PALESTINE EXPLORATION FUND MONOGRAPH

SERIES MAIOR

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THE ARCHAEOLOGY AND EARLY HISTORY OF TRADITIONAL GOLGOTHA

by

Shimon Gibson & Joan E. Taylor

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Dedicated to the memory of Howard Newton Pennant (1967–1993)

Contents

Foreword

The Palestine Exploration Fund has published a number of volumes over the years since its foundation in 1865. These have included excavation reports such as those of C.W.Wilson and C.W.Warren, *The Recovery of Jerusalem: A Narrative of Exploration and Discovery in the Holy City* (1871); W.M.F.Petrie, *Tell el Hesy (Lachish)* (1891); F.J.Bliss and R.A.S.Macalister, *Excavations in Palestine During the Years 1898–1900* (1902); Macalister, *The Excavation of Gezer 1902–1905 and 1907–1909*, I–III (1911–1912); and J.W.Crowfoot and others, *Samaria-Sebaste: Reports of the Work of the Joint Expedition in 1931–1933 and of the British Expedition in 1935*, 1–3 (1938–1957); as well as smaller volumes such as those of G.Schumacher, *Across the Jordan* (1886), *Pella* (1888), *Abila and the Decapolis* (1889), etc.; F.J.Bliss, *A Mound of Many Cities, or, Tell el Hesy Excavated* (1894); G. Le Strange, *Palestine under the Moslems* (1890), and many others.

The availability in recent years of new manuscripts suitable for publication has led the Committee of the Fund to revive its publication tradition and to establish a Monograph Series. Since some manuscripts are largely textual, while others, such as specifically archaeological expositions, require a large format to accommodate plans, sections/elevations and other illustrations, the monographs will be in two parallel series, the Series Minor in octavo, and the Series Maior in quarto.

Facing the title page of the present volume is a list of actual and proposed volumes in the two series. Others will follow.

The first volume in the Series Minor, *Edom and the Edomites* by Professor J.R.Bartlett, appeared in 1989. The fact that this volume formed part of the Palestine Exploration Fund Monograph Series was inadequately indicated, while that it was secondarily published in the series: Journal for the Study of the Old Testament (Sheffield) as no.77, was unfortunately given greater prominence. It is nevertheless Palestine Exploration Fund: Series Minor 1, and should be so classified in library catalogues.

The present volume by Mr Shimon Gibson and Dr Joan Taylor, is the first in the Series Maior. It deals with details of the area below the Church of the Holy Sepulchre in Jerusalem. Dr Taylor's volume *Christians and the Holy Places*, which deals with related matters, was published by the Oxford University Press in 1993.

T.C.Mitchell
Editor
Monograph Series

Preface

The history of the site on which the Church of the Holy Sepulchre now stands is by no means one of the most perspicuous subjects of Jerusalem research. Disagreements of different kinds between the various ecclesiastical communities have hampered the clarification of many of its important problems. Reports are scattered. Little has been written by the actual excavators. Despite the admirable synthesis of the archaeological work published by Corbo (1981–2), confusion abounds.

The present authors came to re-examine certain questions about the site by a somewhat circuitous route. In 1986, Joan Taylor began investigating the case of the Jerusalem ship drawing and became convinced that the present state of the drawing on the stone was not authentic. It had been cleaned in 1975, after which time the drawing seemed quite different. The British School of Archaeology in Jerusalem, where Taylor was Annual Scholar that year, granted her permission to see original photographs of the drawing and other material in its archives which appeared to confirm her conclusions. Taylor then went on to Edinburgh, Scotland, to complete her Ph.D. on alleged Jewish-Christian archaeological remains at Christian holy places in Israel. She sought out Svend Helms, who, with Archibald Walls, had been observing the Armenian excavations when the stone with the ship drawing was uncovered in 1971. He had been convinced for many years that the original drawing on the stone had been altered (see Helms, 1980) and provided her with a black-and-white transparency of the original state of the drawing. Taylor then located Archibald Walls in London, who took a great interest in the case of the ship drawing and excavations, and provided her with detailed notes, plans and photographs. Armed with this material, Taylor began working on an article about the authenticity of the ship drawing and the Armenian excavations in the area now known as the Chapel of St.Vartan.

In 1987, Taylor was introduced to Shimon Gibson, who has a specialist interest in the archaeology of Jerusalem and its vicinity, and she decided to collaborate with him. In November 1975, Gibson had been asked by Magen Broshi to join him in the investigation of archaeological remains being uncovered by the Armenian Patriarchate in the area now known as the Chapel of St. Vartan. At that time excavations were well in progress and access to the site was rather dangerous even though the Armenians had erected scaffolding to prevent the collapse of some of the ancient walls. Gibson, with Broshi, had assumed that the ship drawing was authentic (see footnote in Freeman-Grenville, 1987, p.198). The difficulties in gaining access to the excavation area made it seem unlikely to them that the ship drawing had been altered by someone from the outside. There also seemed to be no motive for someone from within the church to deliberately change the drawing. It seemed reasonable, therefore, that the inscription and ship had been wrongly interpreted by Bennett and Humphreys (1974), on the assumption that the ancient drawing had not been properly cleaned before it was recorded. Moreover, a photograph of the ship in their article, which we now know to have been badly reproduced, appeared to confirm such an assumption. However, it was only in 1987 on being shown the original photographs of the ship drawing taken in 1971, lent to Taylor by Walls and Helms, that Gibson finally became convinced that the drawing had indeed been altered at some point between 1971 and 1975, well before he first visited the site with Broshi. Chapter 2 was the first result of this joint collaboration, with Taylor responsible for the study of the Latin inscription and Gibson for the analysis of the ship drawing. This work naturally led to a new analysis of the archaeological excavations within the area of the Chapel of St.Vartan (Chapter 1).

What began as a study of one particular area of the Church of the Holy Sepulchre, however, has developed into the present book in which the Chapel of St. Vartan excavations form but one section. In the course of our work, we discovered more and more areas of confusion and debate. It became clear from a number of publications that literary sources were sometimes being used uncritically, and archaeological information was being assessed incorrectly. This, we believe, has resulted in a number of erroneous assumptions and lacunae that have led to ambiguities or faulty conclusions.

Our method of work has been to determine which problems were most in need of further investigation, and to allocate subjects between us. Nevertheless, we have discussed each subject intensively before writing, and amended each other's texts subsequently, sometimes substantially. We hope that our work contributes positively towards solutions to a few of the problems of the building's architectural history and the site's topography. We do not pretend to be comprehensive in our discussion of the church. The discussion of the Chapel of St. Vartan excavations is as thorough as possible, but there are many areas not covered in this book, and areas which we deal with only very briefly. In the case of the Byzantine church complex, for example, we concentrate on certain matters which we consider to be in need of re-investigation, and leave aside a detailed exam-

ination of the Edicule, which has been discussed by many others (e.g. Vincent and Abel, 1914, pp.105–290; Wilkinson, 1972). Little can be added to such discussions before the present structurally unsound Edicule is demolished and archaeological examinations are conducted. In the meantime, the Gresham Jerusalem Project, under the direction of Martin Biddle, is undertaking a detailed photogrammetric study of the Edicule, which is enabling scholars to determine more accurately its structural history from the rebuilding of 1555 to the present day (Biddle, et al., n.d.; Biddle, 1990; *idem*, 1991).

While this study is therefore just a small contribution to the vast amount of work that has yet to be done in regard to understanding the true development of the site, we hope that some further light may be cast on the history of Christianity's holiest shrine.

S.G. and *J.E.T.*
May 1991

Acknowledgements

We would like to thank those who have aided us in completing this study, in particular: Archibald Walls, who provided us with very important unpublished photographs and drawings, gave us access to his file on the subject of the Chapel of St. Vartan excavations and spared much time in discussing the area; Magen Broshi, who has generously given us many photographs and plans, and discussed his work on the same site; and Svend Helms, who was willing to talk about the subject at great length, and has provided photographs and his drawing of the ship.

We would also like to thank: Bishop Guregh Kapikian, George Hintlian, Theodossius Mitropoulos, Theodore Skinner, Greville Freeman-Grenville, Robert Pitt, Graeme Auld, J.P.Ross, Lionel Casson, A.J.Parker, Amos Kloner, the late Father V. C. Corbo, John Kane, Eliot Braun, George Kahvedjian (of Elia Photo, Jerusalem), Rupert L. Chapman, Sally Humphreys, Kay Prag, Nikos Kokkinos, Richard Harper, Piotr Bienkowski, Honor Frost, Fanny Vitto, Lucien Basch, R.S.O.Tomlin, Bertrand and Paula Lazard, Sean Kingsley and Father Marcel Sigrist for providing help and information.

We are grateful to the Palestine Exploration Fund, for enabling us to use unpublished data from their archives, and to the Institute of Historical Research (University of London) for the Twenty-Seven Foundation Awards which helped us with the costs of our work.

Finally, a special word of thanks to Terence Mitchell, Editor of the PEF Monograph Series, and to Yolande Hodson, Honorary Secretary of the PEF, for seeing our manuscript carefully through to publication.

List of Illustrations

Chronology of the Church of The Holy Sepulchre

9th – 8th centuries B.C.	Site used as a quarry.
7th – 6th centuries B.C.	Intermittent settlements and some tombs occupy the area.
5th century B.C. – 1st century A.D.	Area cultivated and used for tombs. Some quarrying occurs.
A.D. 41–43	Area included within the city by the 'Third Wall' built by Herod Agrippa. Contents of the tombs removed.
after 135	Temple complex dedicated to Venus built by Hadrian.
325	Temple of Venus torn down by order of the emperor Constantine. New Christian structures begun.
335, September	Constantinian basilica dedicated.
614, 4 May	Persian army under Chosroes Parviz sacks Jerusalem and loots the Byzantine complex.
c.629	The Abbot Modestus of the Monastery of Theodosius makes restorations to the buildings and adds new structures.
1009, 18 October	Caliph Hakim extensively damages and loots the complex. Constantine's basilica destroyed, never to be rebuilt.
1042	Restorations conducted by Constantine Monomachus.
1048	The Rotunda built.
1099, 15 July	Crusaders conquer Jerusalem under Godfrey de Bouillon and shortly thereafter undertake reconstruction work on the site.
1149, 15 July	The Crusader Church of the Holy Sepulchre consecrated.
1555	Edicule rebuilt by Boniface of Ragusa.
1719	Franciscan restorations conducted.
1808–10	Fire greatly damages the interior of the Rotunda.
1867, March – 1868, September	Dome of Rotunda replaced.
1927	An earthquake causes extensive damage.
1934	A fire causes further damage.
1949	Another fire partly destroys the lead roof of the Dome.
1959	Agreement reached between the communities of the Church to undertake a repair programme.
1960	Archaeological investigations, repairs and reconstruction operations begin.

Chronology of Principal Ancient Sources

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Introduction

The Church of the Holy Sepulchre is located in the heart of the Christian Quarter in the Old City of Jerusalem (Fig. 1). It encompasses a plethora of sites sacred to Christians, most importantly the traditional place of Christ's crucifixion (the Rock of Calvary) and his tomb – the 'holy sepulchre' itself – within the Edicule. The buildings in this region have been described, measured and commented upon ever since the original Christian structures were erected there in the 4th century. Of course, the architectural complex at that time was radically different from that which exists today, which is a largely medieval edifice (Fig. 2). The Church of the Holy Sepulchre did not exist, strictly speaking, before the 12th century, when the Crusaders restored and expanded upon the ruins of the Byzantine structures. These themselves did not constitute a single church, but were an amalgam of ecclesiastical buildings, notably: the Constantinian basilica called the Martyrium (dedicated in 335); a circular edifice surrounding the tomb, called the Anastasis, probably dating from the time of Constantine's son Constantius II (337–61); and the Church of Golgotha, dating from the time of abbot Modestus (c.629), which incorporated the Rock of Calvary.

The modern critical study of the Church of the Holy Sepulchre began in the 19th century. An essay of G. Williams (1849) in his second volume on Jerusalem discussed the architectural history of the church. It included a plan of the church drawn by R. Willis, based on sketches made by J.J.Scoles in 1825. In 1860, De Vogüé published his watershed examination of the churches of the Holy Land, in which the church was given a lengthy analysis (De Vogüé, 1860, pp.118–232). A plan of the church was prepared in 1865 by Charles Wilson during the Ordnance Survey of Jerusalem (Wilson, 1866). While this plan was more accurate and detailed than the one by Scoles, Wilson was not satisfied with the results. In a letter to Hayter Lewis, dated August

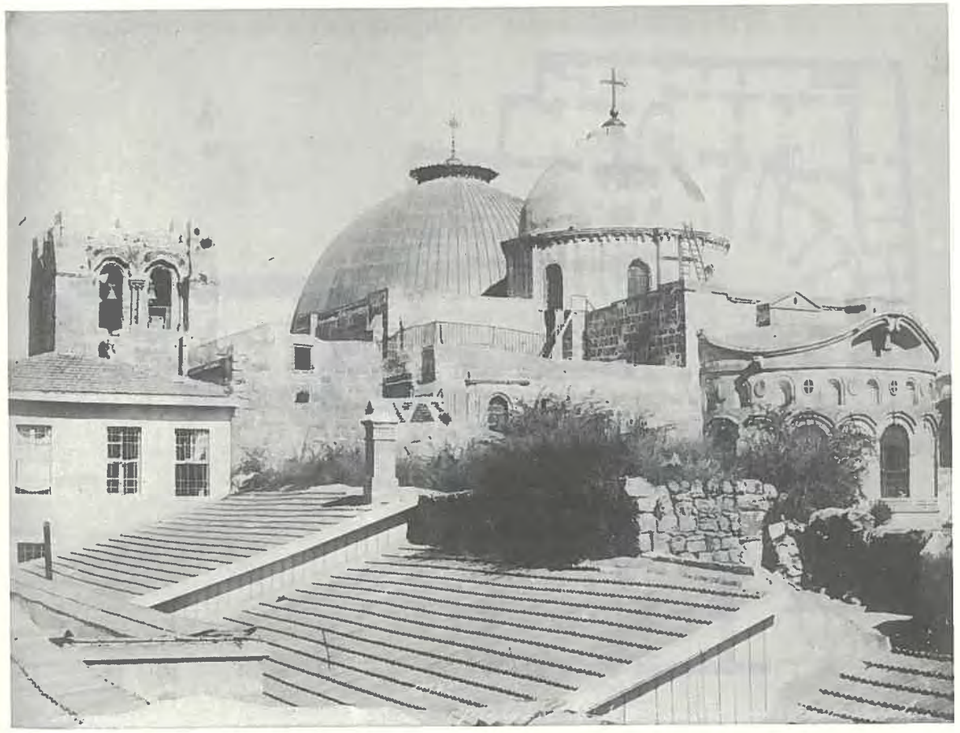


Figure 1. General view of the rooftops of the Church of the Holy Sepulchre in a photograph taken by Zangaki (No.1177) in the 1890's. (courtesy of the Palestine Exploration Fund).

23rd 1889, he wrote: 'my men were not accustomed to survey interiors and I remember they complained of the difficulty of making a good plan of the church. I have never been quite satisfied with that plan, which was hurriedly made and is incomplete in many respects' (PEF Archives/LEW/1/251). In the last two decades of the century, Conrad Schick began exploratory investigations at sites around the perimeter of the church (Schick, 1885, 1887, 1889A, 1889B, 1898) and made detailed plans and notes pertaining to the area. European and American interest in this most sacred of Christian holy places was thus aroused (cf. Jeffrey, 1895, 1910, 1919; Duckworth, 1922) but it was not until L. H. Vincent and F. M. Abel (1914) produced their studies of the history and archaeology of the site of the church, that anything comprehensive was written about it. The work of Vincent and Abel was extremely influential, and became the starting point for all subsequent discussions about the church and its history, which proceeded throughout the first part of this century (Marangoni, 1937; Grabar, 1946; Wistrand, 1952; Parrot, 1955 and cf. Baumstark, 1915). Vincent and Abel, however, and all others who attempted to make sense of the history of the place, were severely handicapped in their research by the fact that no archaeological excavations had been undertaken in the church itself. Moreover, the church was in an extreme state of dilapidation. An earthquake in 1927 and a fire in 1934 had caused terrible damage to the building which was already in danger of collapsing (see Harvey, 1935). After another fire, in 1949, destroyed a part of the lead roof of the Rotunda, the Jordanian Government secured an agreement between the three major communities who administer the site – the Roman Catholics, the Greek Orthodox and the Armenian Orthodox – that restoration was required (cf. Freeman-Grenville, 1987, p.188). This, it was decided, would also provide the opportunity for archaeological excavations within the church itself. Disagreements between the communities, however, caused considerable delays to this work, but an intervention by King Hussein led to the commencement of restoration, and excavations began in 1960.

Since 1960, numerous archaeological investigations have been carried out in various parts of the church complex. Much of this work has employed techniques which do not meet modern archaeological standards (cf. Chapman, 1986). The methods used include the clearance of fills from above ancient architectural foundations without proper stratigraphic controls and proper documentation procedures, and the random collection of artefacts. It is unfortunate that only a very small quantity of potsherds have been published after almost three decades of excavations (e.g. Corbo, 1982, Photos 24–5; Broshi and Barkay, 1985, Fig. 3). Although stratigraphic investigations in the church are difficult because, as V. C. Corbo (1984, p.416) points out, 'non esiste una vera stratigrafia di livelli di occupatione, ma solo una somiglianza stratigrafica di livelli di riempiture, quasi sempre ribaltati'[1] (see also Corbo, 1988, p.419), this does not justify ignoring stratigraphy altogether, as some excavators appear to have done.

