter One is devoted to Architecture and deals in turn with the Jericho Hasmonean Palace and the monumental projects undertaken during Herod's reign (37–4 BC): the Temple Mount in Jerusalem, the palace in Jerusalem in the area of the present-day Citadel, the palace-fortresses of Masada and Herodium, Lower Herodium, the three winter palaces at Jericho, the fortresses of Cypros, Hyrcania, Alexandrium, Machaerus and Doq in the Judaean Desert, the Antonia Fortress and the Citadel in Jerusalem as well as the City Walls, and lastly Caesarea Maritima and its harbour. The residential houses of the Herodian period uncovered during the excavations of the Upper City and the Temple Mount area in Jerusalem are also described. The author reviews the Palace of Hilkiya in the Hebron district; Herod's tomb which may be possibly identified with a circular structure opposite the Damascus Gate in Jerusalem; Bath Houses in Masada, Herodium, Jericho, Cypros, Hilkiya and Machaerus; ritual baths (Hebrew *miqveh*, *miqvaoth*); the hippodromes of Jericho and Caesarea; the theatre at Caesarea; the stadium of Samaria-Sebaste; colonnaded streets at Samaria, Antipatris and Caesarea, and lastly aqueducts. The section on the Temple in Jerusalem (pp. 17–32) is particularly informative, since Hachlili does not limit herself to a presentation of the architectural complex. The Temple comes alive as she recalls the liturgy and describes the pilgrimages on the feasts of Passover, Pentecost and Tabernacles, the Temple offices (Priests, High Priest, Prefect, Levites and Israelites) and the Temple Treasury.

Chapter Two analyses Jewish Art of the Second Temple period, which combined Hellenistic-Roman motifs with an Oriental style characterized by repetitive patterns, symmetrical stylization, deep carving and *horror vacui*. This art was aniconic

as the result of strict adherence to the Biblical prohibition of 'no graven image' (*Ex.* 20:4; *Deut.* 4:16 and 27:15). Hachlili traces these features on floor pavements in mosaic and *opus sectile*, on wall paintings, on stucco and in stone carving. She proves the existence of Jewish stonemasons. She discusses in detail the repertoire of motifs consisting of plants, geometric patterns, architectural decorative patterns such as imitation marble, fauna, the Temple Vessels (the *Menorah* and the Table) and motifs on Jewish coins.

Chapter Three examines Second Temple period synagogues, those discovered at Masada, Herodium, Gamla, Migdal, Capernaum and Chorazin, and those mentioned at Tiberias, Dor and Caesarea by Flavius Josephus, at Capernaum by the New Testament, and in Jerusalem by Rabbinical literature.

The study of funerary customs and art in Chapter Four is based on evidence from the extensive necropolis to the north, east and south of Jerusalem, and from a necropolis outside Jericho, of which 50 tombs were excavated and 75 robbed tombs were surveyed by Hachlili herself. She traces the development from primary burials in wooden coffins placed in rock-cut *loculi* tombs (Hebrew *kokh*, *kokhim*) from the mid-first century BC until AD 10, to secondary burials in ossuaries also in *loculi* between AD 10 and AD 68, which continued sporadically until the third century. She contrasts these burial customs, which emphasize the importance of the family, with those of the first-century AD Essenes who practised primary burial in individual graves, as at Qumran and ʿEn el-Guweir. By the second century, burial had become a commercialized public enterprise, directed by the burial society (*Hevrah Kadisha*), which sold burial places to any purchaser. Hence the decorated marble or clay sarcophagi in the catacombs of Beth She'arim, which contained the primary burials of Jews from the Land of Israel and from the third century the reinterred remains of Diaspora Jews. It is unfortunate that Hachlili does not follow up her statement that 'the later Jewish rituals of Late Antiquity . . . contain only traces of the Second Temple period' (p. 101), with an analysis of the funerary practices of the Jews of the Talmudic period.

Chapter Five is an eight-page summary of the daily life and literary output of the Essene community of Qumran between 150 BC and AD 68.

Part I closes with the Bar Kokhba period (Chapter Six). Information on the Bar Kokhba War (AD 132–5) is based on the documents found in the Judaean Desert caves of Murabba'at and Nahal Hever, on the results of excavations of caves which were used as places of refuge from the Roman army and of subterranean hiding places in the Judaean foothills, as well as on Bar Kokhba coins.

The concept of the synagogue revolutionized Jewish worship. Unlike the Temple in Jerusalem, the synagogue was a place of worship not only for the privileged few – the priests – but for an entire participating community; each synagogue had a Torah shrine which contained the Ark housing the Scrolls; lastly, the synagaogue served as a social as well as a religious assembly house.

Part II of the book is entirely devoted to the synagogue. Chapter Seven deals with the synagogue as a concept and as a social phenomenon. It describes the location of the synagogue in Jewish settlements, traces its origin and history from

mid-third century BC inscriptions which mention Egyptian synagogues, compares its function to that of the Jerusalem Temple, and relates it to the community which administered it. The four chapters which follow, approach the synagogue from a strictly art-historical point of view. Every possible element of the synagogue as a building is considered under the headings of architecture and decoration, iconography and symbolism, motifs of Jewish art, and composition and style both of mosaic pavements and of relief and sculpture. This exhaustive study is aptly supported by plans of all the synagogues of the Land of Israel reduced to the same scale (pp. 144–7), and by tables listing their dates and characteristic features which, when juxtaposed, enable comparisons to be made at a glance. Moreover, typological charts illustrate the numerous forms of *menoroth* (pp. 242–6) and the variety of ritual objects depicted on mosaic pavements (pp. 258–61). Hachlili does well to offer definitions of the Torah shrine, the Aedicula, the Ark of the Scrolls and the *bema* (p. 167) in order to solve the current confusion in terminology; the Glossary on p. 417 also contributes to this attempt at clarification.

In the final six chapters Hachlili explores the origins and sources of Late Antique Jewish art, compares it to Christian art, outlines its distinguishing features, discusses artists, craftsmen, workshops and pattern books, and, rising above controversies such as that concerning the date of the Galilean synagogues, offers a chronology of synagogues based on archaeological, epigraphic and art-historical evidence.

In dating the Capernaum synagogue to the end of the fourth and fifth centuries (p. 397), Hachlili takes a firm stance against Avi-Yonah. In general, however, she tends to accept his ideas; often rightly so, as when she develops his analysis of the Oriental elements in Jewish art, but sometimes against her better judgment, as when she enshrines in theory Avi-Yonah's throw-away line that the humorous inclination of Jewish mosaicists evidenced by a hen followed by her chicks on the mosaic pavement of the Beth'Alpha synagogue and by a hen laying an egg at Ma'on, was due 'to the agricultural character of the Jewish community' (p. 370).

Hachlili is healthily logical, for instance when she demonstrates the lack of validity of the theory expounded by art historians, that biblical scenes appearing in Jewish art originated in biblical manuscripts illuminated by Alexandrian Jews in imitation of the rolls of classical antiquity (p. 299). Her realism could be misconstrued occasionally as simplism, as when she flatly states that Kyrios Leontis probably chose the Nilotic scene of a crocodile attacking a cow to be depicted on the pavement of his house at Bet She'an 'simply because, among all the patterns in the pattern book through which he looked, this scene seemed the most attractive and appropriate to him' (p. 301). She also glosses over complex problems, such as the orientation of synagogues and churches, which is not as cut-and-dried as she makes it appear. Wilkinson (1984) has shown that the rules for the direction of prayer given in the *Jerusalem Talmud* based on I *Kings* 8:30, 46–9 were not always followed; as for the orientation of churches towards the rising sun, which was intended as an act of prayer to the sun's Creator, its misinterpretation as idolatry impelled even Pope Leo I in fifth-century Rome to complain about it.

The comparison between Jewish and Christian art (Chapter Thirteen) is necessarily sketchy, for the subject on its own would require an entire volume. Hachlili's encyclopaedic and profound understanding of Jewish art is not matched by her knowledge of Christian art, which reveals lacunae. For instance, the Jonah story was depicted on a Christian mosaic pavement not only at fourth-century Aquileia, but in the Holy Land itself in the Byzantine church of Mahatt el Urdi at Bet Guvrin (Baramki, 1972; Ovadiah 1974).

Hachlili adopts, adapts to the Jewish art of the Land of Israel, and develops in a masterly way the present reviewer's hypotheses concerning mosaicists, workshops and especially pattern books. Hachlili's attribution of the mosaic pavements of synagogue B, of the House of Kyrios Leontis and of Room L of the Monastery of Lady Mary at Bet She'an to a single artist or workshop is particularly interesting since it proves further that the same mosaicists executed pavements both for Jewish and Christian clients; this can also be looked upon as a yardstick for the cultural exchanges of the two communities. It is unfortunate that Hachlili does not expound some of her own theories. The influence of Midrashic literature on Jewish imagery is briefly and insufficiently dealt with (pp. 344, 346). Although she links the prominence of the motifs of the lion, eagle and bull both in sculpture and on mosaics to *Midrash Rabba, Exodus* 23:13 (where the fourth exalted being is man), surprisingly enough she does not trace this back to Ezekiel's vision (1:1–14). Man, lion, ox and eagle reappeared in the *Apocalypse of St John* 4:6–8. These were recognized as symbols of the four Evangelists very early in the history of the Church, and were found frequently in the iconography of the Christian West, notably on the fourth-century apse mosaic of Sta Pudenziana in Rome, and on the wall mosaic of the Mausoleum of Galla Placidia in Ravenna (*c.* 440). In the East, their earliest depiction as a tetramorph is on the underside of the lintel of the Evangelists' Door in the fifth-century Basilica of the Monastery of Alahan in Isauria, Turkey (Gough, 1985 ed., 88–90). Here, as in other cases, Church and Synagogue shared to a certain extent the same iconographical vocabulary.