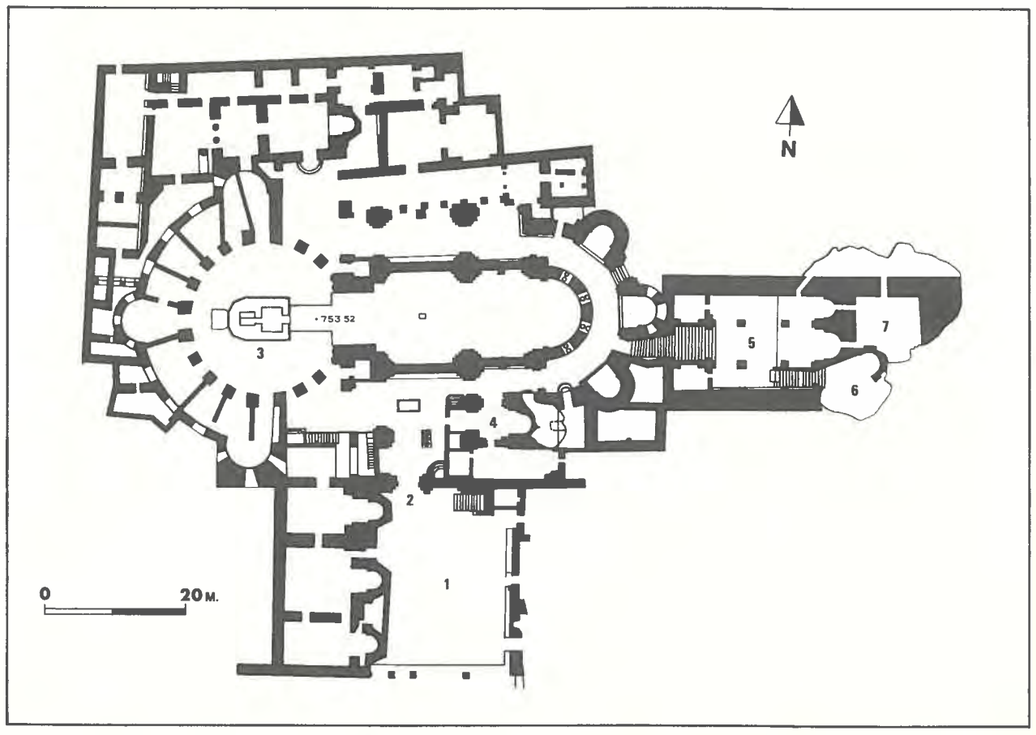


Figure 2. General plan of the Church of the Holy Sepulchre: (1) forecourt; (2) main entrance; (3) Edicule; (4) Calvary; (5) Chapel of St. Helena; (6) Cave of the Invention of the Cross; (7) Chapel of St. Vartan. (S.Gibson).

Although archaeologists and historians have been hampered by the need to make sense of excavated material and reports which are sparse and at times confused, they have nevertheless attempted anew to clarify the architectural history of the area. In 1972, Charles Coüasnon (1974), the Roman Catholic architect of the Church of the Holy Sepulchre, delivered his Schweich lectures to the British Academy about the restorations and his interpretation of the new evidence on the history of the buildings. Corbo (1981–2) has made a valiant attempt to create some order out of the confused archaeological history of the church and his detailed maps and discussions have become invaluable tools for understanding it. However, Corbo's synthesis of the work is not yet the final word on the matter. Articles published since Corbo demonstrate that there is considerable room for widely differing interpretations, and show that many important questions about the site remain unanswered (cf. Díez, 1984; Broshi and Barkay, 1985; Bahat, 1986; Freeman-Grenville, 1987, and see Corbo, 1984, *idem*, 1988). As stated in the Preface, we shall here examine in detail only a few of the key problem areas in the church, most notably the Chapel of St. Vartan and the case of the Jerusalem ship drawing, and hope that it may encourage further fruitful debate on the subject.

We would like also to make a suggestion. A number of methods exist for archaeological work within standing structures which could be utilised during future programmes of investigation in the church. One of these is structural analysis, a method of looking at types and qualities of masonry within their sequence of construction. This method was first advocated with success during the investigation of Byzantine structures in the Golan Heights (Dauphin and Schonfield, 1983, pp.191–2). Similar work has been carried out on medieval buildings in villages north of Jerusalem (Pringle and Leach, 1983, pp.141–7). A programme of structural analysis carried out with a select number of stratigraphic probes in problematic areas beneath the church floor could provide the vital data necessary to help elucidate the archaeological history of the area.

Part One

CHAPTER ONE

The Excavations in the Chapel of St. Vartan

History of Excavations 1970–1980

The Chapel of St. Vartan is located to the east of the Chapel of St. Helena, and is not usually open to public view. It is a consecrated area of archaeological excavations and belongs to the Armenian Orthodox Patriarchate.

The Chapel of St. Helena, which the Armenians refer to as the Chapel of St. Krikor (Gregory), is located at the eastern end of the Church of the Holy Sepulchre and can be reached from the main church complex by a steep flight of steps (Fig. 2:5; 3:1). On the east side of the chapel there are two rectangular altars: the altar in the northern apse is dedicated to the penitent thief, St. Dismas, and the altar in the southern apse to St. Helena, mother of the emperor Constantine. Two storerooms flank the steps at the western end of the chapel. Four short columns, with large ornamental capitals, support the ogival arched roof of the chapel, which has a central dome pierced with windows. The capitals are probably of Umayyad date (Coüasnon, 1974, p.61) and were reused within the present medieval structure. The sur-

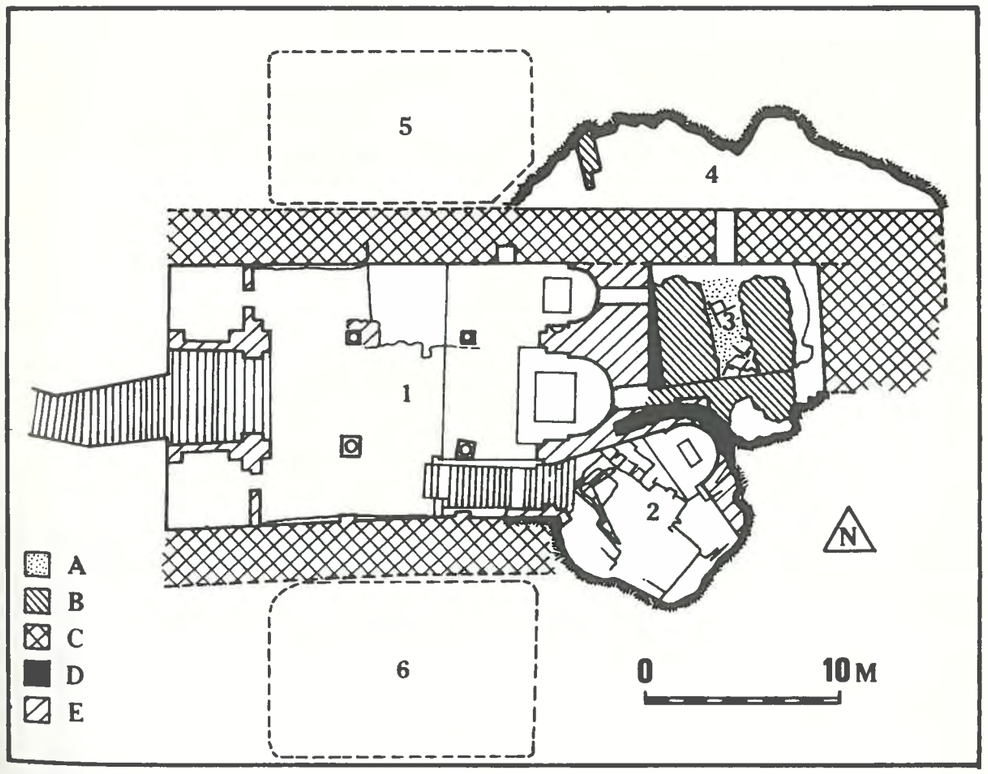


Figure 3. Plan showing: (1) Chapel of St. Helena; (2) Cave of the Invention of the Cross; (3) area of excavations, now the Chapel of St. Vartan; (4) area of excavations north of the Chapel of St. Vartan; (5, 6) cisterns (cf. Schick, 1885, Pl. VII). Dating as follows: (A) Iron Age; (B) Hadrianic; (C) Constantinian; (D) 11th century; (E) 12th century. (S.Gibson).

faces of the walls in the chapel were originally covered with a coat of white plaster. Medieval graffiti have been observed on the plaster surfaces (Clermont-Ganneau, 1899, p.103; Macalister, 1901, pp.19–20). The plaster has been removed and the masonry of these side walls can now be seen. For many years the floor of the chapel was covered with a levelled surface of small stones held together with mortar (Fig. 4). This surface of small stones is a fill which originally existed below a flagstone pavement, which was removed during the restorations in the chapel in 1929 (Harvey, 1935, p.8, Fig. 44; Parrot, 1955, Pl.5). Excavations were carried out below this surface of stones following an agreement concerning the floor of the chapel made between the various church authorities in June 1964 (Tleel, 1972–1973, p.38: III, 2a). These excavations revealed bedrock, with a flat rock-cut surface about 15–30 cms. below the level of small stones and mortar.[2] Traces of deeper rock-cuttings were found in the north-eastern part of this excavation (see Fig. 5). A plan of these excavations has not yet been published. The present day floor of the chapel is decorated with a mosaic pavement made by the mosaicist Hava Yoffe on the basis of traditional Armenian designs and motifs. In the south-eastern corner of the chapel, a flight of steps leads down to a rock-cut cave known as the Chapel of the Invention of the Cross.

Figure 4. The floor of small stones in the Chapel of St. Helena, towards the east, in a photograph taken in 1964 by C.Coüasnon and given to A.Walls (Courtesy of the École Biblique et Archéologique Française de Jérusalem).

In 1970 the Armenian Patriarchate decided to breach the eastern wall of the Chapel of St. Helena in order to determine whether or not bedrock (cf. Vincent and Abel, 1914, Figs. 84–5) or some unexplained space lay behind[3]. Digging was carried out by a group of labourers according to directions issued by Archimandrite (now Bishop) Guregh Kapikian. A tunnel (2.00m. long, 1.15m. wide and 2.20m. high) was cut through a built recess which was located in the back wall of the southern apse. This recess was originally investigated and first described by Schick (1898, p.147). It soon became clear that a massive fill of rubble and soil lay behind the chapel, in a space that was clearly the northern extension of the Cave of the Invention of the Cross (Figs. 3 and 6). The remains of an ancient wall (Fig. 6: wall 1) were discovered immediately within the opening, and two of its stones were subsequently removed in order to facilitate the clearance of fill behind. These are the 'test borings' mentioned by Coüasnon (1974, p.41). The first stage of the excavation consisted of the clearing of fills along the eastern face of the chapel wall, creating a space 4.40 x 3.00 m. wide and 2.75 m. high. A wall of cement blocks was then built to support the fills located further east, and the space was covered over with a cement ceiling. Further clearance work was undertaken by the Armenian Patriarchate in 1971 along

Figure 5. Rock-cuttings revealed below the floor of the Chapel of St. Helena during excavations in 1964, in a photograph taken by C.Coüasnon and given to A.Walls (courtesy of the École Biblique et Archéologique Française de Jérusalem).

the southern face of wall 4 (Fig. 6) towards the east and along wall 6 to the top of the eastern end of wall 1 (Fig. 17). The clearance of the upper fills within this area was undertaken without archaeological supervision. Walls 2, 3 and 5 were not visible at this stage of the work.

In October 1971, Archibald Walls and Svend Helms of the British School of Archaeology in Jerusalem supervised the general progress of the excavations and carried out an architectural survey (Bennett, 1974, p.307). They were allowed only to observe the work, however, and were unable to dictate controlled methods of archaeological recovery (Helms, 1971). The excavation of a trench (2.00 x 5.90 m. in width) immediately west of wall 6 revealed the eastern face of wall 2 (Fig. 13). The trench was excavated to a depth of 2.80 m. and a shaft (2.00 x 0.90 x 1.85 m.) was excavated at the northern end of the trench down to bedrock. In November 1971, a ship drawing was found on a stone built into the eastern end of wall 1. Plans and elevations of the area were prepared by Walls in December 1971. The baulk sections of the trench were drawn at the same time by Helms. During 1972, the wall of cement blocks was dismantled and a ceiling, reinforced with iron girders, was built over the entire area. Further excavations were carried out by the Armenian Patriarchate without archaeological supervision during the years 1972–1975, revealing the upper parts of walls 3 and 5.

The Studium Biblicum Franciscanum in Jerusalem began supervising the clearance of the fills (4.30 m. thick) located between walls 2 and 3 in October 1975 (Corbo, 1984, p.413). F. Díez Fernandez (1984, p.33) has stated that he was in charge of these excavations from October 1975 to 1981, but Corbo (1984, p.413) has cast considerable doubt on this statement. Judging by Corbo's remarks, Bishop Kapikian asked the Studium Biblicum Franciscanum to participate in the work, and Díez served only as a member of the team. Shortly afterwards, in November 1975, Magen Broshi was asked by Bishop Kapikian to supervise the progress of the excavations. Broshi's association with the excavations continued until February 1976. Since a large part of the fill had already been removed by that time, a sampling method was adopted and potsherds were collected separately from various stratigraphical locations (cf. Corbo, 1988, p.395). A detailed plan of the archaeological remains was prepared by Shimon Gibson in December 1975 and a final revised plan was drawn in August 1976. The drawing of elevations and sections was carried out during January 1975 and August 1976 (Figs. 7–10). In August 1976, the Armenian Patriarchate had wall 4 breached with the intention of excavating the area behind. This

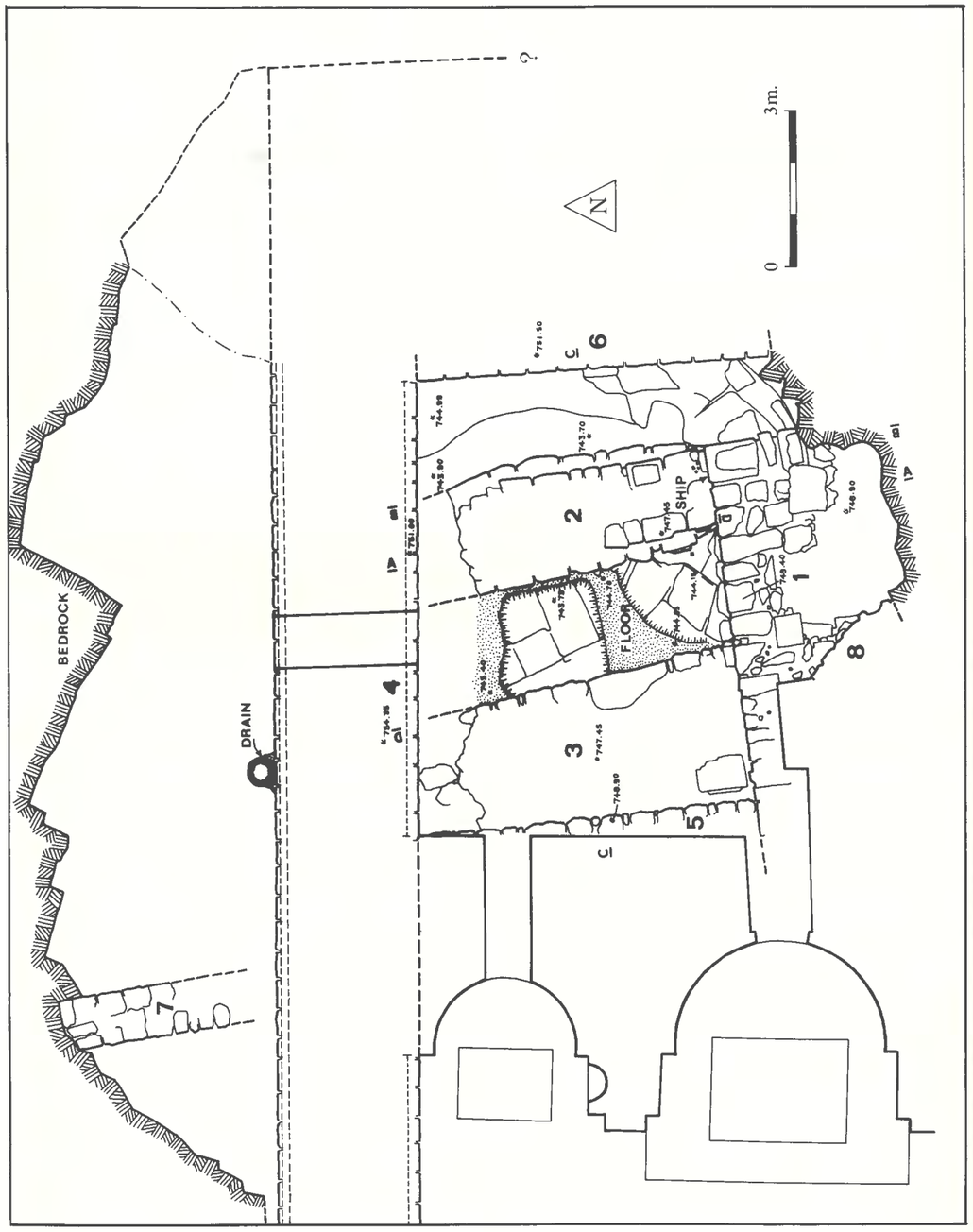


Figure 6. Plan of the excavations in the area of the present Chapel of St. Vartan (S. Gibson).

tunnel was 2.82 m. long, 1.00 m. wide and 2.00 m. high. The excavations in the space behind wall 4 were concluded by the Armenian Patriarchate during the years 1977–1980, with some archaeological help provided by Díez (1984, p.33). A plan of the northern extension of this excavation area was prepared by Gibson in April 1978. Additional measurements and recordings were carried out by Gabriel Barkay at various occasions between November 1977 and March 1981 (Broshi and Barkay, 1985, p.113, n.20).