Hachlili explains the depiction of biblical scenes and religious symbols on the mosaic floors of synagogues by the fascinating concept of neutralization of idolatry. Stepping on an image removed its sacred quality and thus neutralized the 'pernicious influence of idolatry' (p. 379). This is an avenue of research to be pursued further, particularly by relating art history to social anthropology.

The final chapter of the book contrasts the art of the Second Temple period which embodied a national spirit, with Late Antique Jewish art which was an expression of Jewish communal and social life. It traces the filiation between the art of the two periods and underlines the innovations of Late Antique Jewish art.

The bibliography is not always up to date. Hachlili seems to be unaware of the excavations and restoration work undertaken since 1976 by a French team at the Tobiad palatial estate of 'Iraq el Amir, which has included a thorough study of the monument and its environs (Will, 1982; Dentzer, Villeneuve and Larché, 1982). Nor does she mention the identification by S. Gibson (1983) of a unique industry

for making soft limestone vessels at Ḥizma, northeast of Jerusalem, dated towards the end of the Second Temple period.

The book is abundantly illustrated by black-and-white photographs and line drawings, but their numbering is somewhat puzzling. The consecutive numbering of figures within each chapter, starting again with Fig. 1 in the following chapter, creates confusion. The chart with forms of Menoroth covers five pages (pp. 242–6), of which the first four are dubbed 5a and the fifth inexplicably 5b. In Chapter Eight, there are two Figs 32, and Figs 33 and 34 have been interchanged. Each photograph rather than each plate bears a separate number, but one fails to understand why occasionally photographs are given sub-numbers, such as 97a, 97b and 97c. The Harvard system of bibliographical referencing is skilfully used. The avoidance of any notes, however, results in multiple brackets which occasionally spoil the style of this otherwise eminently readable book, which brings much credit to its author.

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Isaac, B., *The Limits of Empire. The Roman Army in the East.* Clarendon Press, Oxford, 1990. Pp. 492, 13 figs and 5 maps.

This book deals with the substance and character of the military strength in the East exercised by Rome and its successor Byzantium. The Roman and Byzantine 'East' extended from as far as the Caucasian Mountains down to the deserts of Sinai and Northern Arabia. How was it possible for Rome and Byzantium to govern such a large, fragmented and variegated region such as this during the 700 years of its existence? Was there any military and state 'overall strategy' that the rulers of Rome and Byzantium adhered to when they carried out their conquests and appointed people to govern over a bewildering array of countries and cultures?

To answer this central question, the author surveyed a wide variety of subjects, including (1) the relations between Rome/Byzantium and Persia during the Parthian and Sassanid Dynasties. These people were the main force which withstood Rome's might in the East; (2) the whole subject of the nomads along the frontiers of the Empire: (3) the overall significance of the *Limes* fortifications; (4) the nature of military and civilian relations in conquered provinces; (5) the significance of setting up Roman colonies in both the West and East; (6) the character of military construction and 'fort' structures; (7) the subject of road construction and milestones which were placed along their length; (8) the character of urbanization and the extent of imperial interference in urban public construction, and a whole gamut of other subjects which relate to the long-term presence of Rome in the East.

Isaac's book is not just another discussion of the technical sides of the Roman war machine, it is an essay which tries to answer fundamental questions about the nature of Roman rule in the East. It also deals with the socio-political implications of this rule by examining the subject of Roman military presence within conquered populations. These were not always willing to accept the Romans with 'open arms' as was the case in some of the western provinces.

The author, who is a distinguished historian and classical epigraphist, provides an analysis of the primary sources for the periods but is very cautious about the significance of the archaeological evidence which he feels can be subject to so many different interpretations. He adopts such a critical stance that one sometimes feels that he is unwilling to confirm any of the historical-military notions which are currently accepted by those scholars dealing with the Roman army in the East. Every subject is re-examined through an analysis of written sources and epigraphical finds. The English reader is also provided with the translation and analysis of various texts derived from the Talmud and Midrash; in this, Isaac received the help of Professor Aharon Oppenheimer of the University of Tel Aviv.

Isaac does not accept the view which is currently prevailing among scholars dealing with the Roman Army in the East, that the edges of the Empire were clearly demarcated by defensive borders and 'red lines', and that the crossing of these frontiers was the cause of the wars between the Roman and Persian superpowers. Instead, it is suggested that Rome did not possess a static defensive programme with frontiers and border zones, and that, on many occasions, military actions were the result of personal motives, the desire for public praise and the need for booty for the economic gain of the rulers and their retainers. The suggestion that Rome did not possess any overall strategy with defensive lines and clearly defined frontiers, means that the construction of military forts must now be regarded as an *ad hoc* arrangement which was meant to solve local problems arising in the various provinces.

The author does not hesitate in making a comparison between the processes behind the expansion of the Roman Empire with European imperialism of the 18th–19th centuries, especially in regard to the belief, held by so many white people, in the necessity of carrying 'progress and culture' to the barbarians of the East who did not ask for it in the first place. The Roman control of conquered

territory entailed vast expenditure and was a substantial economic burden. It resulted in the Roman conquerors imposing heavy taxes on the indigenous populations and these were frequently collected with force and brutality, echoes of which may be found in the Hebrew Talmudic literature. Not infrequently people were dispossessed of their land and the men were forced to serve in the Roman army. These were some of the causes for the rebellions and continued unrest in the different provinces.

The author tries to get down to the roots of the state policy adhered to by the Persians in their military conflict with Rome, and reaches some interesting conclusions. He believes that the Parthians and their successors the Sassanids, did not have a policy of territorial conquest in the lands west of the Euphrates and that all their expeditions were undertaken to gain booty and to harm Roman possessions. Support for this suggestion may in fact be found in Josephus' writings, where it is claimed that Agrippa II warned the Jews that the Parthians would not interfere and give them help during their revolt against the Romans, and so it came about. At the same time, the Romans had territorial ambitions of expanding eastwards to the Euphrates and on numerous occasions tried to hold on to Parthian and Armenian territories.

This led Isaac to the main conclusion that the Roman army in the East was used for attack and conquest, and was not there to protect a well-defined frontier marked up on some imaginary map back in the Roman Imperial War Room.

Another interesting subject dealt with in some detail by Isaac, is the reason why colonies of Roman veterans were established in the East. The function of such colonies has frequently been discussed in the scholarly literature, and they have sometimes been regarded as military bases which were used to oppress rebellious populations. Isaac believes that the founding of colonies in Beirut and later also at Baalbek in the *Beqa* of the Lebanon, was not so much against the rebellious Ituraeans, who were dealt with by the main Roman army itself, but so that logistical and cultural bases should exist for the Roman army whilst it was in action. It appears that the colonies in Judaea had a similar function and they should now not be regarded as straightforward legionary bases. In this connection, Isaac points out that King Herod did not succeed in capturing *Trachonitis* (pp. 66–7) and that it was left to the Roman army, in the 2nd century, to capture the region by building roads and by constructing forts.

Isaac's assertion, that the bandit-like behaviour of the people of *Trachonitis* must be seen against a socio-economic background rather than a political one, will be of interest to those dealing with the subject who have previously assumed that this banditry was the military-political expression of small groups of people carried out against the might of Rome.

An interesting chapter is dedicated to the road network in Judaea (pp. 108–13) marked with milestones. The author reaches the conclusion that this network was built for Roman military and administrative purposes only, and that the milestones were only set up in the settled areas between the towns and bases used by the

military. Milestones have not been found in either the Negev, Upper Galilee, nor in the deserts of Samaria and Judaea.

Isaac's book includes many other interesting topics and these are all presented with original analysis and with challenging new theories many of which are contrary to accepted historical opinion. Although Isaac gets rid of many 'holy cows', it is also clear that not all of his controversial opinions will be accepted by scholars. However, any future study of the Roman and Byzantine army in the East will now have to take account of the new ideas put forward by Isaac, all of which are well argued and presented with great learning.

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Bartlett, J. R., *Edom and the Edomites* (Journal of the Study of the Old Testament Supplement Series 77). JSOT Press, in association with the Palestine Exploration Fund, Sheffield, 1989. Pp. 300. Price £14.50.

As the title implies, the book under review summarizes in a concise form the present state of knowledge on Edom and the Edomites, culled from biblical, external and archaeological sources. It also represents an abridged version of the research conducted by the author on this subject over an extended period of time. John R. Bartlett has written numerous articles on the Edomites and on various aspects of their history (a complete listing may be found at the end of the book) and he has a sound reputation as an important scholar in this field.

Bartlett has included in this volume practically the entire gamut of the known written sources relating to Edom and the Edomites, as well as everything relating to the history of their research. Topics discussed include the land, its topography, settlements and population. There is also a history of the people and the country, presented chronologically, from the end of the 2nd millennium BC (according to Egyptian and biblical sources), continuing with the history of the Edomite kingdom, from its beginning to its end, finishing off with the history of Edom in the Persian period. Separate chapters are devoted to Edom and Judah and the extreme animosity which existed between the two kingdoms (which originated in this period and continued, according to the sources, until very much later: 'wicked Edom'). He has also included chapters on their religion and inscriptions. A very useful and detailed bibliography is added to the end of the book.

In recent years the study of this people has been advanced considerably mainly due to the excavations carried out in Edom itself by the well-known British archaeologist, Crystal M. Bennett, at Umm el Biyara, which yielded the seal of an Edomite king with his full title: Kosgabar, King of Edom, and at the sites of Tawilan and Buseirah. Of outstanding importance for the study of this people, is the evidence that from as early as the end of the First Temple period, large

numbers of Edomites were crossing over and settling on the western side of the Jordan, in the Negev, in the Arava and especially in the Beersheba Valley. This settlement process was the first stage of their subsequent expansion into the southern Judaean hills (*Idumaea*).

Edomite finds have now been uncovered at more than a dozen sites in these areas, beginning with the excavations of Nelson Glueck at Tell Kheleifah, and continuing with those of Y. Aharoni at Arad, M. Kochavi at Tel Malḥata, A. Biran at Aroer, A. Kempinski and V. Fritz at Tel Masos, Y. Beit Arye at Qitmit, and R. Cohen at Kadesh Barnea, Tel ʿIra and Kh. ʿUza, to mention only the principal sites, and now also in the Western Negev at Tel Sera and Tel Haror.

The history of the Edomites, as it is gradually unfolded before our eyes, is without doubt a gripping saga. Originally, to all intents and purposes, they were a Western Semitic people which underwent a certain degree of 'Arabization' in the Persian period – as was pointed out long ago by M. Avi-Yonah and J. Naveh. Later, in the Hellenistic period, at the time of the Hasmonaeans, those who were occupying the southeast border areas also became Judaized.

However, despite a considerable advance in our knowledge, there is still very little we know regarding the early monarchical period. Solid archaeological evidence is essentially lacking for this entire period of time (the 10th–9th centuries and most of the 8th century BC) and the only recourse we have is to written documents as our primary source of information.

The present state of the evidence, however, is sufficient to enable us to determine the general character of the Edomite material culture, their writing, language, architecture, pottery, glyptics, cultic vessels and religion. We can now add complete chapters – hitherto unknown – to the traditional written sources on Edomite history.

Since most of the recent findings have been included in summary form in Bartlett's book, it will undoubtedly become an important reference guide for those interested in Near Eastern history.

While this volume is worthy of much praise, it does regrettably have two shortcomings:

1. First of all, the title of the book, *Edom and the Edomites*, would suggest that the entire history of this people was being dealt with and not just the period of the author's choice. Their history continued for centuries after the Persian period, throughout the Hellenistic period, which was a time of great prosperity in Idumaea, and up to the days of King Herod, who was an Edomite himself, and the time of the Great Jewish Revolt. We should note that a book on this very period has recently been published in Hebrew by Aryeh Kasher (*Edom, Arabia and Israel: Relations Between the Jews in Eretz Israel with the Nations of the Frontier and the Desert During the Hellenistic and Roman Era 332 B.C.E.–70 C.E.*, Jerusalem, 1988). How can Edom and the Edomites be properly studied if this last chapter of their history is excluded?

2. Secondly, the author does not take into account the detailed results which have emerged following archaeological research in Israel. While he does mention

the results of those studies which have been published in English, these are usually only brief resumes of the original reports. Unfortunately, a large proportion of the latest material has been published in full only in Hebrew, and some of it has not been published at all.

It seems to me that the author of a work of this kind must spend some time at the scene of the events – in this case, Jordan and Israel – so that he can appreciate at first hand the results of recent surveys and excavations. The absence of such an approach is clearly evident here.

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Schwartz, D. R., *Agrippa I. The Last King of Judaea*. Texte und Studien zum Antiken Judentum, ed. by M. Hengel and P. Shaefer, 23. Tubingen: J. C. B. Mohr, 1990. Pp. 233. Price DM 138.

Agrippa, the grandson of Herod the Great, was the last monarch of Judaea and as such presided over what was effectively the last Jewish state in Palestine until modern times. His reign coincided with the formative period of Christianity, spanning the interval between the ministry of Jesus and the missionary journeys of Paul. That period also witnessed the last flowering of priestly Sadducean influence and authority. Therefore, it is all the more surprising that this volume, in its original Hebrew edition, is the first detailed study of the life and times of Agrippa.

Schwartz's study does not disappoint. Indeed, it is a paragon of historical biography, being at all times lucid, concise and yet thorough in its treatment. The work is divided into six chapters. The first of these considers the literary sources on Agrippa and the others focus on different periods of his life. Each chapter is subdivided into sections covering particular topics, such as 'Diasporan Jewry in 41 C.E.' and 'Agrippa and the Gentile World'. After discussing and analysing the evidence on each main topic, the author rounds it off with a useful summary. There are also eleven appendices, each one a research study in its own right. These deal with supplementary topics, and include a paper by R. Brody of the Hebrew University which offers an ingenious explanation of the bynames Caiaphas (Hebrew–Aramaic) and Cantheras (Greek–Roman) which attached to the same High Priest.

The career of Agrippa forms the core of this study. Brought up in Rome at the imperial court, Agrippa found favour with the unpredictable Caius Caligula and was appointed by him as vassal king of Judaea. Coming after thirty or so unhappy years of rule under Roman governors, the accession of Agrippa, a scion of the Hasmonaean house, raised Jewish expectations for the restoration of their political independence. His early death after barely three years on the throne dashed these hopes and, according to Schwartz, brought nearer the catastrophic conflict with Rome of AD 66–73. The author's verdict is that Agrippa failed to make any constructive contribution to the course of Jewish history.

Far from being the loyal Jew depicted by Josephus (*AJ* xix 331) and perpetuated by modern scholars, Agrippa set his role as 'Rome's most important man in the East' (p. 143), as Schwartz convincingly argues. What is clear is that our subject adopted many of the trappings of a Roman prince, to the extent that he appears to have cultivated a ruler cult, on the model of the Julio–Claudian emperors (p. 133). In this respect, Agrippa was true to the ideals of his grandfather, Herod, who sought to emulate both his Roman patrons, Augustus and Marcus Agrippa, and the illustrious Hellenistic monarchs of former times.

So what remains of the popular notion that Agrippa was beloved of the rabbis for his piety and ritual purity? Schwartz seeks to demonstrate that this view is wholly unjustified and has arisen through misunderstandings and distortions of the source material. For a start, the rabbinic literature is unclear on matters of substance. The favourable references to 'Agrippa' can equally well apply to the second king of that name as to the first, and in some cases the traditions seem to fit Agrippa II far better. This issue, like many of the others addressed in this study, will necessarily remain controversial, due to the paucity of the evidence, notwithstanding the quality of Schwartz's arguments.

The author certainly fulfils his desire to escape the charge once levelled by the late Arnaldo Momigliano against another scholar 'that he lacked the courage to be wrong, which is, at times, also the courage to be right.' Nonetheless, he occasionally draws back from casting an opinion on a contentious issue as, for example, on the location of the 'Third Wall' of Jerusalem (pp. 140–3). On many of the topics dealt with in this book, Schwartz brings clarity rather than original ideas. However, in one area in particular, he makes a totally fresh contribution. This concerns the sources used by Josephus for his accounts of Agrippa. Schwartz identifies five separate sources, including two or three Roman ones. Another, which supplied Josephus with most of his information on Agrippa's career, is considered to have originated in Jewish circles in Italy. Schwartz deduces that it is a romanticized biography, based on the stories of Joseph and Esther. This aspect highlights the wealth of Greek, Roman and Jewish sources consulted by Josephus, which in turn draws attention to his amazingly broad 'secular' education which gave him a grasp of Greek and also, apparently, of Latin literature (cf. M. Hengel, *The 'Hellenization' of Judaea in the First Century after Christ*, London and Philadelphia, 1989, 23–4).

In an effort to assist readers who have no working knowledge of the Hebrew language, Schwartz has substituted his original Hebrew references with comparable ones in the major European languages, wherever possible. This practice has been carried out to such an excess that I have not managed to locate a bibliographic reference to the Hebrew original of this work!

To conclude, this is a stimulating book about a fascinating subject that is a 'must' for both scholars and laymen, with an interest in the history of the Second Temple period and the origins of Christianity.

David M. Jacobson

Reinhard Pummer, *The Samaritans* (Iconography of Religions XXIII, 5), Leiden, Brill, 1987, 46 pages, 48 plates.

In my review of *The Samaritans*, edited by A. D. Crown (Tübingen, 1989) published in *BAIAS* 8, 1988–9, I lamented the fact that the text contained no illustrations. Pummer's slim book could well serve as a companion volume to Crown's, since it is almost entirely composed of illustrations and an accompanying catalogue describing them. However, Pummer also supplies an introduction of 25 pages which is a very useful pocket summary of Samaritan history, sects, writings, sacred places (including synagogues), rites and feasts.

One point to note is that Pummer's description of archaeological remains on Mount Gerizim is now out of date, as he himself feared it soon would be. Pummer uses R. Bull's conclusions after excavations were conducted on Tell er-Râs, the lower peak, between 1964 and 1968. Bull uncovered remains which he identified as coming from two periods. A structure labelled by Bull 'Building A' was comprised of a platform of unhewn stone and was dated to the 3rd century BC. Another structure, 'Building B', was identified as a Roman temple and dated to the 2nd to 3rd centuries AD. It appears more likely that there was a first temple here built on a stone platform during the reign of the emperor Antoninus Pius (AD 138–161) which was either completed or renovated by Caracalla (AD 198–217). It is now thought that the Samaritan temple proper did stand on the summit of Mount Gerizim and not, as Bull and others have proposed, on Tell er-Râs. See Y. Magen, 'A Fortified City from the Hellenistic Period on Mount Gerizim', *Qadmoniot* 19, 1986, pp. 91–101 (Hebrew); *idem*, 'Mount Gerizim: a Temple City', *Qadmoniot* 23, 1990, pp. 70–96 (Hebrew).

Among the many plates which may be of interest to *BAIAS* readers, noteworthy are the following:

Plate I has a comparison of various scripts from Palaeo-Hebrew (beginning of the 6th century BC) to modern Samaritan writing.

The inscription of Beit al-Mā, presently on show in the Rockefeller Museum in Jerusalem, is shown in Plate II(a). The inscription shows an abbreviated version of the ten commandments according to the Samaritan text of the Pentateuch. Like others of a similar type found from Roman to Arab times, it corresponds to the Jewish *mezuzot*. Plate II(b) shows the Ramat Aviv mosaic inscription, found in the grounds of the Ha-aretz Museum in 1975. It is still uncertain whether or not it comes from a Samaritan synagogue or from a church built by Samaritan converts to Christianity.