Many discussions concerning the ship drawing and the area of the excavations have now appeared (Bennett, 1974; Broshi, 1976B, 1977A, 1977B, 1977C, 1978; Testa, 1976; Helms, 1980; Corbo, 1981–2, 1984; Díez, 1984; Broshi and Barkay, 1985). In these publications, attempts have been made to piece together the results of the excavations and to clarify the date and significance of the ship drawing. There have not yet been any Armenian preliminary reports or discussions, and the task of presenting the final report rests with Bishop Kapikian. As stated above, all of the archaeologists who have had some involvement with the excavations have been present as observers and invited guests of the Armenian Orthodox Patriarchate. Interest in the archaeological history of the Church of the Holy Sepulchre has led them to publish their conclusions and some finds, with the permission of the Armenian Patriarchate, but this piecemeal publication history has resulted in confusion. Broshi and Barkay (1985) have made the only serious attempt to synthesise all the information available to them and to present it in a coherent form. Their report, however, did not include important documentary evidence from the earlier 1971 excavations, notably the original photographs of the ship drawing and the baulk sections of the trench supervised by Walls and Helms.

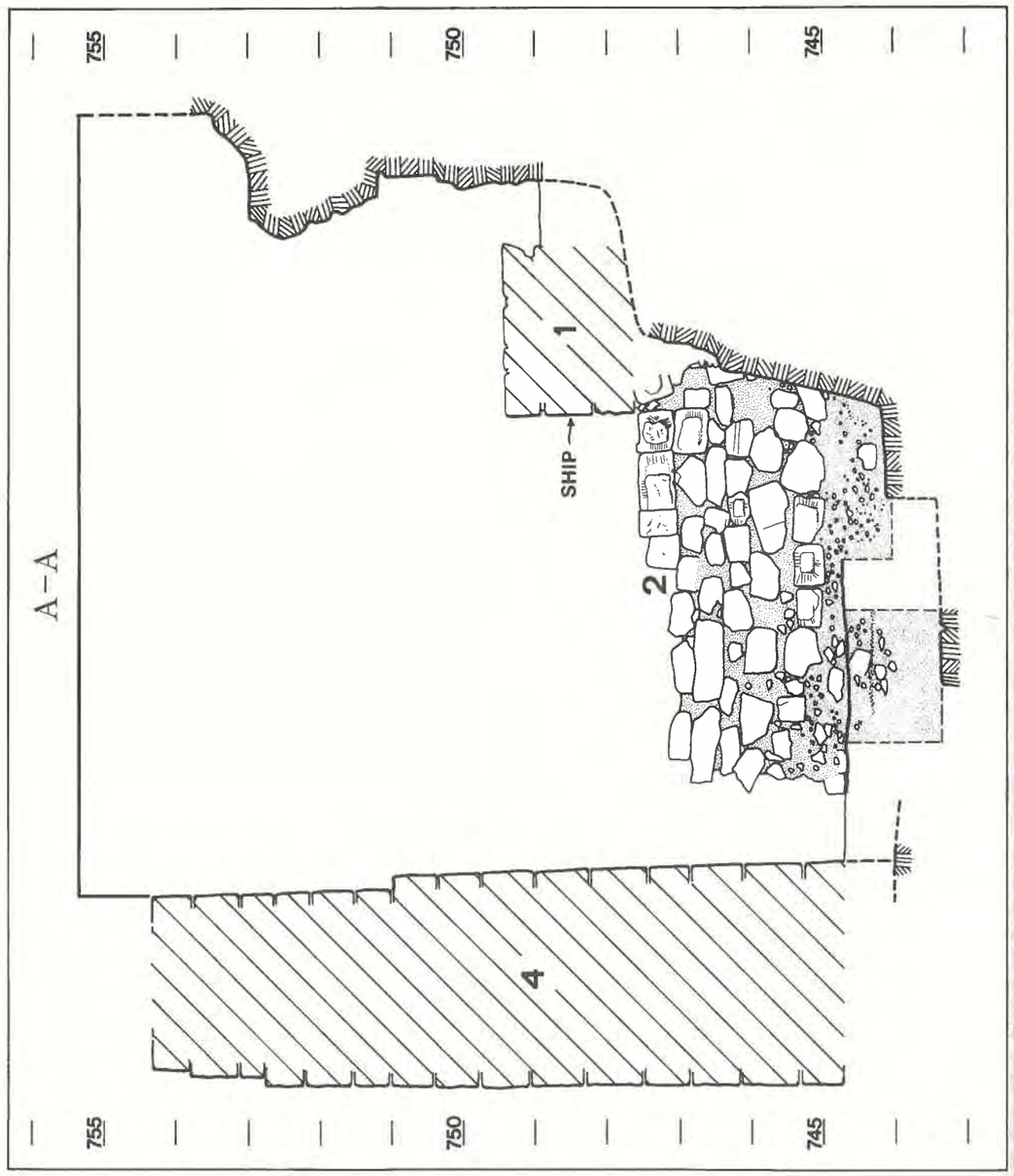
Since 1980, the area of the excavations has been consecrated as a chapel named after St. Vartan and the Armenian martyrs. An additional tunnel was cut from the area of the new chapel through to the back wall of the northern apse, behind the altar of St. Dismas, in the Chapel of St. Helena. All of the ancient walls found during the excavations have been restored and strengthened with cement, as have the sides of the subfill of the Iron Age floor. A modern floor has been built over the tops of walls 2 and 3 (Fig. 6), which are now located in the cellar of the new chapel. Access to this cellar is by a trap door located in the floor of the north-western corner of the chapel. An iron flight of steps descends to the excavation area below. A modern altar has been erected at the eastern end of the chapel. The tunnel in the north wall (wall 4) was enlarged to allow easy access into the northern extension of the excavations. This excavation area can be viewed from a platform built immediately within the opening. It should be pointed out that the 'Byzantine mosaic' which visitors may see in the northern extension of the excavations is actually a modern piece made by H. Yoffe, based on a few small mosaic fragments and tesserae found during the excavations. From this northern extension yet another tunnel has recently been cut towards the Chapel of St. Helena.

The Quarry

Prior to the earliest construction activities in the area, the site was used as a quarry. The quarried cavity has been subdivided by a number of ancient walls into three separate spaces: the Chapel of the Invention of the Cross, the Chapel of St. Vartan and the nameless northern space behind wall 4 (Figs. 2–4 respectively). This quarrying is part of general stone working activities known in the region of the church (for a full discussion, see below pp. 51–56).

The quarry was used for extracting blocks of *meleke* limestone[4]. Part of it was subterranean with an overhanging ceiling of *mizzi ḥilu* limestone which was left unquarried. The approximate measurements of the quarry are 30 metres from east to west and 26.5 metres from north to south. Access to the quarry was from the west (Fig. 36). The western limits of the quarry are located below the northern aisle of the Chapel of St. Helena to the west of the altar of St. Dismas, where evidence of quarrying was discovered during excavations below the floor of the chapel in 1964. These quarry activities are located at a level with an elevation of 748.15 metres above sea level (all elevations given here are based on Corbo's 0.00 datum, being the equivalent to Vincent's elevation of 753.52)[5]. The flat rock-cut surface which is located immediately to the south and east, at a level with an elevation of 748.70 (Corbo's spot height of −6.00 for this rock level, i.e. elevation 747.52, is incorrect, see Corbo, 1981–2, Pl. 67), is probably to be associated with the construction of the later medieval chapel (see below, pp. 23–24).

From the Chapel of St. Helena, the bedrock surface drops down towards the east to the lowest part of the quarry in this area, which is located beneath the present Chapel of St. Vartan at a level with elevations from 743.70 to 743.73 (Fig. 36)[6]. The eastern part of the quarry in this area is located above a ledge with an elevation of 744.95. The configuration of the bedrock surface in the extreme eastern part is unknown because the space is now blocked by wall 6 (Fig. 6). The northern limit of this part of the quarry is above a ledge, under wall 4, with an elevation of 744.00. The southern part below wall 1 and within the Chapel of the Invention of the Cross, is located above a ledge with elevations ranging from 744.92 to 746.40. The quarry has a total depth of 10.90 metres from the top of the overhanging rock ceiling to the lowest part of the quarry floor. The



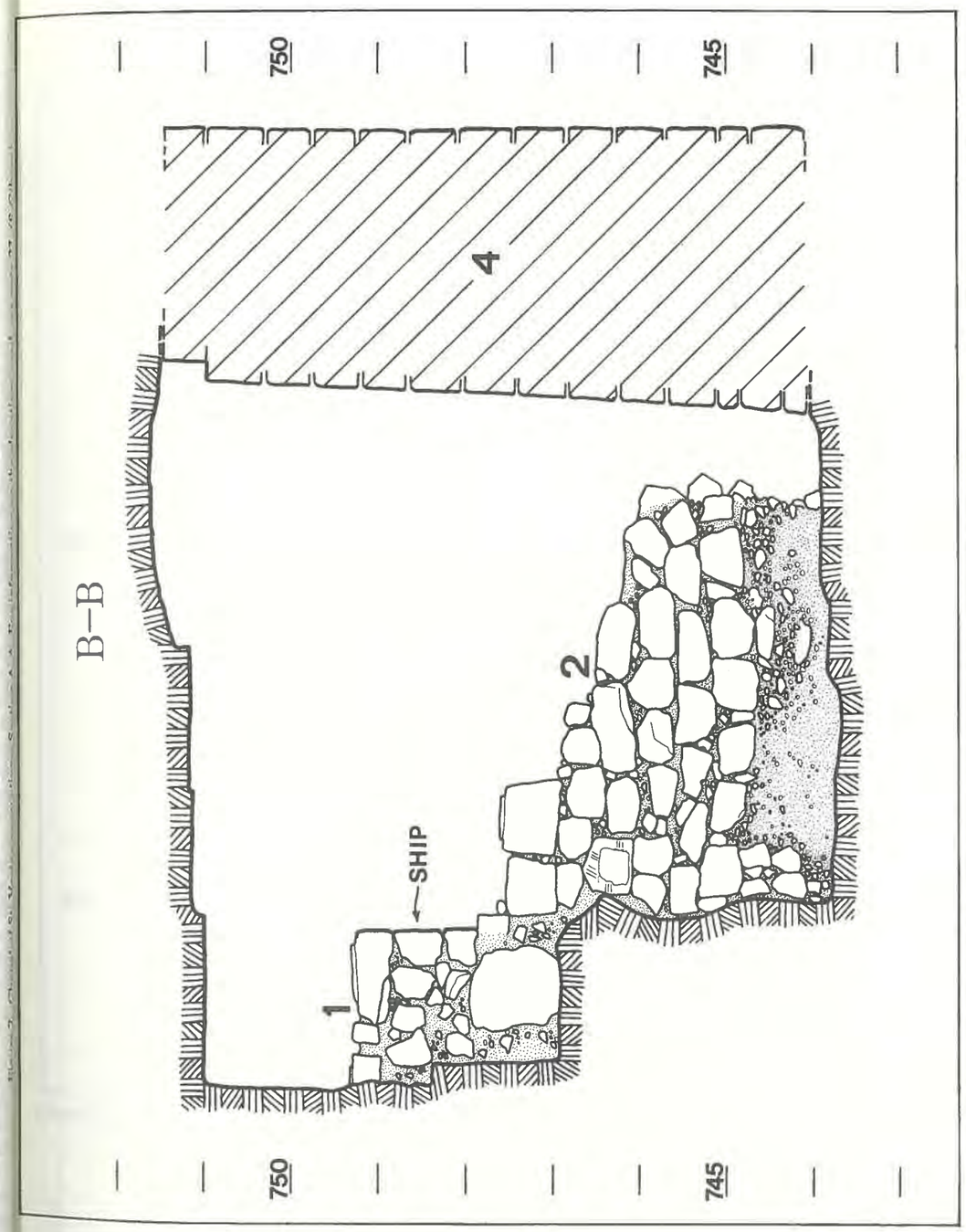


Figure 8. Chapel of St. Vartan excavations: Section B-B. For information on the elevations used, see note 27. (S. Gibson).

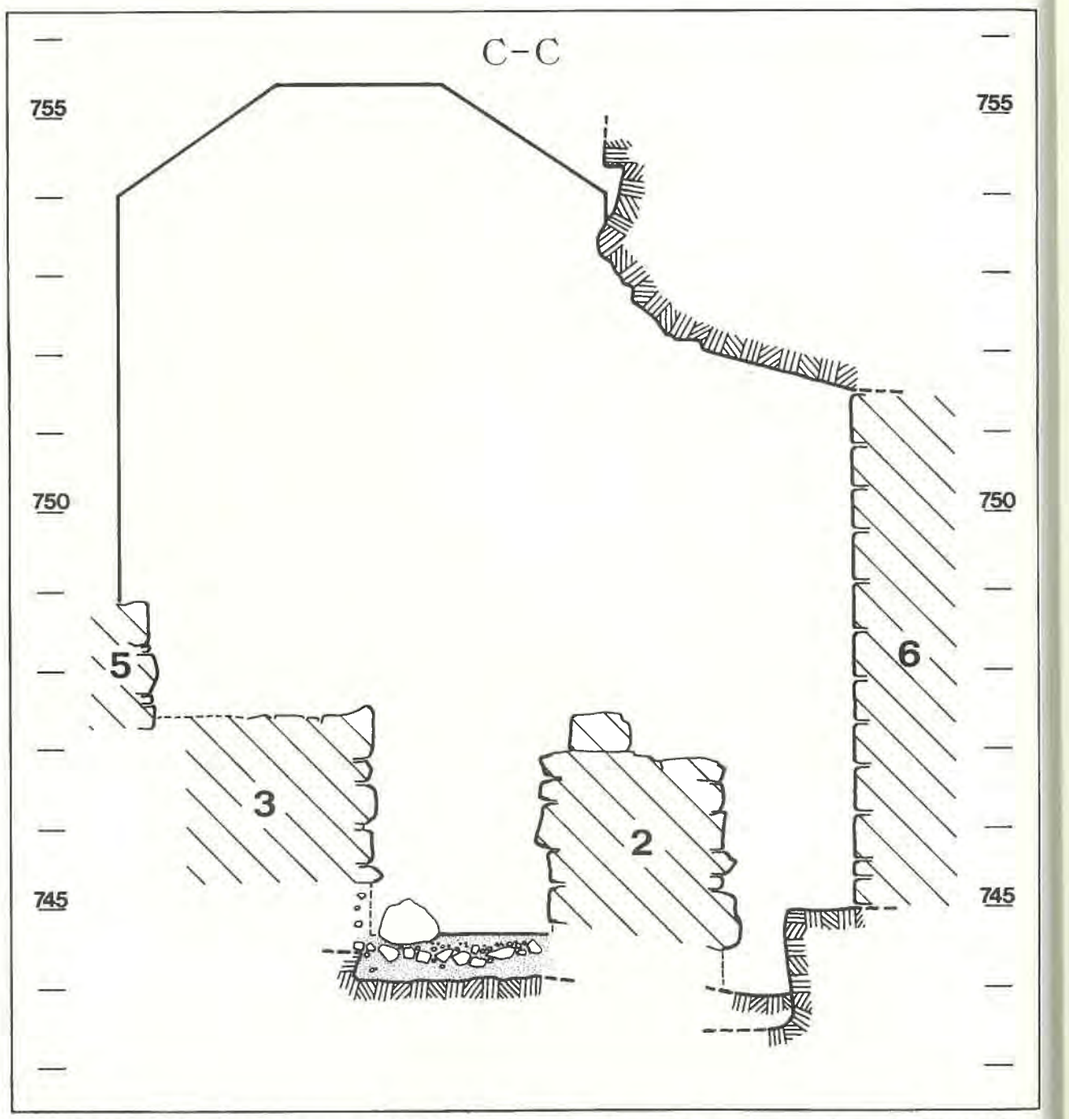


Figure 9. Chapel of St. Vartan excavations: Section C-C. For information on the elevations used, see note 27. (S.Gibson).

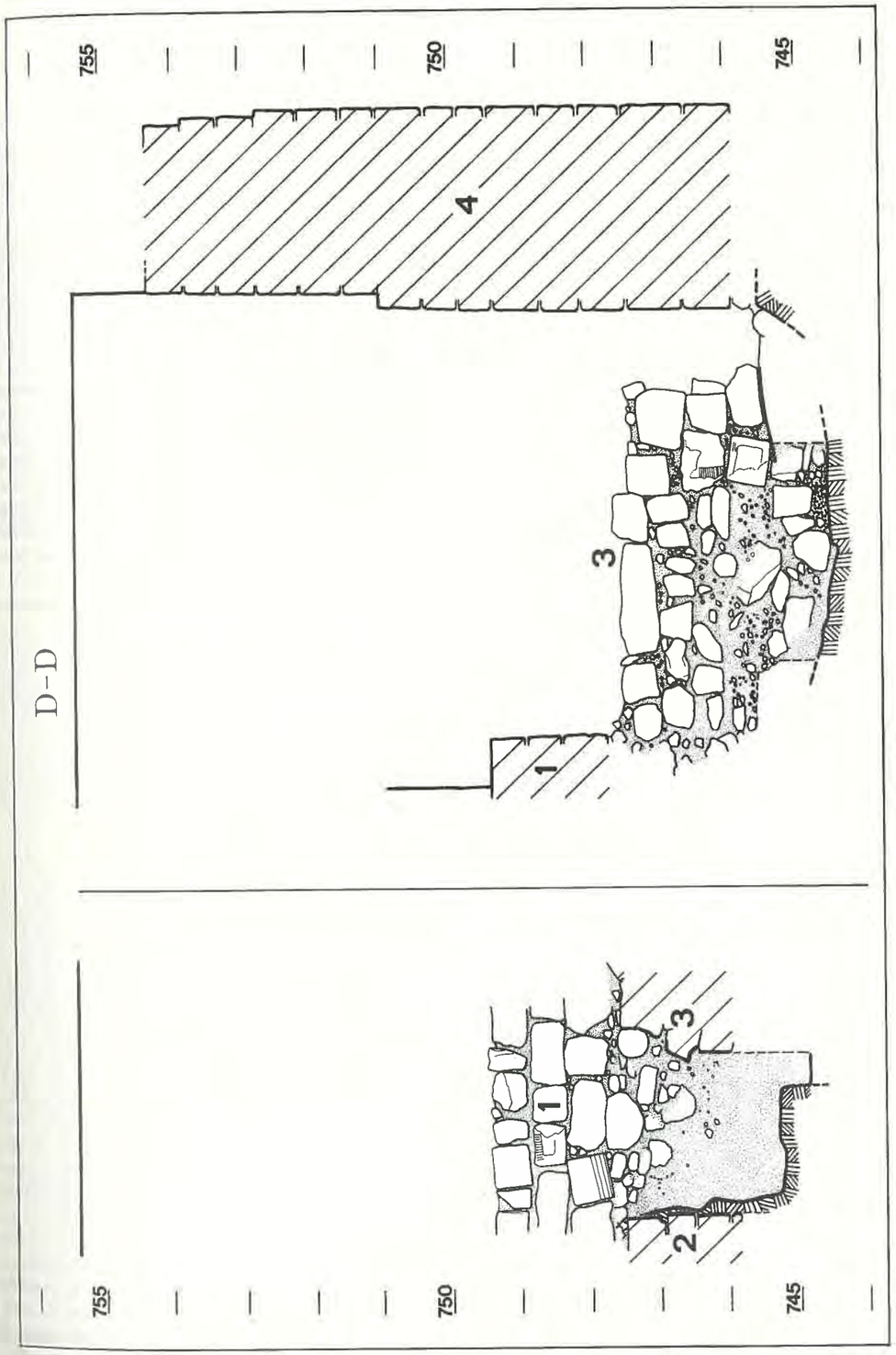


Figure 10. Chapel of St. Vartan excavations: Section D-D. For information on the elevations used, see note 27. (S.Gibson).

rock ceiling on the eastern side of the quarry is 3.10 m. thick. The level of the upper edge of the ceiling has elevations from 752.90 to 754.60, i.e. with spot heights of +0.62 and +1.08 m above the 0.00 datum mark (=753.52) in the main church building.