On Plate X there is an aerial view of Mount Gerizim showing the main peak and Tell er-Ras. Plate XI(b) shows an aerial view of the visible remains on the main peak, namely the foundations of Zeno's octagonal church with Justinian's fortifications (labelled erroneously as 'Justinian's church'). Plate XI(a) has a clear picture of two city coins from Flavia Neapolis struck under the reign of Caracalla, probably showing the temple of Tell er-Ras and the steps leading up to it, with an adjoining

altar. It is doubtful that the altar is to be identified with a Samaritan synagogue on the main peak, as Pummer suggests. An altar would have been an inappropriate image for this and, at any rate, it is depicted lower down the slope of the hill. The view of the site on the coins is precisely the view from the main peak, which Pummer shows in Plate XII(a). Plate XII(b) is a drawing of a cross-section showing Bull's 'Building A' and 'Building B'. Plate XIII(a) depicts the remains of a huge flight of steps leading up to the temple, and XIII(b) shows surface fragments.

Interestingly, on Plate XXI(c) Pummer shows us an ancient Samaritan *mikveh*; present-day Samaritans do not use *mikva'ot*.

Other illustrations are of particular interest to those whose concern is the Samaritans of today: their synagogues and implements, their dress and practices. Especially interesting are the plates showing the construction of a *sukkah* decorated ceiling and the sacrifice of the lamb for Passover.

Joan E. Taylor

James, P. J., Thorpe, I. J., Kokkinos, N., Frankish, J. A., *Studies in Ancient Chronology, volume 1, 1987; Bronze to Iron Age Chronology in the Old World: Time for a Reassessment?*. Pp. 143, 4 maps. Price £8.00 (UK) or £11.50 (Israel, airmail), obtainable from Studies in Ancient Chronology, c/o Institute of Archaeology, Gordon Square, London, WC1 0PY.

This is a difficult publication to review owing to its very wide scope geographically and its highly controversial aim – a substantial lowering of dates for the end of the Late Bronze Age. The present reviewer's qualifications in this respect include familiarity, and sympathy, with attempts to shorten chronology (cf. Watkins in *PEQ* 1989, p. 79). The authors admit the brevity of their 'discussion paper' and express the hope that it will initiate a broader inquiry. Chapters 2 to 9 which cover the Mediterranean and Near East, deal with major anomalies in chronology which take the form of 'dark ages' apparently in contradiction to the local archaeological evidence and whose cause can be traced back to dependence on Egyptian chronology. Chapter 10 concentrates on Egypt as the root cause of these over-extended dark ages. The Third Intermediate Period appears to be too long due to the dependence in Egypt on Sothic Dating; an unproven theory rather than a suitable basis for Old World chronology. Chapters 11 and 12 consider Mesopotamian chronology. The archaeology of Israel is considered briefly in Chapter 9. Throughout the paper frequent use is made of quotations from recognized authorities, and the authors themselves are, or were, post graduates in archaeology or ancient history at University College, London and Oxford.

Considering the chapters in more detail: Chapter 1 mentions the chronological 'fault-line' between carbon-dated NW Europe and Egyptologically-dated SE

Europe and the Mediterranean. Chapter 2 considers Italy where three centuries separate the end of the LB Apennine culture (linked to Mycenae) from the Villanovan (predecessor of the Etruscan). The gap is supposedly filled by Sub-Apennine and Proto-Villanovan periods which are further stretched by evidence that they were partly contemporary. A similar gap occurs in Sicily where the Pantalica culture is made to cover five centuries of cemeteries and little in the way of settlements. In Malta there is a long, stretched Borg in-Nadur phase III, and in Sardinia a stretched Middle Nuraghic.

Chapter 3 discusses the 'Balkan Complex' pottery group which has been pulled back and forth in a void between the end of Mycenaean LB and the Greek Archaic Period. Likewise Greece itself (Chapter 4) has suffered from this pulling of artifacts, to the one end or the other, of the Dark Age. The items considered, which appear on either side of this void, are ivory working, pottery motifs, bronze tripods, and stone architecture. Various sites are used to illustrate the unsatisfactory nature of the timescales of the Sub-Mycenaean and Proto-Geometric periods, sometimes overlapping with each other or the neighbouring periods, sometimes being affected by large regional variations, often sites with periods totally missing, and never a site with a full stratigraphic sequence of LH IIIC, Sub-Myc., Proto-Geom., and Geometric. Nineteenth and early twentieth century scholars never entertained the idea of such a long sequence; the links with Egypt forced it upon them. Chapter 5 looks at the basis for the chronology of the Greek Geometric Period, which depends on links with Levantine sites and the historical foundation dates for the western colonies (which have always been questionable). Evidence from Tell Abu Hawam, Megiddo, Samaria and Hama is reviewed and shown to depend on small numbers of ceramic fragments, often from confused loci. Tell Abu Hawam III's destruction has been variously dated from 925 BC to the mid 8th century BC, and Hama's Late Geometric sherds were unstratified. The Levantine strata themselves are down-dated in Chapter 9.

Chapter 6 on Troy and Central Anatolia, looks at the startling degree of continuity between Troy VIIb2 and VIII, conventionally separated by several centuries. At Boghazkoy *c.* 8th century Phrygian material directly overlays the last Imperial Hittite stratum. At Gordion the Hittite and Phrygian remains actually coexist. Chapter 7 moves on to the Neo-Hittite art and architecture of SE Anatolia and N Syria. The similarity of styles between the Hittite Empire and its five century 'afterglow' result in some highly contradictory views by the experts. At Malatya the stone lions are supposed by some to be Empire art reused in a Neo-Hittite gate, and the pottery of the Neo-Hittite levels is very close to that of the Empire. At Carchemish, sub-capital of the Empire period, the Neo-Hittite city contains many 'heirlooms' of the earlier period.

Cyprus (Chapter 8) suffers the usual dark age. Cypriot and Palestinian archaeologists have different chronologies for the same pottery. Cypriot Black-on-Red ware is dated from *c.* 850 BC in Cyprus but from *c.* 1050 BC in Palestine. The evidence from Tel Mevorakh VII, supposedly supporting the higher chronology, actually leads to a 400 year gap following stratum VII.

Chapter 9 (ten pages) is the one on Palestine. Stern is quoted as saying that the Persian Period is one of the most obscure eras in Palestine despite its late date. The authors attribute the lack of Persian Period remains to the pottery and buildings being misdated backwards into the seventh century. Hence, for example, the surprisingly early (*c.* 630 BC) East Greek pottery (normally dated late 6th–5th century BC) at Meshad Hashavyahu. Note that at the 1990 International Congress on Biblical Archaeology in Jerusalem, Barkay also proposed lowering the terminal date of Iron IIC (called Iron III by James *et al.*), and that Stern has recently proposed a substantial down-dating of the end of Megiddo III in *IEJ* 40, p. 28. The debate over Lachish III's destruction (701 or 597 BC) is discussed. The authors prefer a low date for reasons of pottery, stamped jar handles and the lack of any Assyrian claim to have actually destroyed the city. 'Assyrian Palace Ware' has been found in supposedly 8th century contexts in Palestine but in Assyria itself it is found 'in and following the last days of the Assyrian Empire'. Other 'Assyrian' style pottery occurs as early as the 10th century in Palestine, and a *c.* 800 BC Phrygian style occurs in Hama level F (*c.* 1200–1075 BC). Another anomaly is the apparent artistic dark age at the time of Solomon. The problems of 'Solomon's' mines at Timna are discussed. Like the other areas so far considered, Palestine's chronology is Egyptian-based.

Chapter 10 is entitled 'Egypt: the Centre of the Problem'. Nubia's dark age is outlined before moving on to Egypt, where there is not a dark age but the Third Intermediate Period (*c.* 1100–650 BC) whose length is determined so as to fit between the Sothic-dated New Kingdom and the firmly dated 26th dynasty, the evidence being adjusted to fill the available space. Sothic dating depends on the assumption that no changes were introduced to the civil calendar between the 12th dynasty Sothic date of 1872 BC and the Late Period. However it is known that several calendrical reforms were tried in only three centuries in the Hellenistic and Roman periods. An attempt to use the Egyptian lunar calendar produced an accurate date of 1549 BC within the 12th dynasty! The key identification of Shishak with Shoshenq I is attacked on the grounds that Shoshenq's conquests were mainly in Northern Israel, ruled by his ally Jeroboam, and not in Judah.

The flexible nature of the Egyptian TIP is shown, e.g. reign lengths can be adjusted arbitrarily. The authors suspect overlaps in the 20th, 21st, 22nd dynasty period, in addition to the accepted paralleling of the late 22nd, 23rd and 25th. The Memphite Genealogy, the genealogy of Ankhefenkhons, and the Apis bull burial sequence are cited as suggesting a shorter period from the 19th to 22nd dynasties. Evidence of paralleling of the 21st and 22nd dynasties is suggested by the lack of many types of record for the 21st dynasty; the finding of a 22nd dynasty mummy in the Inhapi cache supposedly sealed in the 21st; and the royal tombs at Tanis where the tomb of a 21st dynasty pharaoh is squeezed between and cuts into structures of the 22nd dynasty pharaoh Osorkon II. Twenty-second dynasty finds outside Egypt, e.g. the Osorkon vase at Samaria, are usually in contexts considerably later than their supposed date of origin and have to be explained as heirlooms.