Blocks of *meleke* limestone were extracted from the quarry[7] and their traces can be seen on the surfaces of floors, walls and the ceiling in the Chapel of St. Vartan (Corbo, 1981–2, Pl.57; Broshi and Barkay, 1985, Pls. 14–15A). These quarry traces include separation channels cut into the stone, semi-detached blocks, broken stumps and negative impressions of blocks removed (Fig. 11). The hewn stones were removed vertically from the walls of the quarry and horizontally from the floors. Sizes of stones removed are given by Broshi and Barkay (1985, p.116).

The remains of a beaten earth floor were uncovered in the lower parts of the quarry in the Chapel of St. Vartan (Broshi, 1976A; Broshi and Barkay, 1985, pp.111–112). The floor surface is at a level with an elevation of 744.70 m. and seals a fill of *terra rossa* soil and quarry chips. The floor has a maximum thickness of 1.27 m. Potsherds found sealed below the floor include an ostracon of the late Iron Age (Broshi and Barkay, 1985, Fig. 3). A C14 testing of the ashes from the surface of the floor has given the following determination: 1053 (± 210) B.C. (Broshi and Barkay, 1985, p.111). Iron Age pottery was also found in fill deposits close to the quarry floor in other parts of the cavity (Helms, 1971; Broshi and Barkay, 1985, p.116; Corbo, 1981–2, pp.112–113). The rock-cut ledges which exist to the south and east may determine the original maximum extent of the beaten earth floor towards the south-east. The northern end of this floor may originally have terminated near the rock ledge below wall 4, but this is hypothetical. Broshi and Barkay (1985, pp.118–119) date the earliest use of the quarry to the 9th – 8th centuries B.C. and the floor here to a time of extra-mural suburbs, located to the north of the city, from the late 8th – early 6th century B.C. (Barkay. 1985–86, p.39). These chronological conclusions have been contested by Corbo and by Díez. According to Corbo (1981–2, pp.112–113) the Iron Age pottery can only be used to date the earliest use of the quarry, which continued to be used down to the 1st century B.C. before being converted into

Figure 11. Quarrying revealed during the 1971 excavations in the area of the present Chapel of St. Vartan. (courtesy of A.Walls).

an area of rural gardens (cf. Corbo, 1984, p.412). He does not believe that the floor dates from the Iron Age, nor does he think that the C14 determination is of any value. Corbo suggests that the floor originally extended only between walls 2 and 3 and should be dated to the time of the construction of these two walls. Díez (1984, p.33) does not accept that the quarry was exploited in the late Iron Age. He suggests that the quarry was being used in the Early Roman period at the earliest on the basis of potsherds from this period found mixed with quarry chips and soil on the surface of the quarried bedrock. According to Díez, the Iron Age (and Persian) pottery here was imported from nearby fields to fill the surface space between walls 2 and 3.

The stratigraphical and chronological suggestions made by Corbo and Díez cannot be accepted for this particular part of the quarry. First of all, there is no evidence to suggest that the floor was only a construction surface associated with walls 2 and 3. In fact, the foundations of these walls have clearly been inserted into a foundation trench which, in turn, cut through the eastern and western parts of the floor. The northern extension of the floor was cut during a later stage by the foundation trench of wall 4. Furthermore, the pottery found immediately above the floor and from the floor matrix below can only be dated to the late Iron Age. There is no evidence of Early Roman pottery from below the floor, as Díez suggested. The Early Roman potsherds mentioned by Díez may have been intrusive artefacts from the disturbed portion of the floor. Therefore, the floor must date from a time when the lower parts of the quarry had already been abandoned.

Hadrianic Walls

The earliest architectural features of the excavation area are represented by the dry-built walls 1, 2, 3 and 7 (Fig.6)[8].

Wall 1 has a length of 7.60 m. from east to west (Fig. 6). According to Helms (1971; 1980, p.119) the western end of wall 1 was traced during the 1971 excavations as far as the present stairway leading down to the Cave of the Invention of the Cross. This point could not be confirmed by Walls, who undertook an architectural survey of the area in 1971. According to Walls (personal communication) the western extension of wall 1 was found immediately east of the tunnel which was cut through the wall behind the altar of St. Helena. The eastern end of wall 1 forms a perpendicular corner with an extension towards the south (1.80 m. long) built up against quarried bedrock. Wall 1 has a preserved thickness of 2.43 m.; its total thickness is unknown. The Armenians had the core of wall 1 filled in with a cement plug during an early stage of the work. The foundations of wall 1 were mainly built onto a rock ledge with an elevation of 746.40, which extends towards the south-west as far as the Cave of the Invention of the Cross, where the rock floor has an elevation of 744.35. The northern face of wall 1 consists of three courses of stones with a height of 1.70 m. (elevation 749.40) built above the upper parts of walls 2 and 3. The central part of the northern face of this wall was built above foundation stones resting upon fills of soil (see Fig. 10; Corbo, 1981–2, Photo 105). This area has now been blocked up with cement. Wall 1 was built out of a mixture of field stones of various sizes, with ashlars and other architectural fragments in secondary use. It also includes a Roman ballista ball 24 cm. in diameter. The ashlars include examples of headers and stretchers with chiselled margins and protruding bosses, and a smooth-faced stone upon which is the ship drawing. The architectural fragments include column drums with diameters of 0.42 and 0.52 m. A fragment of an architrave was also found built into the foundations of wall 1. The stone with a chip-carved design of rosettes within a crenellated border (Fig. 12) was added into the western extension of wall 1 by the Armenians. This stone was originally part of a ceiling decoration dating from the Early Roman period (Broshi and Barkay, 1985, p.124, n. 46, Pl. 17:A).

Wall 2 has a length of 4.87 m. from north to south (Figs. 7–8). The northern end of wall 2 was cut by the foundation trench of wall 4. The southern end of wall 2 served as a foundation for part of wall 1 (Fig. 13). The lower part of wall 2 has a thickness of 2.41 m., while the upper part has a thickness of 1.60 m. The foundations of wall 2 were cut into the remains of a beaten earth floor dating from the Iron Age. The eastern foundations were placed on a fill of small stones and soil 93 cm. above bedrock (Fig. 8). The western foundations were placed on a fill, which included portions of the Iron Age floor, about 1.60 m. above bedrock (Fig. 7). Wall 2 was clearly not intended to be freestanding as its construction is not as solid as wall 1. The eastern face of wall 2 consists of 6 irregular courses of stones with chips in the interstices, preserved to a height of 2.80 m. (elevation 747.45). Originally it had a seventh upper course of stones and two of these stones can be seen in the section drawing made by Helms. These two stones were removed by the Armenian Patriarchate during a later stage of the work. The western face of wall 2 consists of 6 irregular courses of stones with chips in the interstices preserved to a height of 2.52 m. Wall 2 was built out of fieldstones of various sizes, including numerous ashlars with chiselled margins and protruding bosses in secondary use. At the time of the 1971 excavations, wall 2 was believed to be a construction which supported a flight of steps leading up to wall 1 (Helms, 1971).

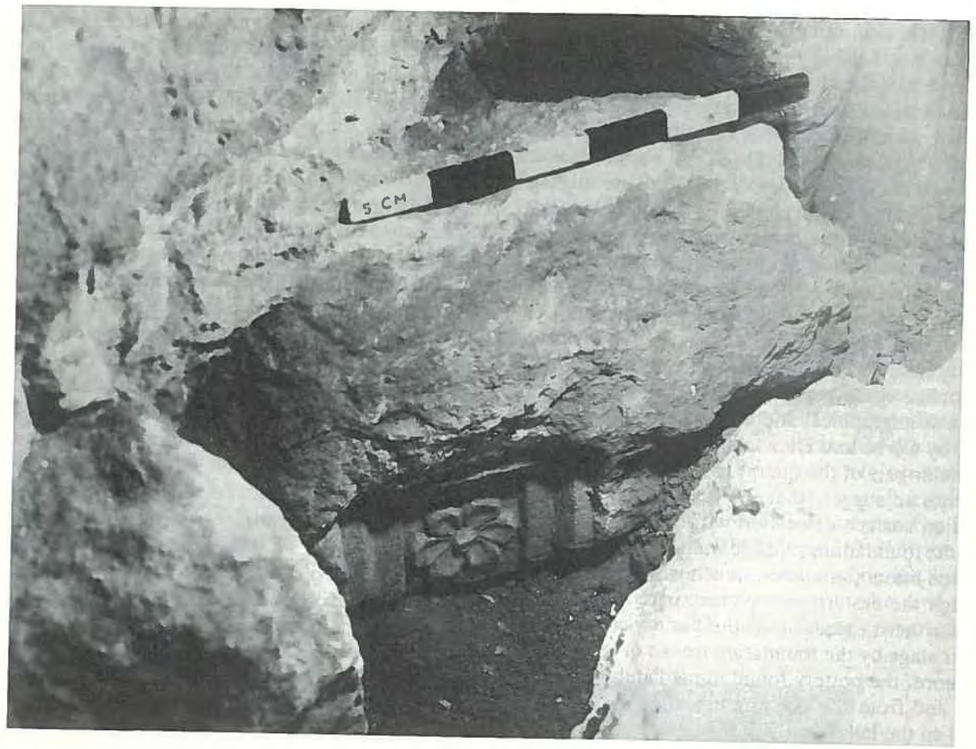


Figure 12. Architectural fragment decorated with a carved rosette, in a photograph taken during the 1971 excavations in the area of the present Chapel of St. Vartan. (courtesy of A.Walls).

Wall 3 has a length of 5.55 m. from north to south. The northern end of wall 3 was cut by the foundation trench of wall 4. The southern end of wall 3 served as a foundation for part of wall 1. The thickness of wall 3 is uncertain. However, an ashlar found in the angle formed by walls 1 and 5 (see Fig. 6) may represent the approximate line of the western face of wall 3. If this is so, then wall 3 may have had a thickness of 2.75 m. The foundations of wall 3 were built above a fill of rubble and soil immediately west of the Iron Age floor, about 1.42 m. above bedrock. The eastern face of wall 3 (Fig. 10) consists of four very irregular courses of stones with chips in the interstices, preserved to a height of 2.00 m. (elevation 747.45). Wall 3 was built out of fieldstones of various sizes, including a few ashlars with chiselled margins and protruding bosses, in secondary use.

Wall 7 was unearthed on the western side of the space cleared to the north of wall 4[9]. This wall has a length of 3.17 m. from north to south, beginning 0.80 m. from the north face of wall 4. The northern end of wall 7 was built up against a wall of quarried bedrock. The southern end was cut by the foundation trench of wall 4. The wall has a thickness of 1.05 m., and was built out of fieldstones and ashlars in secondary use. It exists to a height of 2.10 m.

The pre-Constantinian date of walls 1, 2, 3 and 7 is fairly certain. Three of these walls were clearly cut by the foundation trench of wall 4 (Fig. 14:4), which is undoubtedly Constantinian (see below). In the western baulk section of the area, excavated in 1971 (Fig. 14:3), a layer of reddish soil and packed stones was found covering the north face of wall 1 and extending over the top of wall 2. The date of this layer is uncertain but it may be Hadrianic. Above this was a sequence of fills (Fig. 14:6) extending up to the southern face of wall 4, which are clearly the backfills of the Constantinian foundation trench. Furthermore, these four walls must be of post-Herodian date since they contain numerous Early Roman ashlars, with chiselled margins, in secondary use. Another wall which included such ashlars was uncovered by Lux (1972, Plan 6) below the Church of the Redeemer. It seems likely that these ashlars were taken from the ruins of the Second Wall defensive line, which existed along a rock scarp located to the east of the Church of the Holy Sepulchre. The best parallels for these ashlars with chiselled margins exist in various segments of the First Wall

Figure 13. Chapel of St. Vartan excavations: wall 2, looking south, with the north-eastern corner of wall 1 at the top of the picture. Note the stone bearing the ship drawing in wall 1, just above the measuring pole. (courtesy of A.Walls).

dating from the 1st century B.C. found in the Citadel and further south along the present western city wall of Jerusalem (Broshi and Gibson, forthcoming). Therefore, it seems likely that these walls are Hadrianic.

This date was originally proposed by Broshi (1977, p.351; Broshi and Barkay, 1985, pp.122–124). Helms (1980, p.114) suggested that wall 1 belonged to a Hadrianic building forming the northern enclosure of the Cave of the Invention of the Cross which, he believed, functioned as a pool. This suggestion was based on the assumption that Coüasnon's 'ancient wall' (mentioned by Corbo, 1965, pp.330–331), behind the northern wall of the Cave of the Invention of the Cross, is actually the same as the southern face of wall 1 (but see below, p.23). Corbo (1981–2, pp.112–113) has suggested that walls 2, 3 and 7 are of pre-Hadrianic date, probably from the Early Roman period, and that wall 1 is medieval. He assumes that wall 1 is a continuation of his medieval wall D-E (Coüasnon's 'ancient wall') found in the Cave of the Invention of the Cross (Corbo, 1981–2, Pl.57; Coüasnon's drawings are reproduced in Corbo's Pl.58). According to Díez (1984, p.33) walls 1, 2, 3 and 7 were built after the abandonment of the quarry, which he dates to the mid-1st century B.C. He suggests that they were built during the time of Herod Agrippa (A.D. 41–43) when this area was enclosed within the line of the Third Wall. Díez based his dating on the discovery of what he thought were Hadrianic fills above walls 2 and 3 (see Fig. 14:6). In fact, these are the backfills of the Constantinian foundation trench which contained Hadrianic material, including numerous roof tiles, some of which had been stamped with marks of the Tenth Legion[10].

It is now clear that walls 1, 2, 3 and 7 were built during Hadrianic times as consolidation walls to retain and support a series of fills used to block up the topographical irregularities of the area caused by the Iron Age quarrying activities.

Constantinian Walls

Wall 4 and 6 belong to the foundations of Constantine's basilica, which was dedicated in September, 335 (Vincent and Abel, 1914, II, Pl. XXIII; Crowfoot, 1941, pp.15–17; Coüasnon, 1974, pp.41–44, Pl. VIII; Wilkinson, 1977, p.175, Fig. 7; Corbo, 1981–2, pp.103–113, Pl. 3).

Wall 4 is the eastern continuation of the northern

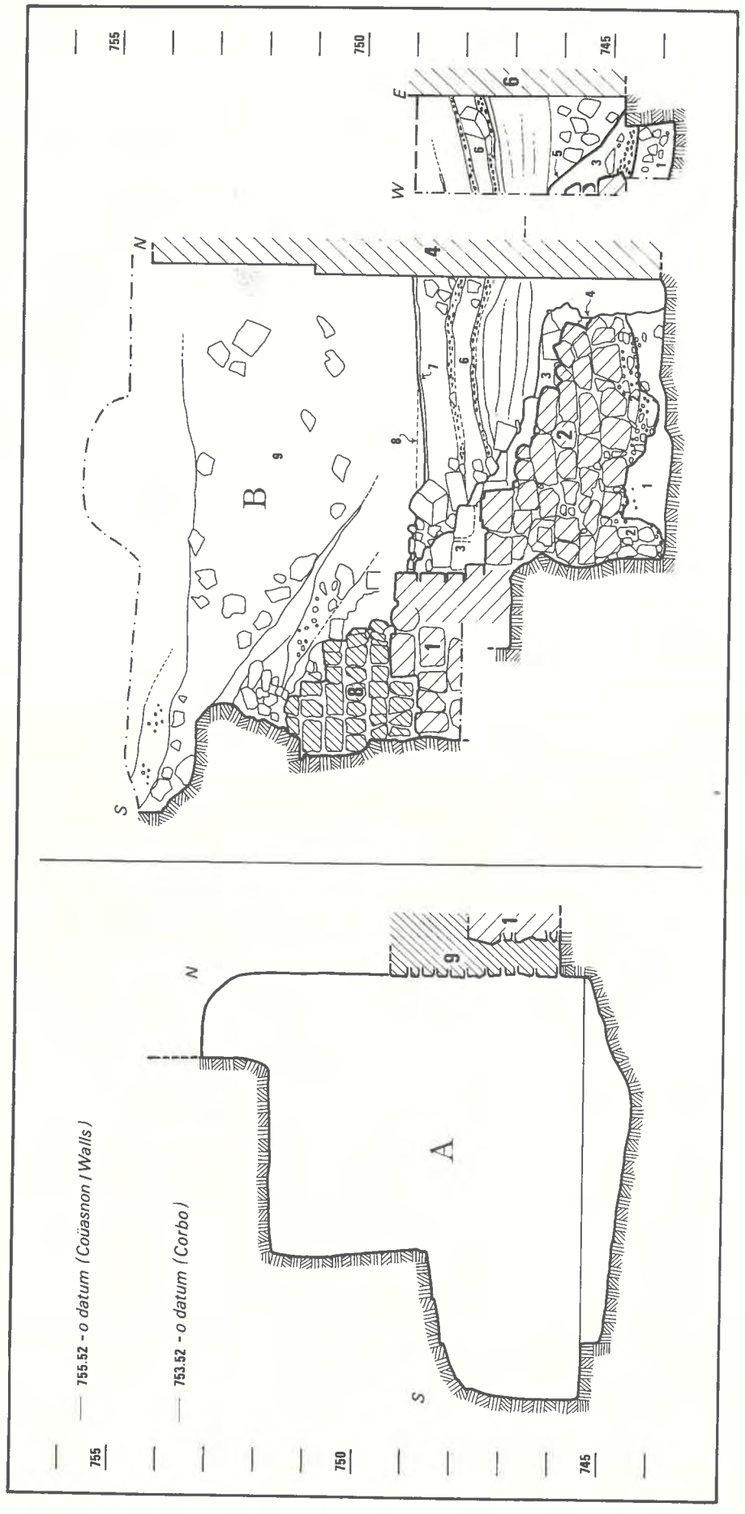


Figure 14. Sections through the Cave of the Invention of the Cross (A) and the Chapel of St. Vartan (B), based on drawings and measurements made by Walls and Helms in 1971, Gibson in 1975, and Gibson and Taylor in 1988: (1) *terra rossa* soil and a few stones. Date: Iron Age; (2) stone foundations of wall 2. Date: Hadrianic; (3) reddish soil and packed stones covering wall 2. Date: probably Hadrianic; (4) Line of foundation trench for wall 4. Date: Constantinian; (5) line of foundation trench for wall 6. Date: Constantinian; (6) backfill of foundation trench with layers of tipped grey-brown soil and white chips. Contains Roman (probably Hadrianic) rooftiles. Date: Constantinian; (7) hard grey layer (surface ?). Date: probably 12th century; (8) dotted line representing the preserved upper edge of wall 5. Date: 11th century; (9) stone and soil tipped fills. Date: post-12th century. (S.Gibson).

wall of the Chapel of St. Helena (Fig. 6; see also Fig. 3). The southern face of wall 4 has a total length of 33.00 m. The northern face was unearthed within the northern space of the excavation, and has a length of 21.60 m. The wall is preserved to a height of 10.35 m., elevation 754.35, and was built in two parts. The lower part has a width of 2.82 m.[11] and is preserved to a height of 7.00 m. with 13 courses of stones built upon a rubble foundation course on bedrock. The upper part is set back on both sides of the wall and has a width of 2.40–70.[12] This part of the wall has a height of 3.35 m. with 6 courses of stones. The wall was built of large stones 40–65 cm. deep, encasing a core of mortar and rubble. The joints between the stones were coated with hard grey mortar. Small stones and earth can be seen adhering to the surface of this mortar, suggesting that the entire area was filled in very soon after the construction of wall 4 had been completed, while the mortar was still wet. Many of the stones used in the construction of the wall were in secondary use, including ashlars with chiselled margins, smooth-faced stones similar to that in wall 1 with the ship drawing, and 5 column drums[13]. The smooth faced stones may have been taken from dismantled Hadrianic superstructures. The ashlars with margins and the column drums are probably of Early Roman date and were taken from Hadrianic foundation walls, including walls 1, 2, 3 and 7.

Wall 6 is located on the eastern side of the excavation area. The western face of this wall has a length of 6.75 m. and a height of 6.40 m. It consists of 11 courses of stones with a number of ashlars with chiselled margins and smooth-faced stones in secondary use, with a coating of grey mortar in the joints between the stones. The total width of wall 6 is believed to be 6.05 m. The eastern face of this wall has not been investigated. The upper seven courses of the western face of wall 6 were bonded into the eastern extension of wall 4, but the lower five courses were not bonded for reasons unknown, possibly structural. The foundation trenches for walls 4 and 6 were clearly seen in the western and northern baulk section of the trench excavated in 1971 (see Fig. 14:4–5). Within the backfills of this Constantinian foundation trench, there were numerous examples of Hadrianic potsherds and roof tiles, some stamped with the mark of the Tenth Legion. Similar fills within the Constantinian foundation trench are mentioned by Corbo (1981–2, p.112) and Díez (1984, p.33). The suggestion made by Coüasnon (1974, pp.41–42) and later by Díez (1984, p.33) that parts of wall 4 may date back to Hadrianic times, or earlier, seems unlikely. A drainpipe built of 18 stone segments, 43–45 cm. in diameter, 40–55 cm. high and bonded with grey mortar, was found built up against the northern face of wall 4 (Broshi and Barkay, 1985, p.124, Pl. 17B). A similar drainpipe was found abutting the southern face of the Constantinian stylobate wall (N) during the excavations east of the Rock of Calvary (Katsimbinis, 1977, p.204, Fig.11; Corbo, 1981–2, p.112, Pl. 3:302, Photos 97, 99). These pipes probably extended from sumps in the pavements of the basilica. It is interesting to note that similar drain-pipes of stone were employed in the North Church complex at Nessana (Kendall, 1962, p.28, Pl. IX.3).

Masons' Marks

The base of one of the column drums in the south side of wall 4, in the second course of stones above the 'shoulder' of the wall, is inscribed with masons' marks reading: -E III (Helms, 1980, p.119). The letter and number measure 7 cm. and 6 cm. respectively. They have been carefully cut with a chisel to a depth of 4–5 mm. Slightly below and to the right of the inscription is a lightly scratched cross (Fig. 15). Another column drum on the north side of wall 4, west of the drainpipe (see above) is inscribed with a similar letter and number reading O III, and measuring approximately 7 cm. in height.

This combination of a letter and a number has been found on column drums elsewhere in Palestine. A Greek *beta*, 8 cm. high, was found on a drum from the Byzantine levels of a building on the Ophel (Macalister and Duncan, 1926, p.119, Fig. 115d). Bliss and Macalister (1902, p.49, Pl. 14; see Gibson, forthcoming) found that many of the drums from an Early Roman building at Tell ej-Judeideh were inscribed with a Greek letter (*alpha*, *beta*, *delta*, *epsilon*, *sigma*, *ēta*, *theta*, *kappa*, *lambda*, *nun*, *omicron*) along with one or more vertical strokes. The characters ranged from 5.6 cm. to 10.2 cm. high. On the basis of an unspecified experiment, Bliss and Macalister concluded that while these were masons' markings they did not indicate the position of the columns in a building (for further information about the building at Judeideh, see Gibson, forthcoming).

During excavations of the second century temple at er-Ramm, a Nabataean *ḥet* followed by a *yod* was found on column 3. On column 6 there was an analogous mark; the letter *kaph* with a *yod*. *Kaph* is the third in sequence after *ḥet*, which led the excavators to suggest that all the columns were marked according to the letters of the alphabet, the *yod* letters being an abbreviation of some kind (Savignac and Horsfield, 1935, p.24 ff). Twenty column drums from the temple at Avdat had masons' marks cut into their bases (Negev, 1964, p.29). The drums are 65–70 cm. in diameter and 50–75 cm. high and are marked, like those at er-Ramm, by consecutive letters. Most of the column drums here were designated by a letter and a number, made up of strokes,

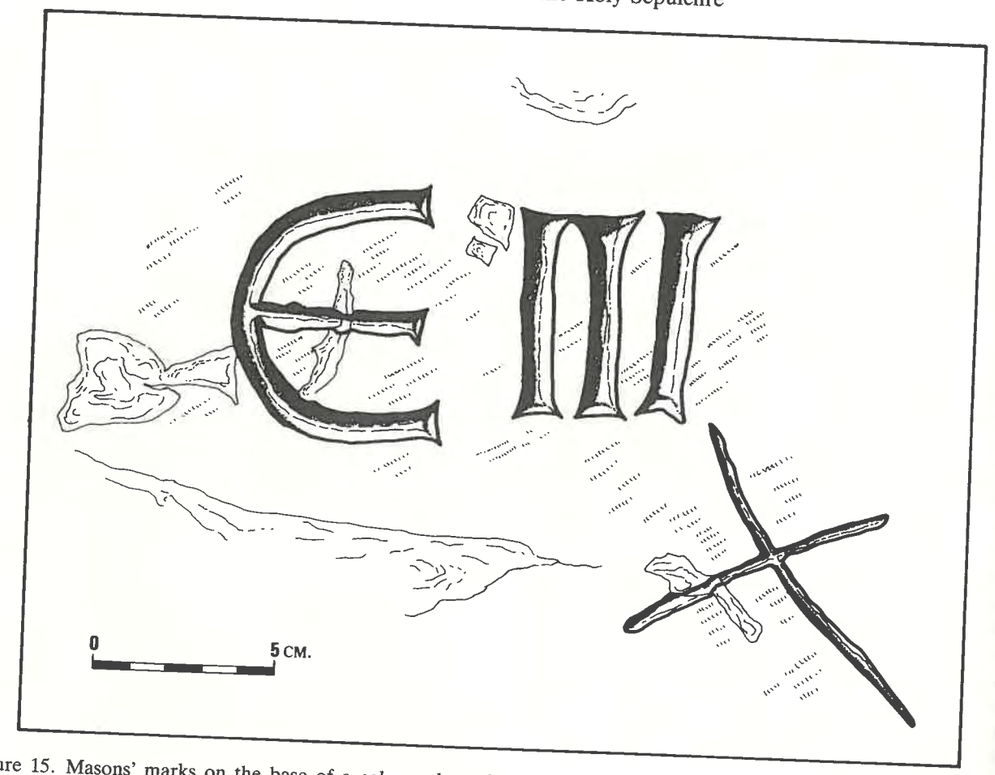


Figure 15. Masons' marks on the base of a column drum found built into wall 4. (drawing by S.Gibson based on an original sketch by A.Walls and S.Helms).

but some had two letters with or without numbers. Negev suggests that the double-lettered drums belong to the second aisle of the building, the *yod* letters representing the word 'right' and indicating the peristyle of the structure (Negev, 1964, p.32). Roman-Byzantine architectural fragments found during the excavations of a mosque in Samaria include two column drums with the Greek letters *alpha* and *beta*, the second letter being followed by three oblique strokes (Dar, 1986, p.236, Fig. 128, Photo 113).

E. Damati (1977, p.106; 1982, p.119) found masons' marks on a column drum, 47 cm. in diameter and 18 cm. high, in a first century rural villa referred to as 'Ḥilkiya's Palace'. These marks, a Hebrew letter *lamed*, 7 cm. high, with the notation IIIII+, 3 cm. high, seem to be the familiar combination of letter and number, and in this case the cross would indicate the number 4, as Damati suggests. The total value of the number with the *lamed* is therefore 9, indicating that the drum was the ninth part of the twelfth column. From this it is possible to estimate the total height of the column as 4.5 m. Another drum fragment, 15 cm. high, bore an incised Greek *delta*. Damati (1977, p.107) suggests that the number of columns was greater than 22, the number of letters in the Hebrew alphabet, so the builders went on to use Greek characters.

Masons appear to have known several different scripts and used them to order the columns. In Masada, locus 92 (upper terrace) of the northern palace, the usual combination of letter and number was found on column bases (Yadin, 1965, pp.32–33; 1966, pp.68–69), but some of the letters were in the square Aramaic script of the Herodian period and others in archaic Hebrew, while in the lower terrace of the northern palace Latin characters were found (see Yadin, 1965, p.33, n.25). In Nazareth, four column bases of white calcite have masons' marks of Aramaic *lamed*, final *mem* and a type of *ṭet* of the Nabataean rather than the Jewish script (Taylor, 1989, p.373; 1993, p.265; Bagatti, 1969, p.233).

In his excavations in the Jewish Quarter of Jerusalem, Avigad (1983, p.165) found the Roman numeral VIIII on the side of a column and also a Greek *delta* on a large column base. Letters also make their appearance on ashlars. In a section of an ashlar fortification wall west of the pool of Siloam, *delta* marks appear in the margins of stones (Bliss and Dickie, 1898, p.117). The same letter has been found inscribed on stones in a section of Broshi's Hasmonean city wall

south of the Citadel (Broshi and Gibson, forthcoming). Cross marks + and x appear on ashlars of C. N. Johns' 'Second Build' wall between points C-D in the Citadel (Johns, 1950, p.137, Pl. LII).

The clear conclusion is that the Greek *epsilon* and the three vertical strokes found on the column drum here indicate that the drum is the third one up on the fifth column of the series; the Greek *omicron* with three strokes mean that the drum was the third of the fifteenth in the series. The rough cross would appear to be an additional builders' mark.

Medieval Walls

Wall 5 is located on the western side of the excavation area (Fig. 6). It has a length of 6.24 m. and a height of 1.60 m. The top of the wall has an elevation of 748.90. The foundations of wall 5 were either built over a fill of rubble or into the upper part of wall 3. Wall 5 has three courses of irregularly shaped fieldstones with smaller stones in between the gaps. The northern and southern ends of the wall are built against walls 4 and 1. The construction style of wall 5 is very different from the other ancient walls in the area.

Broshi and Barkay (1985, p.124) have suggested that this wall served as the foundation course for the upper part of the eastern wall of the Chapel of St. Helena, which can be dated to Crusader times. This suggestion seems unlikely, however, because the alignment of wall 5 does not correspond with the line of the eastern wall above it. We suggest that wall 5 may date from the 11th century and perhaps should be related to the earliest northern wall of the Cave of the Invention of the Cross (Fig.3:D; Corbo, 1965, Fig. 1: wall 7a; 1982, Pl. 57: wall D-E, Pl. 58: Coüasnon's 'ancient wall'). This wall (Fig. 14:A, wall 1) was seen 0.50 m. behind the present northern wall of the cave (Corbo, 1965, pp.330–331). It has a preserved height of 1.90 m. above bedrock with an elevation of 747.70 at the top. A continuation of this wall was also seen at the back of the apse in the north-eastern corner of the cave (Corbo, 1965, p.334, Figs 7 and 8). The irregular courses of this wall had been reinforced with blackish mortar. Such mortar was also found on the rock-cut walls of the cave and above a fill overlying the quarried floor. Corbo has proposed that these remains are from the Early Roman period and indicate that the cave was used as a cistern, but this seems improbable. Rather, it appears to us that the ancient line of stones seen behind the northern wall and behind the apse is not a 'wall' in the structural sense but instead represents the core of the Hadrianic wall 1, seen in the Chapel of St. Vartan, which was cut into and reinforced with mortar at the time when the Cave of the Invention of the Cross was first converted into a chapel. This probably ocurred in 1042/8, when Constantine Monomachus built a new church further west after the destruction of the Byzantine structures by Caliph Hakim in 1009.

It has generally been assumed that following Hakim's efforts to tear down the structures here the area of the present Chapel of St. Helena and the Cave of the Invention of the Cross, below what had been the Constantinian basilica, remained 'an abandoned field of ruins' until the time of the Crusaders (Coüasnon, 1974, Pl.54, Pls. X, XXV). Corbo (1981–2, Pl. 4) has suggested, however, that the Cave of the Invention of the Cross was first created as a chapel in the 11th century, following the discovery and clearance of the proposed cistern, since he has identified the outer lower face of the northern wall of the Cave of the Invention of the Cross as belonging to that period (Corbo, 1965, p.332).

Our reconstruction of the development of the chapel is slightly different from that of Corbo. We believe that the entire area of the ancient cavity caused by Iron Age quarrying, which incorporates the present Cave of the Invention of the Cross, Chapel of St. Vartan and the area north of wall 4 (Fig. 3), was filled up during the course of building the Constantinian basilica (see below, pp.74–76). During the 11th century, the area of the nave of the destroyed basilica was cleared and the rock surface below the present Chapel of St. Helena was probably levelled (down to elevation 748.70). Wall 5 was built in order to retain the fills of the present Chapel of St. Vartan, which remained largely undisturbed, while the area of the present Cave of the Invention of the Cross was cleared. The core of wall 1 was used as the foundations for the northern wall of the new chapel and was reinforced with black mortar. A flight of steps were cut from the floor of the Chapel of St. Helena down to the cave.

The Chapel of St. Helena and the Cave of the Invention of the Cross were substantially remodelled during the 12th century. The cloisters of the Monastery of the Canons, built in 1114, were located above this area (Coüasnon, 1974, Pl. X, p.61; for the later history of this area, see Pedersen, 1984). The major modifications to the Chapel of St. Helena include the construction of an arched roof, with a central dome supported by columns, and a new east wall with apses which replaced wall 5 of the 11th century (Fig. 16). To the east of this new wall is a hard grey layer (at elevation 749.00) visible during the 1971 excavations (Fig. 14: B, 7), which is probably a surface dating from the time of the 12th century building activities here. In the Cave of the Invention of the Cross, new walls were added to the north and east, with an apse in the north-east corner (Corbo, 1965, Fig. 1; 7–11, 13). The floor of the cave was also raised and paved with stones. The northern wall was constructed in two stages (Corbo, 1981–2, Pl.