In Chapter 11 the Mesopotamian dark ages are outlined. Assyria's is from the

death of Tukulti Ninurta I (*c.* 1207 BC) to Assur-dan II (934 BC), although this is broken for a while around the time of Tiglath-Pileser I. Documents, art and building remains are rare and styles after the break often reappear unchanged from the earlier period. Post-Kassite Babylonia is almost totally blank from *c.* 1000–750 BC. Elam's dark age is *c.* 1100–800 BC. Chapter 12 examines the supposed independent check which Mesopotamia gives to Egyptian chronology. It is shown that many of the royal synchronisms are based on the existing chronology. The Assyrian–Hittite texts do not usually name the recipients and sometimes rely heavily on restorations. The Kassite king list is restored on the basis of existing chronology. Only two synchronisms seem to independently confirm Egyptian chronology; one between Tukulti Ninurta and Tudhaliya IV (probably contemporary with Ramesses II and Merneptah); and the Amarna letters link between Akhenaten and an Assuruballit. One might argue that the good agreement between Assuruballit, dated by the Assyrian King list, and Akhenaten, dated Sothically, confirms both the king list and Sothic dating. The authors presumably have to regard this agreement as chance. They further argue that the Assyrians used history for purposes of magic, astrology, royal genealogical justification, and national prestige, and that there are a number of known errors and omissions in the Assyrian king list, several of them relating to Assuruballit and his close predecessors. They also discuss the possibilities and evidence for coregencies and dynastic parallelism.

The conclusion (Chapter 13) is perhaps disappointing as it does not say how much time is to be removed from existing chronology (it would appear to be at least two centuries), but instead the authors make a call to others to take up the task. Certainly they have amassed a surprising body of evidence which will be difficult to refute. Some have seen in this paper a 'watered down' version of Velikovsky (who wanted to remove over five centuries and have Thutmose III as Shishak – perhaps in this case Shishak would be Ramesses III). It is to be hoped that the level of controversy will also be watered down in this case.

No further volumes of *Studies in Ancient Chronology* have appeared at the time of writing but the authors have a book in press called *Centuries of Darkness* which carries their arguments further.

R. M. Porter

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Gitin, S., *Gezer III: a Ceramic Typology of the Late Iron II, Persian and Hellenistic Periods at Tell Gezer* (Annual of the Nelson Glueck School of Biblical Archaeology, Vol. III, 1990). Hebrew Union College, 13 King David Street, Jerusalem.

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Bulletin of the Anglo-Israel Archaeological Society 1990–1 Volume 10

Obituary

ORA YOGEV, 1934–1989

Ora Yogev, the daughter of a working class family, was born April 24, 1934 in Rishon Le Zion and grew up in Haifa during the British Mandate of Palestine. In the early years of statehood she worked as a kindergarten teacher in a temporary settlement for new immigrants. In 1953 she married, gave birth to a daughter in 1954 and, shortly thereafter, the young family moved to Kibbutz Beth Zera in the Jordan Valley where she worked in an agricultural capacity and as a youth director for visitors from overseas. During those years she completed her formal training as a teacher in Jerusalem, where she moved in 1963. For almost a decade she held a teaching position in the capital. Only in 1972 did she begin her formal studies in history and archaeology at the Hebrew University's Institute of Archaeology. Shortly thereafter Ora left the teaching profession for a post with the Survey of Israel and the Department of Antiquities and Museums. Ora Yogev worked as a field archaeologist until her sudden, untimely death on October 31, 1989. She is survived by one daughter.

Ora Yogev joined the ranks of archaeologists as a mature woman, choosing a career in salvage excavation, a particularly demanding, albeit rewarding branch of work. In her brief career, which spanned just over a decade, she excavated sites of many periods from the Neolithic to the Crusader, although her especial interests were in the field of biblical archaeology. To each of these assignments Ora brought her special brand of enthusiasm and virtually boundless energy. Her sense of order and organization will enable colleagues and future researchers to review and publish the results of her field work; a task which she was tragically unable to complete.

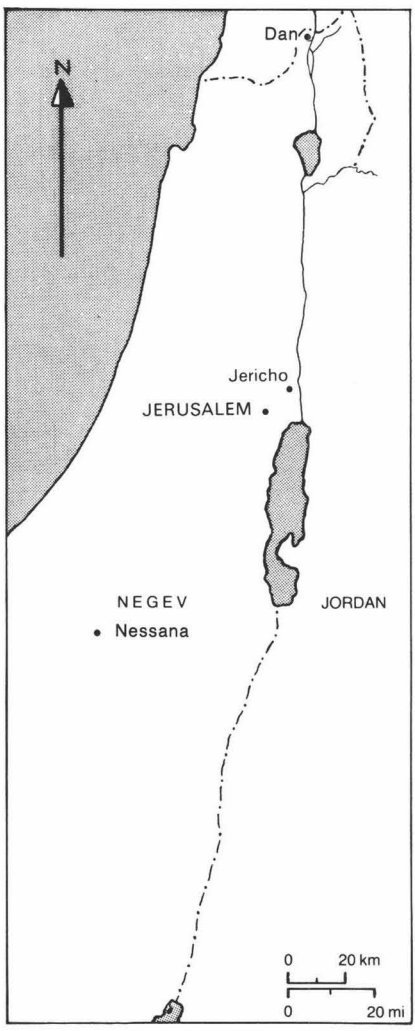
Ora Yogev will probably be best remembered for her work on a Neolithic shrine at Biqat Uvda and for the exposure of the Middle Bronze gateway and fortifications of Tell Nahariya. Other major salvage projects in her career include: Persian and Hellenistic levels at Tell Nahariya, Middle Bronze tombs at Tell Rehov, Hellenistic and Early Bronze levels at Tell Beth Yerah, Persian, Hellenistic and Mameluke occupations at Tell Es-Sumeiriya (north of Akko), Middle Bronze and Iron Age remains at Sasa in Upper Galilee, a Hellenistic farm at Moshav Aderet in the Judaean Hills and completion of the exposure of the synagogue at Kibbutz Nirim, ancient Maon (Northern Negev). A number of these excavations were published; others are in press and several are being completed by colleagues.

In all, Ora Yogev's career as an archaeologist was a brief but active and fruitful one. Beyond the published material, Ora left an unfinished MA thesis on the

pottery of the Middle Bronze II period and seminal research notes on her excavations at Beth Yerah and Tell Es-Susmeiriya. In all, Ora Yogev's contribution to the archaeology of Israel may be said to have been substantial.

Eliot Braun

The Anglo-Israel Archaeological Society: Summaries of Lectures Given in 1990–91



Sites mentioned in the lecture summaries.

Tel Nessana – a Meeting Place of Cultures During the Byzantine Period

D. Urman

Since the excavations of the Colt Expedition at Tel Nessana between the years 1935–7, no research has been done at the site because of its location on the Egyptian–Israeli border. Since August 1987, the Archaeological Division of the Ben-Gurion University of the Negev (BGU) has been conducting extensive excavations at the site headed by Dr D. Urman and Dr J. Shereshevski.

During the first season (1987), the BGU Expedition finished uncovering the ancient staircase leading from the lower town to the top of the northeastern hill of the upper town, and began excavating two living quarters near the Southern Byzantine Church. The uncovering of these living quarters was completed during the excavation season of 1988, and it would now appear that these living quarters belonged to the priests of the Southern Church.

During the 1988 season, the BGU Expedition also began to re-excavate the Late Roman Fort (which should now be referred to as the Byzantine Fort) and started a new area of excavation on the banks of the Wadi which crosses between the lower and upper towns. In this area a large living quarter which dates to the late Byzantine period was uncovered. This living quarter was built on top of the Nabataean settlement phases of the site.

At the beginning of the 1989 season, remains of a previously unknown Byzantine church were excavated in the lower

town. Some of the interesting parts of this church include a baptistery and a Martyrium.

During the 1990–1 season, the BGU Expedition concentrated on the excavation of a large newly-discovered monastery complex, which was found on the north edge of the northern hill of the upper town. The monastery, which dates to the Byzantine period, includes a chapel, a courtyard with mosaics, living quarters, etc.

It should be noted that evidence that Nessana was a meeting place of cultures was uncovered in all the new areas of the excavation. The evidence points to cultural influences from Palestine, Syria, Transjordan, Egypt and other Mediterranean countries. Pottery from the Byzantine strata of Nessana includes wares from all these regions. In addition, there were ostraca written in many of the languages of the Byzantine world – Greek, Latin, Syriac, Arabic, and Coptic.

(Ben-Gurion University of the Negev)

Notes

1 H. D. Colt et al., *Excavations at Nessana*, Vol. I, London, 1962.

Synagogue and Temple in Late Antiquity

M. Goodman

Most Jews in Late antiquity had a clear notion that pre-eminent sanctity was to be found in one specific spot on earth, the Holy of Holies within the Temple in Jerusalem. There is no parallel in the Hellenistic or Roman periods to the Jewish idea that the whole world may be partitioned into concentric circles of decreasing purity and sanctity in proportion to distance from a single sacred place. The question addressed in this lecture was how Jews who had such a world-view could come also to see their synagogues as sacred space.

The main religious activities in synagogues were the reading and explanation of the Torah and prayer. Such activities might be expected to give the site of a synagogue a special status in the eyes of Jews, but not necessarily to elevate the site to a sanctity which would remain in the site even after the activities had ceased. After all, it was possible to read the Torah and to pray in almost any place.

Nonetheless there is evidence that some Jews in antiquity did treat synagogue sites as sacred. Josephus described the synagogue at Antioch before AD 70 as a temple (Greek: *hieron*). From the third century onwards there survive a number of inscriptions from a variety of places in which the description of the synagogue as a 'holy place' (Greek: *hagios topos*; Aramaic: *atra kadisha*) seems to have become a conventional formula. Unless the terms used acquired a different meaning, such phrases seem to imply that a synagogue (or part of a synagogue) could be ascribed sanctity similar to (but less than?) the Jerusalem Temple.