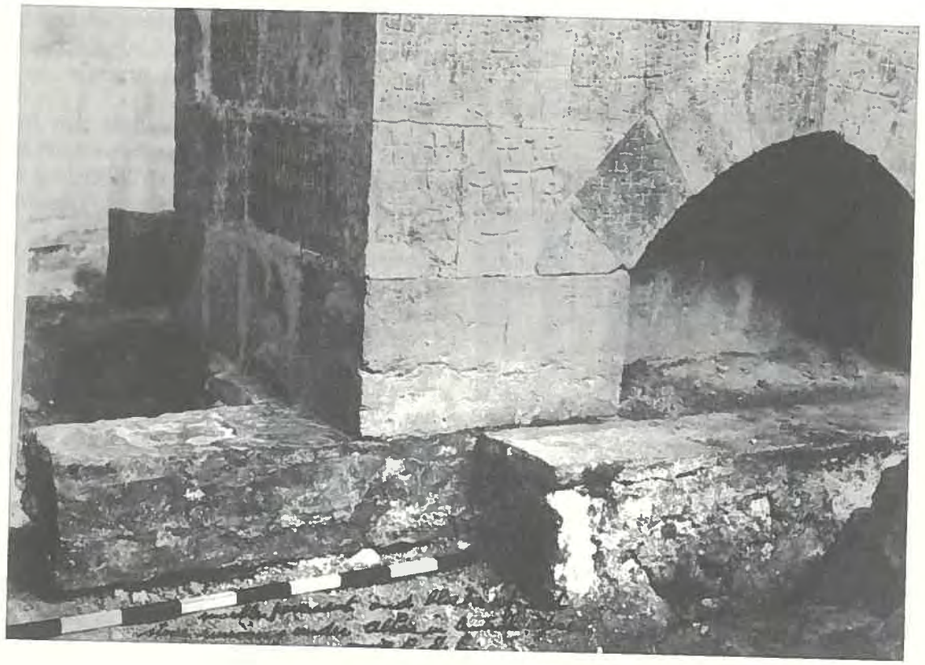


Figure 16. The remains of a marble pavement (right) and blocks of red stone running under the altar of St. Helena, probably of 12th century date, in a photograph taken by C.Couasnon in 1964 during excavations in the Chapel of St. Helena, and given to A.Walls (courtesy of the École Biblique et Archéologique Française de Jérusalem).

57: Section C-D, Pl. 58: Section A–D). The lower part (Fig. 14:A, wall 9) was built of roughly squared field stones and its inner side was revealed above wall 1, preserved to a top level of 751.50 m., during excavations in the Chapel of St. Vartan (see Fig. 14:B, wall 8). The upper part of the wall was built of small squared blocks of stone and it supported a semi-vault, with three ventilation shafts, built against the rock ceiling.

Conclusions

The archaeological remains uncovered in the Chapel of St. Vartan represent a number of major periods in the history of the Church of the Holy Sepulchre. During the Iron Age, 9th–8th centuries B.C., the natural topography of the area was transformed by the hewing out of a large partly subterranean cave for the purposes of extracting blocks of building stone. At the time of Hadrian, the area was completely blocked in with enormous fills of soil and debris, held in position by a network of consolidation walls, as part of the work which preceded the construction of the forum and its associated buildings. Early in the 4th century A.D., the area was largely cleared down to bedrock and massive foundation walls were inserted with the aim of providing a strong support for the large Constantinian basilica which was subsequently erected above. During the 11th century, the central part of the ruined nave of the Constantinan church was cleared and converted into a small underground chapel. This same chapel was then rebuilt and modified during Crusader times.

CHAPTER TWO

The Jerusalem Ship Drawing

History of Research

A smooth-faced stone, decorated with a drawing of a ship and an inscription, was built into the north-eastern corner of the second course of stones of wall 1 (Figs. 13 and 17). It was first seen by Walls and Helms in November 1971, while they were supervising the general progress of the Armenian Patriarchate excavations (Bennett, 1974, pp.307–9). Black and white photographs of the ship drawing were taken within three days of the discovery by a local photographic agency, Elia Photo (Figs. 18–20). These photographs show that the surface of the stone was relatively clean except for a few encrustations on the lower parts, below the inscription, and around the ship's stern. According to Walls (personal communication), the surface of the stone was 'clammy and cold' at the time of the discovery. A sketch of the ship and inscription (Fig. 21) was prepared by Helms to a scale of 1:1 in December 1971 'under great difficulty and in some danger' (Bennett, 1974, p.309). Helms sketched only the black lines of the drawing and not the less distinct areas depicted in red above the lowered mast and below the stern (see below). One of the photographs and a sketch by Helms appeared in the short report on the circumstances surrounding the discovery of the ship drawing by C. M. Bennett (1974, Figs. 1–2), accompanied by an analysis of the

Figure 17. Chapel of St. Vartan excavations: The north-eastern corner of wall 1, looking south, in a photograph taken in 1971 shortly before the discovery of the ship drawing on a stone located just below the iron stake visible in the centre-left of the picture. (courtesy of A.Walls).

Figure 18. The ship drawing in a photograph taken in November 1971. (Photo Elia, courtesy of A. Walls).

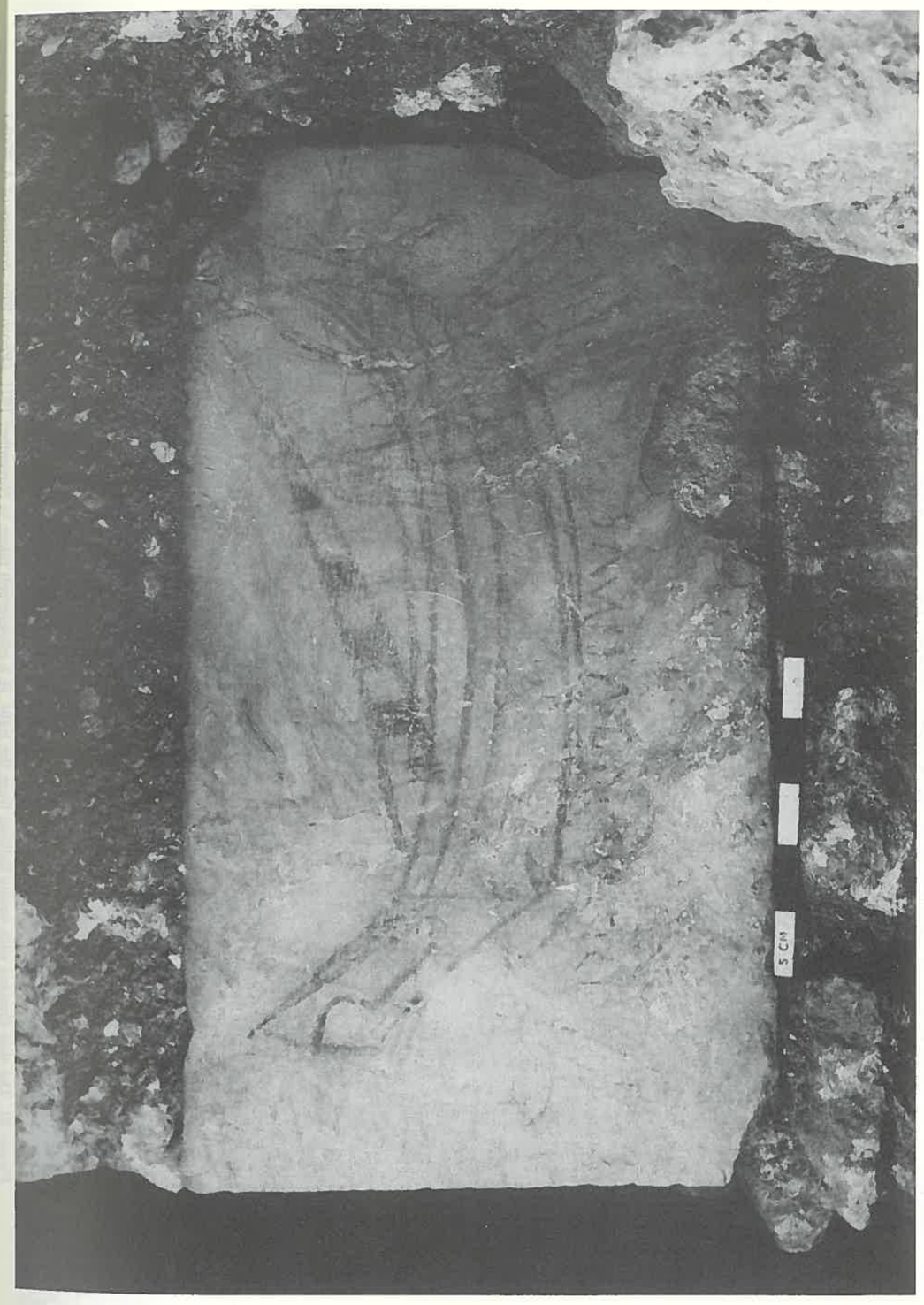


Figure 19. The ship drawing with strong lighting from the left, in a photograph taken in November 1971. (Photo Elia, courtesy of A. Walls).

Figure 20. The ship drawing with strong lighting from the right, in a photograph taken in November 1971 (Photo File, Israel Exploration Society).

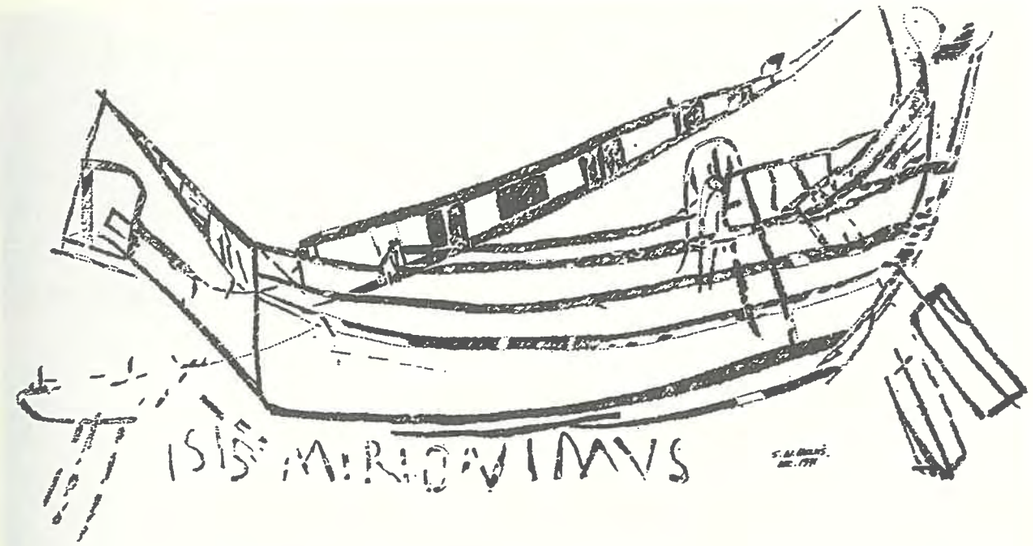


Figure 21. Sketch of the ship and inscription prepared in December 1971 by S.Helms. (after Bennett, 1974, Fig.2).

ship details by S. C. Humphreys. It should be noted that Humphreys never examined the drawing at first hand, but based her analysis entirely on the sketch by Helms and a photograph.

The ship drawing remained exposed from 1972 to 1975, but no written or visual documentation exists for this period. In September 1975, following a suggestion from Corbo (1984, p.413 and personal communication), Bishop Kapikian asked the Franciscan Fr. Emmanuele Testa to clean the drawing. Details of Testa's cleaning of the drawing are not available. His subsequent short report on the ship was illustrated with a colour sketch (Fig. 22) drawn in very bold lines (1976, opp. p.224). The ship drawing was first examined by M. Broshi in November 1975, at the time of the renewed excavations at the site. A detailed sketch of the drawing and inscription were prepared by S. Gibson to a scale of 1:1 (Fig. 23). Broshi had a series of black and white photographs taken by Z. Radovan (Fig. 24) and D. Harris (Fig. 25), and colour photographs by A. Glick. An infra-red photograph was taken by the Israeli Police Force during January 1977 (Fig. 26). Since 1976, Broshi has discussed the ship drawing in seven separate publications (1976B; 1977A-C; 1978; Broshi and Barkay, 1985, with a Hebrew version in *EI* 18, 1985, pp.8–20). In 1980, Helms contested some of Broshi's basic conclusions in an article which included revised sketches of the ship drawing (Fig. 27) and a photograph taken in 1971. On Broshi's advice, the Armenian Patriarchate had the stone enclosed within a frame to prevent it from being touched by pilgrims and other visitors.

The Stone and the Drawing

The stone is 82.5 cm. long, 46.5 cm. high and 42 cm. deep. Slightly different measurements were given by Testa (1976, p.219: 81 x 45 x 39 cms.) and by Broshi (1978, pp.29–30: 85 x 45 cms.)[14]. The stone was probably local *mizzi ḥilu* ('sweet' stone), which is hard fine-grained chalk, with a slight yellowish tint (Canaan, 1932, p.233; Avnimelech, 1966, p.25; Shadmon, 1972, pp.21, 37). It was popular for building purposes in antiquity and could take a good polish. The stone here has a number of intricate reddish natural veins in its surface. It was originally dressed by means of a toothed chisel or comb-pick, as dentate markings are illuminated by the oblique lighting of one of the 1971 photographs. The toothed chisel or comb-pick were frequently employed for trimming building stones in Palestine from the Hellenistic period onwards (Nylander,1967). The stone was carefully polished in order to prepare a smooth surface for the drawing (Bennett, 1974, p.309; Broshi, 1977A, p.351; 1977C, p.42; 1978, pp.29–30). Similar smooth-faced stones, though unpolished, may be seen built into walls 4 and 6.

The ship drawing is 66 cm. long and 31 cm. high. Similar measurements are given by Testa (1976, p.219) and by Broshi and Barkay (1985, p.125). The inscription is 36.5 cm. long and its letters approximately 3 cm. high.

The drawing has been described as a 'graffito' in a number of reports (Helms, 1971; Broshi, 1977C, p.42: caption; Díez, 1984, p.33; Bahat, 1984–5,

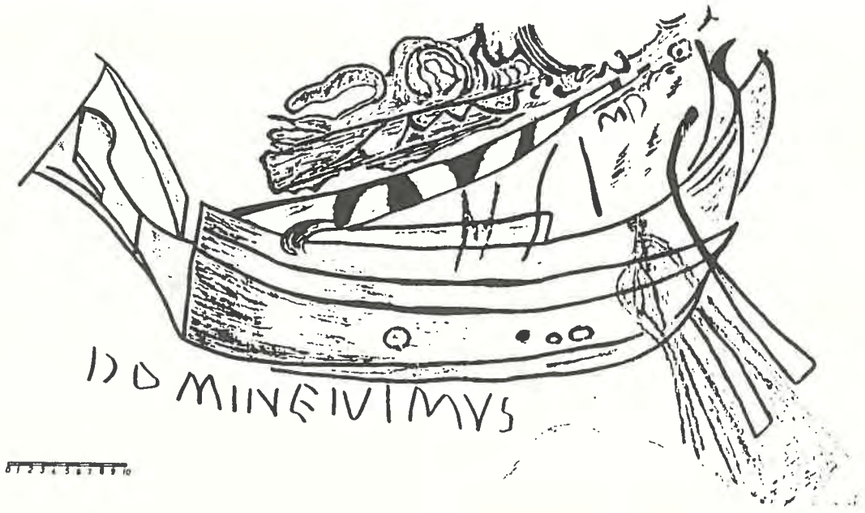


Figure 22. Sketch of the ship and inscription by E.Testa. (after Testa, 1976, drawing opposite p.224).

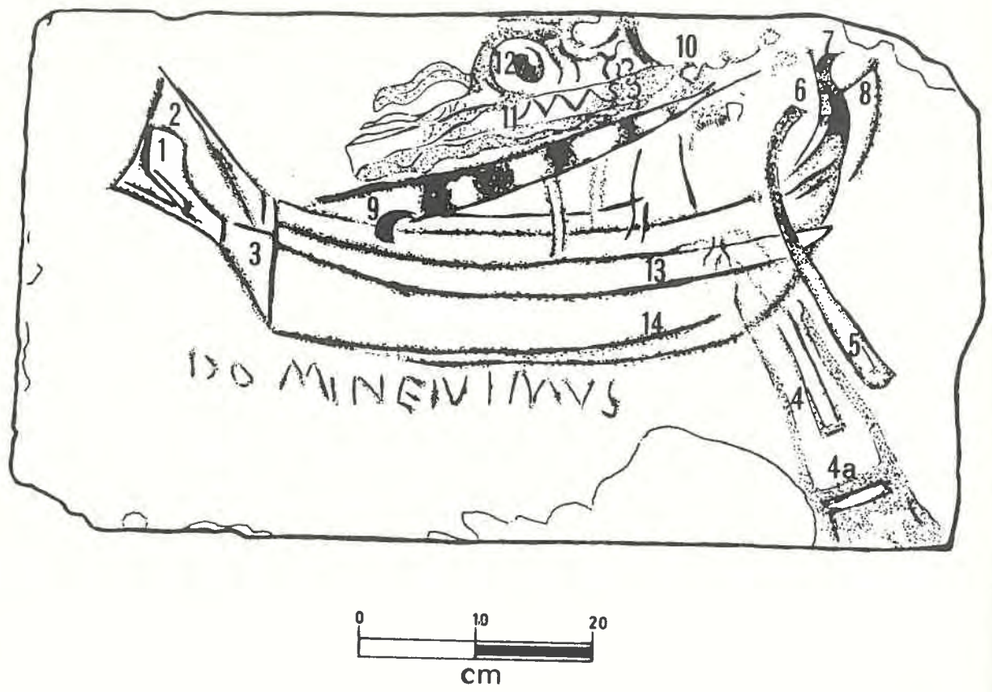


Figure 23. Sketch of the ship and inscription prepared in November 1975 by S.Gibson. (courtesy of M.Broshi).

p.52), but this term is not quite correct, despite modern usage which has expanded the definition to include most forms of spontaneous, unofficial slogan-writing, whether carved or spray-painted. Strictly speaking, it can only be used in reference to drawings and inscriptions '*scratched* into a surface' (Bray and Trump, 1970, p.95) and in this case the decoration has been drawn, not incised. It is a

Figure 24. Photograph of the ship drawing after cleaning taken by Z.Radovan in 1975. (courtesy of M.Broshi).

depinto (Fig. 28). The inscription and major parts of the ship were drawn in black, except for features nos. 17, 18, 19 and 23 which were drawn in red (Fig. 30). According to Bennett (1974, p.309; cf. Helms, 1971) the drawing was made with some kind of 'grease' pencil. Testa (1976, p.219) wrote that the design was in part drawn with charcoal and also, exploiting the veins of the stone, red 'colour'. Broshi (1977A, p.351; 1978, pp.29–30; cf. also Helms, 1980, p.107) has suggested that black graphite and red ochre-sinopia pigments were used[15]. The black pigment used was more probably some form of amorphous charcoal rather than graphite, which has an iron-grey colour. The red pigment was probably a local type of ochre which was ground, washed and mixed with oil before being applied. In the decoration of Muslim shrines, *siraqûn* (minium) was used for a red coloration. The pigment was kneaded into a paste, sometimes with the addition of fat, and then daubed on the wall with a stick (Canaan, 1927, pp.14, 29). It should be noted that the pastes used in the drawing have never been analysed, and therefore their identification remains a matter for speculation.