The notion that synagogue sites might be treated as holy is to be found in some rabbinic texts, but this attitude is not consistently espoused, and it is hard to explain the divergent and vague rabbinic views on the subject if the impetus to treat synagogues as sacred had originally come from a central rabbinic authority. It seems more likely that both the rabbinic statements and the epigraphic formulas reflect a general religious instinct that synagogue sites were to be treated as special, in which case the problem is to discover the origins of that instinct.

It is possible that the instinct simply reflected a natural desire to be able to treat a local place as sacred. It seems psychologically plausible that such a desire would be found before AD 70 among those who lived too far from the Jerusalem Temple to go there more than rarely, and after AD 70 among all Jews in partial compensation for the destroyed temple. There is little explicit evidence that such a substitution theology was espoused, but lack of evidence need not indicate that such an attitude did not exist.

However, the main intention of the lecture was to focus attention on one possible further factor which has been less often

considered. Gentile pagans naturally saw synagogue services as similar to pagan rites, Torah scrolls as like pagan idols, and synagogues as like pagan shrines. When the Roman emperors felt it necessary to pronounce on the status of synagogues in Roman law, they tended to accord them rights as 'places of religion' (Latin: *loca religionis*). Jews might espouse such outsiders' views for a number of reasons. So, for instance, such views might in any case coincide with Jews' own notions. Or Jews might feel that their synagogues would be better protected against attack if they connived in Gentiles' assumptions that the sites were holy. Or, more insidiously, if other people consistently ascribed a numinous quality to the buildings in which Jews studied and prayed, after a while Jews too might come to find the idea congenial.
(Oxford Centre for Postgraduate Hebrew Studies)

The Tale of Two Cities – Israelite Dan and Canaanite Laish

A Biran

The lecture summarized the results of twenty-three seasons of archaeological excavations at the site of Tel Dan, identified with Canaanite Laish and Israelite Dan. The name Laish first appears in the historical records in the 2nd millennium BC but the city was in existence already in the 5th millennium BC and may well have been known by that name. The Early Bronze Age city, in the 3rd millennium was large, covering an estimated area of 50 acres and enjoying a rich material culture. A large part of this city lies buried under the massive earthen ramparts built in the mid-eighteenth century BC, the transitional Middle Bronze IIA–IIB period. Especially significant was the discovery of the city's mud brick gate with three arches also built with sun-baked mud brick. Although reduced in size because of the rampart construction the city was prosperous, maintaining strong cultural ties with its neighbours to the north. Contacts with Mycenae and Cyprus are evident during the Late Bronze Age period in the 15th–13th centuries BC. Among the imported vessels is a unique charioteer vase. Laish was conquered by the tribe of Dan according to *Judges* 18 and henceforth the city was known by its new name – Dan.

The first Israelite settlement was seminomadic, characterized by numerous pits and by the introduction of a new type of vessel – the collared rim jar. A cult centre must have also been built by the Danites according to *Judges* 18, but has not yet been uncovered. There is ample archaeological evidence, however, for the activities initiated by King Jeroboam who set a golden calf at Dan. Architectural remains and numerous cult objects attest to the centrality of the sanctuary at the end of the 10th century BC. Elaborate changes took place during the reign of the Israelite kings Ahab and Jeroboam II. These two kings also fortified Dan by building a city wall and gate complex. Following the Assyrian conquest the city enjoyed a period of unparalleled growth and prosperity and served as a commercial and cultural link between the Phoenician coast and the hinterland.

It appears that a decline set in after the Persian conquest, but Dan maintained its position as a cultic centre well into the Hellenistic and Roman periods. The correct identification of our site with ancient Dan and of the centrality of its cult, received added confirmation with the discovery of a bilingual Greek and Aramaic inscription – 'To the God who is at Dan'.

Crusader Jerusalem

D. Pringle

(This paper represents a shortened version of a lecture given to the Anglo–Israel Archaeological Society and the Palestine Exploration Fund at the Society of Antiquaries, Burlington House, London, on Tuesday 3 April 1990.)
The sources for the study of Crusader Jerusalem are extensive. They include such evidence as pilgrims' descriptions, maps, chronicles and charters, as well as informa-

tion derived from topographical and archaeological work carried out from the 1860s to the present day. I will therefore confine myself here to saying something about the physical and social character of Crusader Jerusalem, and about what made it different from other contemporary medieval cities.

Population

At the time of the Crusader conquest, Jerusalem had been part of the Land of Islam for over four-and-a-half centuries. As the Crusaders advanced on the city in AD 1099, much of its Christian population was expelled or fled; and when the city fell, the remaining Muslim and Jewish inhabitants were slaughtered or sold for ransom. The Jerusalem captured by the Crusaders was therefore virtually devoid of a resident native population. A first task of the new rulers was therefore to repopulate it. This proved no easy undertaking. One obvious source of people was the Crusading army itself; but in the early years of the 12th century, the population may still have been counted in the hundreds rather than the thousands. Jews and Muslims were officially excluded from settling; but after 1115, attempts were made to bring in native Christians from Transjordan. In 1120, King Baldwin II also exempted basic foodstuffs from custom dues, in order to lower the cost of living; and official weights and measures were abolished in order to encourage local traders. By the 1160s, John of Würzburg mentions French, Lorrainers, Normans, Provençaux, Auvernois, Burgundians, Germans, Italians and Spaniards living in the city; and by the time of its capture by Saladin in July 1187, the resident population (excluding refugees) may have numbered around 20,000–30,000 – that is, roughly the same as Acre, Tyre, Pisa, Florence and even London in the same period.

Walls and Gates

The walls of the city captured by the Crusaders enclosed much the same area as those of Sulayman the Magnificent, which still stand today. At 860 dunams, the city was therefore somewhat smaller than that walled by the Empress Eudocia in the mid-5th century. The southern parts of Byzantine Jerusalem – Mount Sion, Ophel (or the City of David) and the Pool of Siloam – seem to have been excluded when the walls were rebuilt around 1033. One result of this was that the Jewish community, formerly settled on Mount Sion, moved for security into the northeast part of the city (today's Muslim Quarter), which in 12th-century sources is called the *Juiverie*. The walls around the Patriarch's (or Christian) Quarter were rebuilt around 1063, and the city's defences were strengthened in the 1070s by the Seljuks, who may also have been responsible for the outer wall (*barbacan*, or *antemurale*) and the ditch that are recorded in accounts of the Crusaders' siege. Crusader Jerusalem's walls were therefore essentially those of the 11th century, repaired and strengthened where necessary. Maintenance, however, was evidently not what it might have been, for in 1177 part of them fell down, apparently through neglect.

The city had six main gates: David's Gate (today Jaffa Gate) on the west, St Stephen's Gate (today the Damascus Gate) on the north, the Josaphat Gate (today Lion's Gate) and the Golden Gate on the east, the Tanners' Gate (today Dung Gate) and the Gate of Mount Sion (east of the present Zion Gate) on the south. There were at least five posterns: St Lazarus's on the northwest (near the 19th-century New Gate), St Mary Magdalen's on the northeast (near today's Herod's Gate), at least two in the walls of the *Ḥaram ash-Sharif*, and the *porte de Belcaire* on the south linking the street of St James with the church of Mount Sion.

Excavations in the 1970s revealed the rock-cut ditch skirting the Tower of Goliath (Tancred's Tower) at the northwest corner of the city, and a narrow causeway crossing it, carrying an aqueduct and possibly the approach to St Lazarus's postern gate (see Yadin 1976, 109–10).

At St Stephen's Gate, the Crusader barbican with its bent entrance is clearly

visible as a result of British–Jordanian excavations of the 1960s (see Wightman 1989). These show that by the early-12th century, when the outer gate was built, only the central arch of the inner Roman gate was still in use. The roadway between the two gates was later flanked, and possibly covered over, by a building, which included on the west a chapel with an Annunciation scene painted around 1140 on its east wall (see L.-A. Hunt, in Folda 1982, 191–214). A stone chute opens through the same wall into a trough, or 'manger', beside the roadway, and is faced by another identical one in the wall opposite. These seem unlikely to have been intended for animals, for that would have effectively entailed blocking the thoroughfare. Possibly, since there are cisterns below the chapel and the room opposite, they were intended for distributing water to thirsty pilgrims entering the city – or perhaps tokens. While the gates and walls would normally have been under the control of the king, it seems that at this time much of the area around St Stephen's Gate belonged to the Benedictine abbey of St Mary Latin. In 1158, Pope Hadrian IV confirmed to the abbey 'the palace next to St Stephen's Gate, certain houses to the east after that palace, houses above the city walls next to the same palace as far as the second tower on the walls, and, outside the gate, the church of St Stephen [today the École Biblique] next to the Nablus Road, the hospital beside the same road, (and) the orchard between that church and Jerusalem' (Hiestand 1985, 218–22, no. 79). And in *c.* 1175, the pilgrim Theodoric wrote, 'In the same gate there is held in veneration a hospital, which the Greeks call a *xenodocheion*' (ch. 26). It seems very likely that this was the building revealed by the excavation, though whether it should be identified with the 'palace' or with the 'hospital' mentioned in 1158 is uncertain.

The Golden Gate was normally kept walled up in the 12th century, but was unblocked for processions on Palm Sunday and the Feast of the Exaltation of the Cross. Although it has yet to be resolved whether the gate was built during the last years of Byzantine or the first years of Umayyad rule, it seems possible that the two domes on raised drums which cover its two eastern bays belong to the Crusader period, when it was converted into a chapel.