The Cleaning of the Stone

A comparison between the ship drawing as evidenced by the 1971 photographs and the drawing as it is found after Testa's cleaning in 1975, reveals substantial differences between the two[16]. There are at least three possible explanations for this.

The first is that the full details of the drawing and inscription may not have been visible in 1971 because the surface of the stone was dirty. This is the view put forward by Broshi (1977A, p.349; Broshi and Barkay, 1985, pp.127–8)[17]. There are a number of reasons why this seemed a likely explanation: the details of the ship drawing and inscription were rather indistinct in the 1971 photograph published by Bennett (1974, Fig. 1); Helms' 1971 sketch included only the black lines of the drawing (Bennett, 1974, Fig. 2), which suggested that the red lines could not be seen by Helms on account of the poor state of the drawing; and the fact that the Armenian Patriarchate asked Testa to clean the stone in 1975 appeared to imply that the stone must have had considerable encrustations on its surface which required removal. However, in our examination of enlarged prints of the 1971 photographs, and after discussion with Walls and Helms, we have become convinced that the surface of the stone was relatively clean at the time immediately following its discovery. The original photographs published by Bennett (1974, Fig. 1) and later by Helms (1980, Fig. 1: top) were badly reproduced, and are there-

Figure 25. Photograph of the ship drawing after cleaning taken by D.Harris in 1975. (courtesy of M.Broshi).

fore misleading. In fact, the existing 1971 photographs are clear and detailed. Furthermore, the red parts of the ship drawing were easily seen by Helms, but were not included in his sketch because they were details he 'did not wholly understand at the time' (1980, p.108, Fig. 4:B).

A second possible explanation is that there were originally a number of superimposed ancient drawings on the surface of the stone, and that Testa's cleaning highlighted parts of these original drawings. This is the suggestion put forward by Helms (1980, pp. 107, 112), though with little conviction. The 1971 photographs do not reveal superimposed drawings of any kind, and it seems unlikely that the black parts of the drawing are a separate addition to the red areas. As we shall show below, both the red and the black portions are vital in understanding the ship as a whole.

A third explanation is that the drawing was partially drawn over with lines which do not correctly follow all the lines of the original drawing at some point prior to 1975. It is this explanation that seems to us, the most probable. Helms (1980, pp.108–109) has pointed out that 'an alarming proportion of detail that was clearly visible at the time of the discovery in 1971 . . . seems to have disappeared in the new rendering based on the 'cleaned' drawing.' This led Helms to voice suspicions regarding the fate of the ship drawing after he had left it in 1971. In September 1975, Testa undertook the cleaning of the stone. Corbo suggested to the Armenian Patriarchate that Testa clean the stone because he had learnt the basic principles of stone conservation from Italian specialists cleaning the Martyrium of Conon adjacent to the Grotto of the Annunciation in Nazareth (Corbo, personal communication[18]). Testa has not published a conservation report on the methods and procedures of the cleaning, despite controversy concerning the authenticity of the present drawing, nor has he issued a condition report on the state of the stone prior to the cleaning. The only available information is his remark that 'noi stessi ripulimmo chimacamente il disegno' (1976, p.219[19]) and the somewhat strange testimony of the workmen on the site reported to Broshi (personal communication) that Testa used pig's leather and oil, while Corbo (personal communication) believes that the superficial dirt on the stone was removed with 'lardo di maiale'[20]. Discussion with stone conservators confirms that the application of fat or oil to the surface of the stone would have resulted in a greasy mess; lard is not a cleaning agent. We would not like to suggest that Father Testa cleaned the stone badly, but the scholarly community would benefit from a full report.

As regards the condition of the stone, a sound

Figure 26. An infra-red photograph of the ship drawing taken by the Israeli Police Force (No.338/77) in January 1977. (courtesy of M.Broshi).

method would have been to determine what kind of paste was used before applying any kind of chemical solvent, in order to choose the most successful cleaning method, and to ensure that nothing was applied that might be damaging to the design (Leigh, 1978, p.5). Perhaps, between 1971 and 1975, the surface of the stone began to dry out, and with the loss of moisture the definition of the drawing deteriorated. The problem may have been compounded by the accumulation of a film of dust on the drying surface of the stone as a result of building work and excavations in the area. This may have prompted the Armenian Patriarchate to have the stone cleaned. It may also have prompted someone to highlight what seemed to be the most prominent lines, since the whole drawing appeared to be in danger of fading away. We do not know how many people were allowed unsupervised access to the ship drawing between 1971 and 1975. It is conceivable that any one of the visitors may have been responsible for the changes made to the original drawing. No information is available regarding the state of the drawing at the time of Testa's cleaning in 1975. Unfortunately, the authors have been unable to obtain any comments from Father Testa on the originality of the drawing (correspondence to Father Testa, August 1986).

As stated above, an infra-red photograph was taken by the Israel Police Force on 12 January 1977. According to Broshi and Barkay (1985, p.128) this established that the drawing and inscription 'had not been tampered with in any way'. However, there are serious grounds for doubting whether infra-red illumination would show up any lines that are invisible to the naked eye. Infra-red illumination is reliable for testing for the presence of pigments that have been absorbed into certain materials such as canvas, wood, textiles, leather, parchment and occasionally ceramics (Dorrell, 1989, p.205), but it is inadequate as a method of verifying whether other lines exist on a hard stone with low porosity, such as this *mizzi* block. Moreover, during Shimon Gibson's sketching of the ship drawing in 1975, two types of markings were noticed: (i) soft and blurred lines and (ii) bold and sharp lines (see Fig. 25). Although these different kinds of markings were not clearly understood at the time, we now suggest that the former are the faded original lines of the drawing, while the latter are modern and represent an attempt to give it a semblance of verisimilitude. In addition,

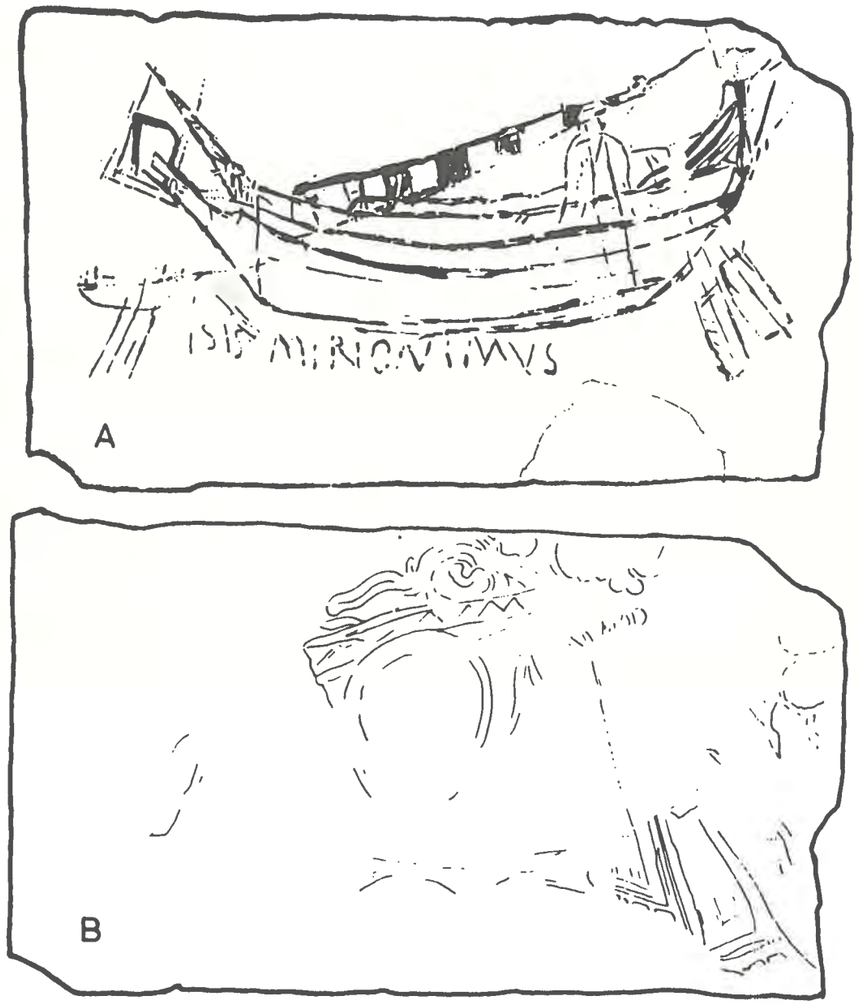


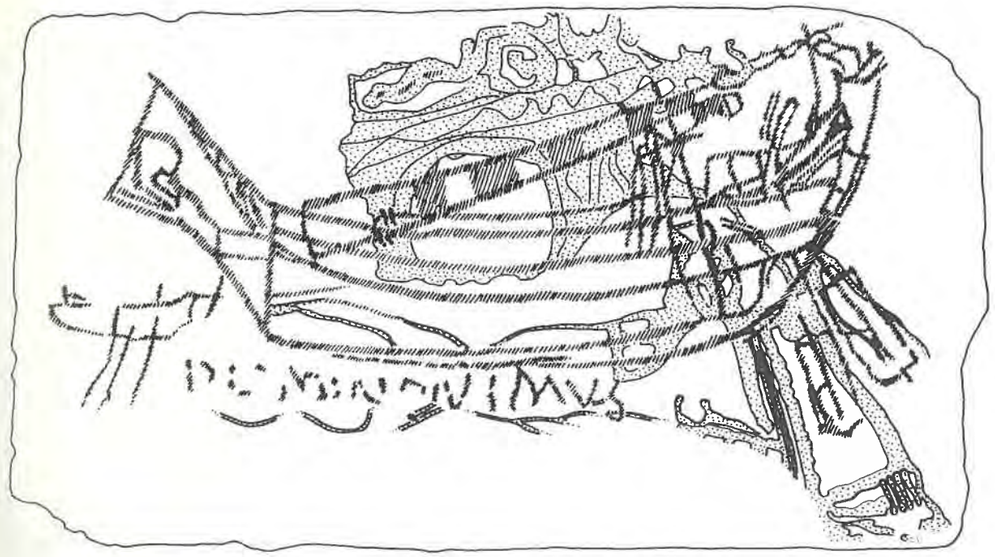
Figure 27. Sketch of the ship and inscription (A) with the red portions of the drawing shown separately (B), published in 1980 by S.Helms. (after Helms, 1980, Fig. 4).

a close examination of the red colouring of the drawing shows that there are two hues in evidence: the heavy, bold lines are not as orange as the fainter ones. These two colours are also apparent in the photographs taken by Glick (Broshi, 1977a, p.42). It appears that whoever drew the new red lines did not take sufficient care to match the colour exactly with the red colour of the original lines.

This conclusion could easily be verified or discounted by an analysis of samples of the pastes used in the drawing under laboratory conditions. It is hoped that these arguments will prompt the Armenian Patriarchate to commission an independent analysis of the pigments. We have spent a great deal of time examining the 1971 photographs, some enlarged to about half the size of the actual drawing, the original scale 1:1 sketches by Helms and Gibson, as well as the drawing as it is found on the stone today, and, sadly, we have reached the conclusion that there have been alterations which have resulted in the transformation of the Jerusalem ship drawing. The present drawing is but a poor reflection of the unique ship representation that existed in 1971. Many details of the ship have now been lost.

The Ship

The following discussion is based on a new sketch of the 1971 ship drawing prepared by Shimon Gibson on the basis of a close examination of the



RED

BLACK

Figure 28. A new sketch of the ship and inscription with the red (pointed) and black (hatched) painted features shown separately. (S.Gibson).

1971 photographs (Fig. 29). Every mark visible on the surface of the stone in these photographs was carefully scrutinised before being added to the new sketch. A series of natural red veins can also be seen on the surface of the stone, and are also clearly visible in recent colour photographs (Broshi, 1977C, p.42; Cole et al, 1983, No. 109) and care was taken to exclude these. The two scale 1:1 sketches of the ship were superimposed one above the other. This revealed that some of the lines in the original 1971 drawing were thicker than those of the present drawing (Fig. 23). A comparison of the new sketch with the sketch of the present drawing published by Broshi (1977, Fig. 1:B) shows that many of the original ship details have been either eliminated, enhanced or transformed. The exact details of these changes will be referred to during the course of our discussion.

The drawing is of a typical Roman merchant ship. Basch (1987, p.457) has pointed out that scholars have sometimes used the 'merchant ship' description rather loosely to cover a wide variety of vessels, including large and small transport vessels, fishing vessels, small harbour boats and river boats. In general terms, however, the ship belongs to a type of sailing vessel known in Latin as *navis oneraria* (Casson, 1971, pp.169, 175: third type). It is not, as Testa (1976, p.219) has suggested, an oared merchant galley of the *actuaria* type (cf. Casson, 1971, p.157: n.3 and Basch, 1987, pp.457–471, for the most up-to-date analysis of the different types of Roman merchant vessels). The overall size of this merchantman is impossible to determine, but the *artemon* mast in the bows (Fig. 30:1) indicates that it must have been fairly large since small coastal craft lacked this feature. The curved shape of the sternpost and the presence of a tender off the bows, lend further support to the suggestion that the vessel was fairly large. According to Humphreys (1974, p.310) the ship may have had a length of 10–15 metres. Kingsley (personal communication) has suggested that if the ship's boat had an overall length of 6 metres, then perhaps we are dealing with a mother ship reaching a length of some 28 metres. Both suggestions are entirely hypothetical.

The stern is depicted on the right-hand side of the drawing, with the prow on the left-hand side. Testa (1976, p.219) has incorrectly identified the stern area as the 'prow' of the ship. The rather squat hull has a well-pronounced sheer, which is also represented in the side-planking or wales (Fig. 30:2–3). These wales were heavy longitudinal timbers which girdled the sides of the ship from stern to bows (Casson,

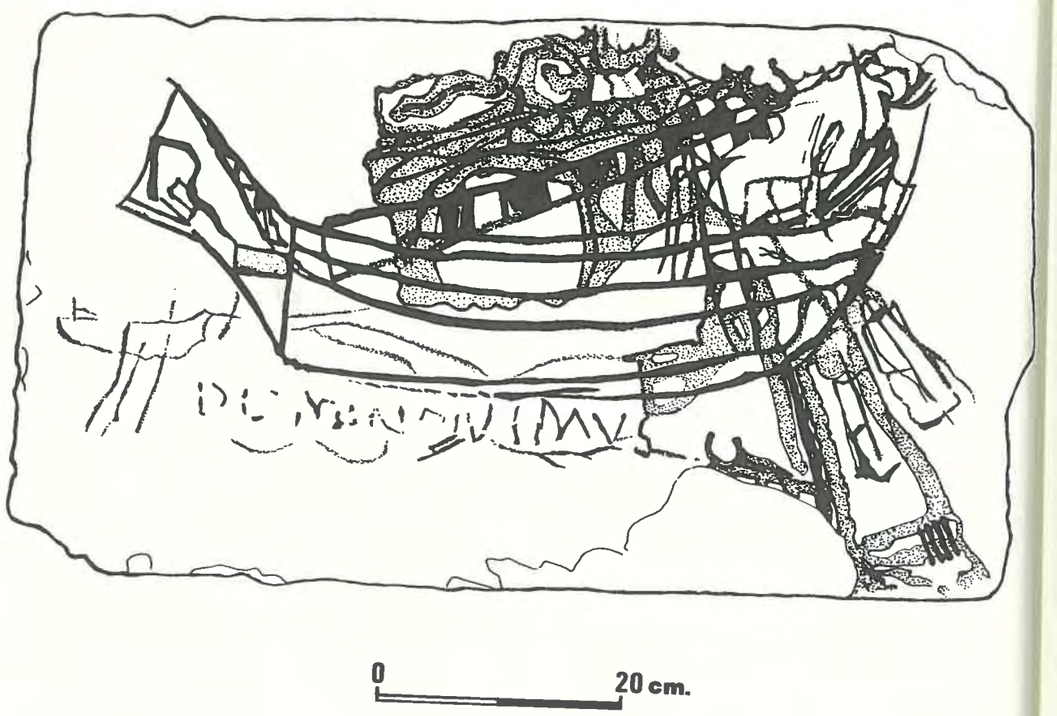


Figure 29. A new sketch of the ship and inscription based on a re-examination of the 1971 photographs. (S.Gibson).

1971, pp.223, 226–7, Fig. 151; Viereck, 1975, p.126, Fig. 113: no.1).