The Temple and the Citadel

In Islamic Jerusalem before the Crusader conquest, the two centres of religious and secular authority had been the *Ḥaram ash-Sharif*, or Temple area, on the east and the Citadel, or David's Tower, on the west. These had been the last strongholds to fall, the former to Tancred and the latter to Raymond of St Gilles. Both Duke Godfrey and King Baldwin I resided at first in the Citadel. But in 1104, Baldwin moved to the *ʿAqsa* Mosque, which he converted into a royal palace; it was indeed identified as occupying the site of the palace of an earlier king of Jerusalem – King Solomon. In 1118, however, the king transferred his residence back once more to David's Tower, and granted the entire *ʿAqsa* and the southern part of the Temple area to the Order of Knights Templar, in which to establish their headquarters. The buildings which the Templars adapted or constructed *de novo* in this area are described in great detail by Theodoric (ch. 17) around 1175, from the stables in the vaulted cellars below the former Temple precinct, to the chambers, baths, gardens and courtyards above. On the west side of the mosque they had begun to build by this date a new church, associated with a new cloister and refectory. Most of these structures seem to have been swept away when the *ʿAqsa* was made once more into a mosque, though much of the masonry of the porch built by al-Muʿaẓẓam ʿĪsa (1217) seems to be reused Crusader work and on the east side there also still survive a fine Romanesque rose window and the walled-up apse of a 12th-century chapel.

The main strongpoint of the Citadel was a massive rectangular tower, one of three built by Herod the Great around what had in his time been the northwest angle of the city. Although much of the early Muslim and Crusader structures which surrounded

this had been destroyed or obscured by Mamluk and Ottoman rebuilding, clearance work in the 1930s and 40s indicated that by the Mamluk period the Citadel had been expanded north and west beyond the earlier wall line (Johns 1950). It was suggested at that time that the responsibility for this enlargement lay with the Franks, but the proof has only emerged as a result of recent excavations and survey, which have yet to be fully published. To the south of the Citadel, excavations in 1971 in the Armenian Garden revealed the vaulted basements and cisterns of what may have been part of the Crusader royal palace, which, unknown to the Franks, would have occupied the same site as that of King Herod (see Yadin 1976, 55–56).

The Holy Sepulchre

Between 1036 and 1048, the Byzantine Emperor Constantine IX Monomachus had rebuilt the rotunda enclosing the tomb of Christ and the courtyard east of it, but not the great basilica of Constantine I. In the 12th century the church was enlarged by adding a Romanesque transept and choir on to the east side of the rotunda, thereby bringing all the holy sites associated with Christ's Passion under one roof. A cloister for the canons regular, who were constituted in 1114 to serve the church, was also constructed east of this. The main entrance, from the south transept, led into the crossing, covered at first by a square lantern tower, and later by a dome. Standing here beneath the dome, at the very centre of the world, the pilgrim could have turned westward to gaze into the mouth of the empty tomb, or east towards the high altar, at which the Resurrection, depicted in mosaic high above in the semi-dome of the apse, was re-enacted daily in the celebration of the mass. From a door in the north side of the apsidal ambulatory, the canons' night stair led up to their cloister and dormitory, while another door on the south side led down to the chapel of St Helena and the cistern in which the True Cross had been found (Coüasnon 1974; Corbo 1982).

Other Churches

Apart from the Holy Sepulchre, which served as parish church for the city, some 60 other churches and chapels are documented, ranging from the churches of major religious houses down to small shrines and private chapels. Many of the churches built in the 12th century were associated with holy sites of the New Testament, and a number of them replaced ruined Byzantine churches.

Among the major religious houses in the 12th century was the Augustinian church of the *Templum Domini* (Dome of the Rock), in which were recalled the New Testament events associated with Temple. The canons' cloister adjoined the building on the esplanade to the north. Inside, the rock itself was covered by marble paving, and an altar and choir were built upon it, surrounded by an intricate wrought-iron screen, some panels of which still survive in the nearby Islamic Museum.

On the Mount of Olives stood another Augustinian house, associated with Christ's Ascension. Here an earlier circular Byzantine church was rebuilt in stages. First a small octagonal aedicule (without the dome that now covers it) was built over the rock which bears Christ's footprint. Later in the 12th century, this was enclosed by a larger octagonal church, with – appropriately enough – a hole in the roof. It is uncertain exactly how this building was vaulted, and whether the aedicule stood alone (like the Holy Sepulchre) or formed a respond for the central part of the vaulting.

The second-largest church in Jerusalem, also Augustinian, was that commemorating the Falling Asleep of the Virgin Mary on Mount Sion. This replaced a Byzantine church, which had been mostly destroyed in 1033, though Benjamin of Tudela (*c.* 1163) speaks of stones from it being reused in constructing the Crusader one. The 12th-century church was in turn almost completely destroyed in the early 13th century. It seems to have been similar to some of the larger Romanesque churches of the West, with a high vaulted nave, galleries over the aisles, and an apsidal ambulatory.

In the south gallery, overlooking the sanctuary, was the Chapel of the Holy Spirit – the upper room in which were commemorated the Last Supper and the descent of the Holy Spirit upon the Apostles at Pentecost (see H. Plommer, in Folda 1982, 139–66).

The burial place of the Virgin Mary had been venerated since Byzantine times in a crypt below a centrally planned church in the Kidron Valley, or Valley of Jehoshaphat, between the city and the Mount of Olives. This church and its monastic buildings were rebuilt by the Benedictines from 1112 onwards. Associated with them were the cave-church of Gethsemane, where Christ had left His disciples while He went to pray in the garden, and the church of the Saviour's Agony (now partly covered by the church of All Nations), where He sweated blood on the night of His arrest. Further down the Kidron Valley were the caves of hermits.

South of the Holy Sepulchre, within the city, were two Benedictine houses, founded in the 11th century, St Mary Latin for men and St Mary Magdalen (also known as St Mary Parva, or Majora) for women. The former was rebuilt by the Lutherans at the end of the last century, and the remains of the other were demolished by the Greeks about the same time to make way for the present market. It was from the hospitaller functions associated with these two houses that the Latin Hospital developed in the later 11th century, taking as its chapel a former 6th-century Greek church of St John. In 1113, the Hospital of St John became an order of the Church in its own right, and in the 1170s its Jerusalem establishment contained beds for more than 1000 sick people.

Another Benedictine house, for nuns, was St Anne's, built on the traditional site of the house of Sts Joachim and Anne, the parents of the Virgin Mary. What remained of the medieval belltower and conventual buildings were demolished and the church itself extensively restored during the 1860s, when it was granted to the French Government. The stark simplicity of the building today is therefore a little misleading, and one must imagine the interior as it would have been in the 12th century with richly painted walls and gilded altar furnishings. Close to St Anne's was a chapel replacing the Byzantine church constructed over the Pools of Bethesda, which in this period were largely filled in.

In the 1140s, the Hospitallers built a separate church and hospital in the southern part of the city for German brethren and pilgrims, who, it seems, were tired of having to communicate in French. The church of St Mary of the Germans came to light during clearance in the Jewish Quarter in the 1960s (Benvenisti 1970, 63–4). Near by, the Jewish Quarter excavations have also revealed the remains of another church, identifiable as that of St Peter in Chains, into which one had to descend down 20 or more steps; in its crypt, according to John of Würzburg (*c.* 1165), was the prison in which Peter had been bound with chains (see Avigad 1983, 250–3).

Some early 13th-century accounts of Jerusalem interpreted by the late Fr F.-M. Abel (and more recently by Wilkinson 1988, 73–7) suggest that before 1187 there already existed an early form of the modern Way of the Cross, starting from the sites located around the Antonia Fortress and proceeding through the Temple area to the Holy Sepulchre. The precise location of the Roman governor's residence and the house of the high priest Caiaphas, however, were uncertain. Thus, an even earlier tradition which placed them on Mount Sion seems to have existed in parallel, and accounts for the second church of the Flagellation (today known as the House of Caiaphas), which still stands between the site of St Mary of Mount Sion and the city wall.

Apart from the Latins, a variety of different eastern Christian communities are recorded as possessing altars and chapels in the Holy Sepulchre and chapels and churches elsewhere in Jerusalem in the 12th century. These included the chapel of St James in the Holy Sepulchre complex, which is still the parish church of Jerusalem's Arab Orthodox community, the churches of St James the Martyr (now the Ya'qubiyya mosque), St Mary Mag-

dalen (whose foundations alone survive beneath the Maʿmuniyya Muslim Girls' School), St Elias or the Convent of Lentils (now St Nicodemus), St Agnes (now the Mawlawiyya mosque), St Mark (today the church of the Syrian Orthodox community), and the Armenian cathedral of St James the Great.

Houses

Theodoric (ch. 3) describes the houses of Jerusalem as 'lofty piles of carefully wrought stonework . . . not finished with high-pitched roofs after our fashion [he was, of course, a German], but level and flat'. Charter evidence suggests that, as in Caesarea, a number of houses, particularly those predating the 12th century, were of the oriental type, with a central courtyard and cistern. Others built in the 12th century, however, were of a more south-European urban style, with one or more storeys of living rooms (or solars) above store-rooms or shops opening on to the street. In 1143, for example, we hear of some houses belonging to the canons of the Holy Sepulchre in Mount Sion Street (today Jewish Quarter Street, or Suq al-Hussur), which were above the vaults of the Hospitallers' exchange, which were in turn above a bakery also belonging to the canons. The canons sold the houses to a Syrian, on condition that if anyone should in the future add on another storey and wish to sell it, they should have the right of pre-emption at one mark less than the proposed selling price (Bresco-Bautier (ed.) 1984, 165, no. 68). Such high-rise developments, with houses above commercial premises, may be illustrated by numerous surviving examples in Italy and the south of France. It so happens, however, that Mount Sion Street – or the 'Cardo' as its promoters now call it – is once more open for business, and in it there survive a number of Frankish shop fronts of just this type (see Avigad 1983, 248). Another row of shop fronts survives in the façade of the medieval Hospital which faces on to David Street; although the first-floor *piano nobile*, which would have been occupied by the Hospital itself, has now gone, a row of stone corbels survives to indicate the former existence of some kind of timber balcony overlooking the street.

Another document serves to illustrate both the pressure on building land which existed in certain (though not all) parts of the city in the 12th century, and also what it was like to have the canons of the Holy Sepulchre as next-door neighbours. Around 1150, another Syrian, called Morage Raiz, was constrained by debt to sell part of his house 'from the foundation as high as it is possible to build' to the canons, who wanted to enlarge their adjoining commercial premises. The canons had earlier made an agreement with the hapless Morage, by which he was obliged to promise,

> That along all the sides of their land which adjoin my house, they may be free to build their foundation piers below my walls and to insert the spring of their vaults into the same walls, and that they may block up all the openings, whether below or above, which exist in my walls facing their side, i.e. doors, windows, chutes, and whatever else there may be, and that when the canons or their agents want to work on their land next to my house they will warn me or my family, and we will prop up my wall, and if by accident my house wall should fall down, the canons will offer me and my family nothing in return (Bresc-Bautier (ed.) 1984, 231–2, no. 111).

Markets

The principal grain market of Crusader Jerusalem lay just inside David's Gate, in front of the Citadel. The pork market was just north of it, presumably because that was where it had been (in the Christian Quarter) in Muslim times – as indeed it still is today, in the guise of Seniora's grocery and salami store. Other butchers practised their trade around the Tanners' Gate. According to Theodoric (ch. 3), most of the streets were paved with large stones, and many were covered by stone vaults

pierced with openings to let in the light. Principal among the various markets mentioned in the sources was the triple *sūq*, whose thoroughfares were built over the central roadway and colonnaded porticos respectively of the main north-south Byzantine street, from the Syrian money exchange in the north to the Latin one near the intersection with David Street in the south. The central *sūq* was the 'Street of Bad Cookery', or restaurants; and on the west of it was the herb and vegetable market. At the north end was the fish market, and the markets for poultry, eggs and cheese, from which another street, containing the shops of Latin and Syrian goldsmiths, led westward past St Mary Latin to the south door of the Holy Sepulchre. A charter of 1152 indicates that the triple *sūq* was built, or possibly rebuilt, by Queen Melisende; and inscriptions on some of the shop fronts indicate that they belonged to the convent of St Anne, of which Melisende was a known patron.

Water Supply

For its drinking-water supply, the city relied largely on cisterns fed by the winter rains; water for other purposes, such as bathing, came from a number of the earlier catchment pools like Hezekiah's Pool, which remained in use. Water supply remained a problem, however, particularly as the population grew; and in the 1180s, a man named Germanus is recorded endowing three drinking fountains, each provided with a marble basin and two beakers. He also built the large catchment pool on the west of the city, known today as Sultan's Pool; and he constructed a well operated by a horse-driven *nuria* in the Kidron Valley below Siloam, from which teams of donkeys carried water up to the city.

Burial

Those who were important or wealthy enough might be buried inside a church, or in an extra-mural cemetery attached to a church. The only church with full parochial rights, including that of burial was the Holy Sepulchre, whose cemetery was located around the Mamilla Pool, where some Crusader tomb chests may still be seen reused as Muslim grave-markers. Poor or destitute pilgrims, however, could be guaranteed a free Christian burial by the Hospitallers in the vast charnel pit below their church of St Mary in Aceldama – the Field of Blood and burial-place for strangers, bought with the money paid to Judas for betraying Jesus.

Jerusalem in the 13th century

After its fall to Saladin in 1187, Jerusalem, excluding the *Ḥaram ash-Sharīf*, was returned to Christian hands in 1229, and the *Ḥaram* as well ten years later; but in 1244 all was lost when the Khwarizmian Turks profaned the Holy Places. It is difficult to point with much confidence to any particular building work carried out in this period.

The florid sculpture of the so-called 'Temple Area Workshop', which has been ascribed to Frederick II's time in Jerusalem (Buschhausen 1978), all now appears to be 12th century, and any connections with late 12th or early 13th-century sculpture in southern Italy seem more likely to be the result of artists fleeing Palestine after 1187 than of Hohenstaufen patronage of art in Jerusalem (see Pace 1984). Moreover, the common assumption that this sculpture was largely produced in or near the Temple area by artists working for the Templars is also, to my mind, open to serious question, since virtually every piece known from the Temple area is in Muslim reuse (cf Jacoby 1982); like the pieces of Crusader sculpture incorporated into Muslim buildings in Cairo and Damascus, they could therefore have come from any of the 12th-century buildings despoiled by the Ayyubids and Mamluks.

The room of the Last Supper, or Cenacle, on Mount Sion has also been dated by some to the 13th century (and even to the 14th). However, a paper by the late Hugh Plommer (in Folda 1982) has shown that a possible architectural and

certainly more plausible historical context for it exists in the 1180s, just before the fall of the city to Saladin.

The most convincing pieces of work that may be ascribed to the 13th-century Crusader reoccupation are military. In the Citadel, which is known from documentary sources to have been refortified (Johns 1950), part of the *talus*, or *glacis*, is built of massive, smoothly dressed blocks with drafted margins, mirroring (though not copying exactly) the Herodian work of David's Tower. It is more closely comparable, however, to the work carried out by the Teutonic Order on the keep of Montfort Castle in Galilee in the 1220s and 1230s. At St Stephen's Gate, there is also archaeological evidence for a 13th-century *mise en valeur* of the outer gate of the barbican, which seems to have taken place after the destruction of Jerusalem's defences by al-Muʿaẓẓam ʿĪsa in 1219–20 and before its final demolition by al-Nāṣir Dāwūd of Karak in 1239 (see Wightman 1989, 59–60).

Thirteenth-century Jerusalem therefore seems to have had more the character of an armed camp than of a city. Some of the reasons for the reluctance of Westerners to resettle there, however, may be traced back to the 12th century. At that time Jerusalem's importance within the Crusader kingdom was primarily religious and administrative, rather than economic or strategic. Its markets served no more than the city and its immediate surrounding region; it never developed as an entrepôt for long distance trade, as did Acre, Alexandria and even Damascus during the period of the Crusades, simply because it was in the wrong place to do so, and its nearest port, Jaffa, had a poor anchorage. Such economic strength as Jerusalem had in the 12th century resulted from its position as administrative centre not only of the kingdom, but also of two international military orders and a number of other well-endowed religious houses with extensive possessions in the Levant and the West. When the city was lost, and the secular and religious administrations moved elsewhere, there remained little incentive, apart from the religious one, to attempt to retake it; and so long as pilgrims were allowed access to the Holy Places by the Ayyubids and Mamluks, even this incentive lost much of its potency.

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Grants Given by the Society

James D. Anderson

I have been given a travel grant by your organization for excavations in Israel, and I appreciate very much your support.

The site of Gilat lies upon a hillock overlooking the lush fields of a nearby farming community (Moshav Gilat), near Beer Sheva, in the northern reaches of the Negev Desert, along the Nahal Patish. The site is Chalcolithic (*c.* 4500–3500 BC) and has been excavated for three seasons prior to this season, over a period of fifteen years. First discovered in the 1950s by David Alon (co-director of the project), Gilat provides a unique opportunity to study the beginnings of public cult activities in the Ancient Near East.

The principal investigator of this season's project was Dr Thomas Levy, Assistant Director of the Nelson Glueck School of Biblical Archaeology of the Hebrew Union College, Jerusalem. Dr Levy also conducted the archaeological field school at the site sponsored by the Hebrew Union College.

My job was to open 5 × 5 metre squares with the help of fifteen volunteers and sometimes as many as twenty Bedouin workmen and youths from Moshav Gilat. It immediately became apparent that the site was artifactually very prolific. In previous seasons, it was proved without a doubt that this habitation consisted in part of a temple sanctuary. Indeed, we soon found numerous objects, such as the famous 'violin-shaped' figurines which have been attributed the context of cult.

The recovery of so much architecture as well as the wealth of material artifacts, together with the insights into cult procedures combined to make the excavations at Gilat 1990 extremely successful. We all look forward to another fruitful season in 1991.

Please thank the Society on my behalf for all their support.

S. James

Tell Jezreel is situated on the northwestern spur of Mount Gilboa on the edge of the Jezreel valley between the modern towns of Afula and Beth Shan. The site of the biblical city of Jezreel, Tell Jezreel lies on the ancient route between Megiddo and Beth Shan part of the main highway connecting Egypt, Syria and Mesopotamia during the Bronze Age.

The 1990 excavations were conducted under the auspices of the Institute of Archaeology at Tel Aviv University and the British School of Archaeology in Jerusalem. Co-directors were Professor D. Ussishkin and John Woodhead. The aim of the project is for a systematic study of the site and its history with emphasis on the period of the Israelite Monarchy.

The intention during the first excavation season was to concentrate on the northeast and southeast monumental corners of an Iron Age structure, as well as selected areas in other parts of the site including the investigation of the remains of the Crusader Church.

Notes for Contributors

Original manuscripts should be submitted to the Editors of BAIAS, type-written in English, on one side of A4 paper only, double-spaced, and with ample margins on each side of the sheet. Endnotes typed on separate sheets should be kept to a minimum. The 'Harvard' reference system is employed in this publication. Works should be cited in the text by author's name and date of publication, i.e. '(Albright, 1949, 71)'. An alphabetical bibliography should be appended at the end of the text, i.e. 'Albright, W. F., (1949). *The Archaeology of Palestine* (Penguin Books, Harmondsworth)'. Original photographs and line drawings (in black and white only), suitable for 1:1 reproduction, may accompany the text. Authors are responsible for obtaining permission to reproduce copyright material. A scale should be added to all drawings and photographs where necessary. The authors of all published articles will receive a copy of the *Bulletin* and offprints. Book reviews should be kept to 300 words but longer reviews will be considered for publication. Authors will receive three copies of their review.

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