A strange vertical line (Fig. 30:4) is visible extending from the foot of the *artemon* mast down to the bottom of the ship; in the drawing it forms a separating line between the body of the ship and the bows. It seems unlikely that this line represents a structural feature since this would have meant substantial modifications to the front part of the ship's framework with no apparent benefit. Humphreys (1974, p.310) has compared this vertical line with the looped cable extending around the prow of the ship in the Naevoleia Tyche relief which dates from the 1st century (Casson, 1971, Fig. 151; Basch, 1987, Fig.1019); the cable can be seen passing over the foot of the *artemon* mast where it links up with the forestay of the mainmast. Cables are also visible extending around both the stern and bows of the left-hand ship represented on the Torlonia relief (Fig. 31:3) which is to be dated to the end of the 2nd century or early 3rd century (Basch, 1987, Fig. 1043).

The ship is represented with a lowered mainmast (Fig. 30:5). The lower part of the foot or heel of this mast is shown resting on the topdeck behind the *artemon* mast. The foot of the mast was seen by Humphreys (1974, p.310) and by Helms (1980, p.109) but no longer exists in the present ship drawing. Five wooldings are depicted on the tapering body of the mast, indicating that it was composite in structure. The wooldings were bands of ropes or metal that were used to confine and support a mast made out of a number of segments (Casson, 1971, pp.69, 231, n.31; Figs. 147, 151, etc.; Basch, 1987, p.461; see also the wooldings depicted in the Beth Shearim ship of Byzantine date in Pliner, 1966, Pl.V:1, which have been incorrectly reconstructed as rope-gear in the model shown in Pl.V:2). According to Helms (1980, p.109) the lines of the wooldings in the 1971 ship were distinguished by individual strokes. Unfortunately, the wooldings in the present ship are now blurred and rounded in shape. The mast ends in a circular masthead surmounted by a spike with wavy edges which was probably used for flying a flag (Fig. 31:5); similar features are depicted on the Europa ship graffito dating from the 1st century (Fig. 31:6) and on the Cucuron ship graffito (Pomey, 1993, Fig.1). A flag with fringed edges can be seen at the top of the mast of the Naevoleia Tyche ship (Basch, 1987, p.461). A strange rectangular feature is depicted attached to the side of the mast immediately below the circular masthead (Fig. 30:6); it has a slightly concave underside with a semicircular loop on its right. This may be the feature

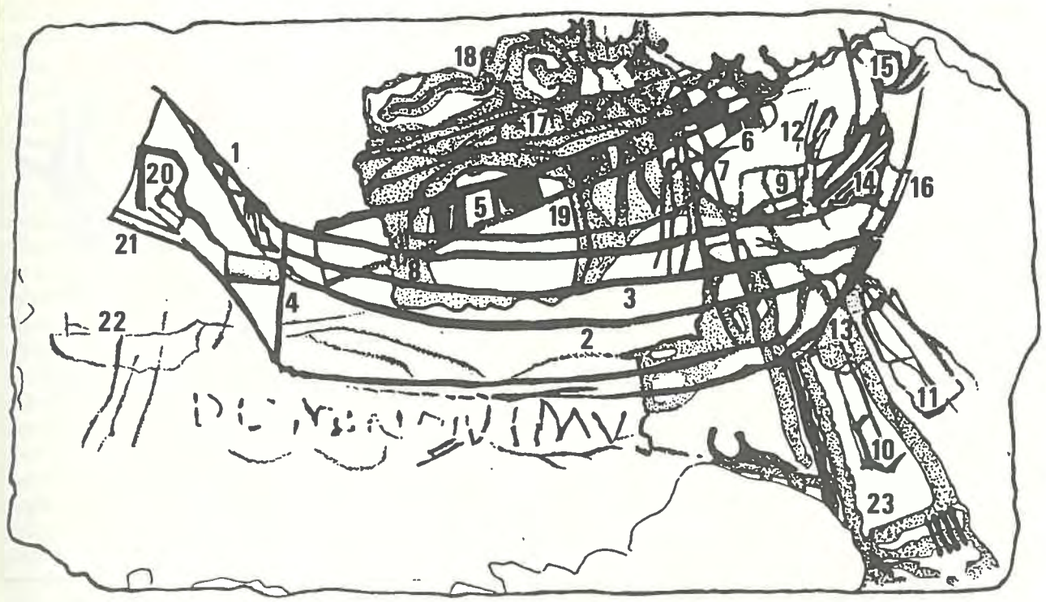


Figure 30. A new sketch of the ship drawing with numbers indicating the features discussed in Chapter 2: (1) the *artemon* mast; (2) lower wale; (3) upper wale; (4) looped cable ?; (5) lowered mainmast; (6) observation basket for lookout man; (7) crutch for mainmast; (8) supports for lower part of mainmast ?; (9) railing around poop deck; (10) port rudder; (11) starboard rudder; (12) looms of steering oars; (13) rope extending to blade of port rudder; (14) diagonal planking in sternpost; (15) *cheniscus* ornament; (16) platform with railings ?; (17) yard; (18) triangular topsails (*sipparum*) ?; (19) loose mainsail; (20) *ferro* plaque; (21) platform for landing ladder; (22) small boat; (23) mooring cables. (S.Gibson).

which Humphreys (1974, p.310) identified as part of the sheave fitting for the halyard. Testa (1976, p.221) has suggested that this feature should be identified as two symbolic letters, M and D, representing the abbreviation of the Latin phrase *manu divina*, 'divine hand'. However, it seems more likely that this feature is a 'crow's nest': an observation basket for a look-out man, which was attached to the upper part of the mast and could be reached by way of a rope ladder (cf. Casson, 1971, p.240, Figs. 151, 191).

The upper part of the mast is represented lowered towards the stern and supported by a feature consisting of two almost vertical parallel lines (Fig. 30:7) which is probably to be identified as a crutch. Rope-gear has been drawn across part of this crutch. This feature was identified by Humphreys (1974, p.310) as a gang-plank or ladder leading down inboard from the top of the bulwarks to deck level, but this is unlikely. Two sets of very small black lines appear to represent the supports for the lower part of the unstepped mast (Fig. 30:8). Crutches for supporting lowered masts are clearly depicted in a number of ship representations, including the Sousse mosaic dating from the 3rd century (Casson, 1971, Fig. 191; Basch, 1987, p.481, Fig. 1106) and the Salerno relief dating from the 3rd or 4th centuries (Viereck, 1975, p.299, Ill. 191). However, the best parallel is a graffito of a ship (shown with mast upright) from Sidi Khrebish in Libya, dated to the second half of the 2nd century (Basch, 1987, p.481, Fig. 1103), which has a crutch shown as two parallel vertical lines between the mainmast and stern. Two additional lines which are visible in front of the mainmast of the Sidi Khrebish ship, may represent lower supports similar to the ones depicted on a much smaller scale in the ship drawing (Fig. 30:8). The lines of the crutch of the ship, like those of the Sidi Khrebish example, are shown extending down to the keel. The drawing of the crutch has largely been eliminated in the present drawing and the area of the two sets of small lines has become transformed into the shape of a horsetail.

The fact that the upper part of the mast was depicted some distance above the steering deck (Fig.

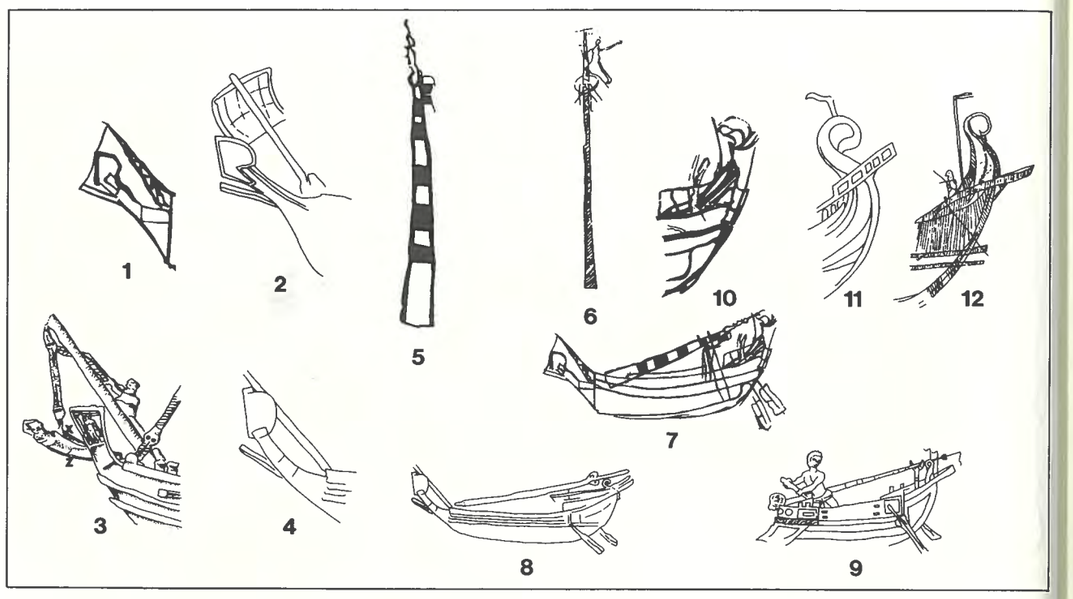


Figure 31. Parallel features for the Jerusalem ship drawing: (1) the prow of the Jerusalem ship; (2) the prow of the ship depicted on a sarcophagus from Sidon, 2nd century A.D.; (3) the prow of the main ship represented on the Torlonia relief (reversed), late 2nd or early 3rd century A.D.; (4) the prow of the Constanza ship, 2nd century A.D.; (5) the mast of the Jerusalem ship; (6) the mast of the Europa ship graffito, 1st century A.D.; (7) the Jerusalem ship (black-painted features only) illustrating its lowered mainmast supported by a crutch; (8) the Constanza ship with lowered mainmast; (9) a ship with lowered mainmast supported by a crutch represented in a mosaic from Sousse (reversed), 3rd century A.D.;(10) the stern of the Jerusalem ship; (11) the stern of the Sidon ship; (12) the stern of the Europa ship. (S.Gibson).

30:9) and is most likely to have been supported by a crutch, must indicate that the unstepping of the mast was done intentionally[21]. It cannot have been broken, as Broshi (1977, p.349) has suggested. If the mast had been broken one would expect its upper part to be shown lying on the surface or the railings of the poop deck. It was normal procedure for retractable masts of Roman merchant ships to be lowered sternwards into an inclined position, unlike Roman warships where the retractable masts were usually supported horizontally on two crutches (cf. Casson. 1971, p.47: n.30; Santamaria, 1984, pp.104–14; Basch, 1987, Figs. 1035, 1098, 1106 and 1108). The heel of the mast was allowed to pivot backwards out of the maststep (not shown in the drawing) which is a heavy timber located at the bottom of the ship's interior, whenever the ship was located offshore or in harbour (Casson, 1971, p.208: n.35). A small sailing vessel with a retractable mast lowered towards the stern is depicted on a mosaic floor from Sousse (Fig. 31:9; Casson, 1971, p.329: n.3, Fig. 191; Rostovtzeff, 1957, Pl. LXII:2; Basch, 1987, Fig. 1106). Merchant vessels with unstepped masts are represented on the Constanza tombstone (Fig. 31: 8; Stoian, 1962, p.31: Fig.9; Basch, 1987, Fig. 1035), dating from the 2nd century, and on the Salerno relief (Viereck, 1975, p.299, Illus. 51). It should be noted that the ship's mast in the Salerno relief is shown lowered towards the bows instead of towards the stern.

In front of the sternpost is an area (Fig. 30:9) which can be identified as the poop deck where the helmsman operated the steering oars (Casson, 1971, pp.179–180; Fig. 154; Viereck, 1975, p.126, Fig. 113:o). In the drawing, three vertical lines can be seen with a horizontal line above them, which may represent a wooden handrail surrounding the raised afterdeck, as Humphreys (1974, p.310; cf. Helms, 1980, p.109) has suggested. Alternatively, these lines may represent a cabin abaft with a doorway (or doorways) in its side (see the stern cabin of the left-hand ship in the Torlonia relief: Basch, 1987, Fig. 1039), but this seems less likely. The railings of the poop deck have disappeared entirely from the drawing.

The ship is represented with two steering oars below the stern: a port rudder on the left (Fig. 30:10) and a starboard rudder on the right (no.11). These were hung on either side of the stern of the ship (Casson, 1971, pp.224–28; Viereck, 1975, p.126, Fig. 113:V and 5). The helmsman operated the tiller-bars from the raised aft deck of the ship. These tiller-bars were socketed into the looms (Fig. 30:12) of the steering oars (Rostovtzeff, 1957, Pl.XXVI:2; Zori, 1966, Pl.12; Casson, 1971, Fig. 155) which were hinged for protection behind the wings of the side-planking on either side of the ship (see the technical drawings in Viereck, 1975, p.60, Fig. 57; p.127, Fig.114). Two rectangular blades are depicted (nos.10 and 11) fixed with ropes to the looms of the steering oars (Casson, 1971, p.228, n.16, Fig. 146). A rope is visible (Fig. 30:13) extending from beneath the wing of the side-planking down to the upper right-hand corner of the blade of the port rudder; a similar rope is connected to the rudder of the left-hand ship on the Torlonia relief (Basch, 1987, p.464, Fig. 1039). Numerous parallels exist for steering oars with their looms and attached blades shown as distinct features (Benoit, 1961, p.124, Fig. 73; Pliner, 1966, Pl.V:1; Rahmani, 1967, Fig.5a, Pl.20:B; Rosen, 1986, Pl.14:A; Pomey 1993, Fig.1). The shape of the rudders has undergone a complete metamorphosis as a result of the changes to the original drawing: the starboard loom for the tiller-bar has disappeared; the loom of the port rudder now extends *over* the side-planking; and the rectangular blades have been re-shaped to form simple extensions of the looms.

The stern has a curved post with diagonal planking below (Fig. 30:14) and is surmounted by a goose-head ornament (Fig. 30:15). The diagonal planking which continues the sheer-lines of the hull abaft, can be paralleled in the ship depicted on the Sidon sarcophagus, dating from the 2nd century, and the Europa ship (Fig. 31: 11–12). The goose-head ornament, or *cheniscus*, was the popular motif for the upper part of the sternpost in Roman merchant vessels (Casson, 1971, pp.347–8, Figs. 150, 154; Viereck, 1975, p.126, Fig. 113:W). The shape of the goose-head, which loops around to the back of the sternpost, can be best paralleled in the Sidon, Europa (Fig. 31: 11–12) and Naevoleia Tyche ships. Helms (1971) suggested that the sternpost ornament may represent a dolphin head or some other animal, but this is unlikely. The line which can be seen extending from the sternpost upwards, above the goose-head, may have been a pole on which a pennant or banner was flown (Casson, 1971, pp.246, 348, Figs. 151, 154, 156, 191; *idem*, 1975, Pl. 71; Benoit, 1961, p.124, Fig. 73; Pomey, 1993, Fig.1). Behind the sternpost there are a number of lines which seem to represent a platform with railings (Fig. 30: 16) similar to those depicted on the Sidon and Europa ships (Fig. 31: 11–12; for additional parallels see Casson, 1971, Figs. 150, 154; Viereck, 1975, p.303, Ill. 66 and 68; Basch, 1987, Fig. 1025). The line above this platform or overhanging gallery was probably a pole for flying an additional pennant or flag. Casson (1971, p.180: n.61) has suggested that this type of overhanging gallery abaft was the place of the ship's latrine[22]. It seems unlikely that our ship had a hybrid combination of the *cheniscus*-and-gallery stern with the axe-blade form of stern (cf. Casson, 1971, Fig. 149) as Humphreys (1974, p.310) has proposed. The area of the stern has been re-drawn in the present version and many of the original details have been lost. The most serious change has been made to the goose-head, which has been transformed into something resembling a sparrow-head!

The yard (Fig. 30:17) was drawn in red above the lowered mast (Casson, 1971, p.232; Viereck, 1975, p.127, Fig. 114). The yard is shown as one piece even though it was probably composite in structure. The zig-zag design visible along the yard may represent gaskets: small cords used for trussing a brailed-up sail upon the yard (Casson, 1971, p.70, Figs. 144, 151; Zori, 1966, Pl.11; Rosen, 1986, Pl. 14:A). Additional features (Fig. 30:18) are depicted furled and piled up on top of the yard. These were drawn in red but had black highlighting added in at least one place. They may represent triangular topsails (*sipparum*) of the type which appear in the ships on the Sidon and Torlonia reliefs (Basch, 1987, pp. 462, 464, 471). Part of the mainsail (Fig. 30:19) can be seen, below the yard, extending in semi-circular fashion behind the lowered mast and down to deck level. This is unusual because sails were normally stored away after having been furled and well before the mast was lowered onto a crutch (see the Constanza ship: Stoian, 1962, p.31, Fig. 9; and the Salerno ship: Viereck, 1975, p.299, Ill. 5; and Casson, 1971, p.239). In fact, the mainsail is depicted in a way which can be paralleled best in pictorial representations of ships under sail (Fig. 32). Only very slight changes have been made to the yard and the furled topsails in the present version. However, the semi-circular drawing of the loose mainsail (Fig. 30:19) has been lost.

The *artemon* mast (Fig. 30:1) is clearly depicted inclined over the bows (Casson, 1971, p.240, Figs. 144, 147, 149, 151, 156; *idem*, 1975, Pl. 71; Viereck, 1975, p.126, Fig. 113:U and T, p.301, Ill. 6; Rahmani, 1967, Fig. 5a, Pl.20:B). This small mast was a common feature of Roman merchantmen (Fig. 31:1–4). Its small sail can only have served as a steering sail. The square *artemon* sail may be shown furled and secured with gaskets along the mast but this is not certain. Alternatively, the zig-zag design may indicate that the mast was made up out of a number of segments lashed together (cf. the mast of the Cucuron ship graffito: Pomey 1993, Fig.1).

The prow has a projecting stempost which is capped at its top end by an extremely distinctive upright feature (Fig. 30: 20) which Helms (1971) described as 'bluff bows' and Casson (1971, p.175; *idem* 1975, p.15, Pl.71) as a 'massive block-shaped adornment'. Humphreys (1974, p.309) suggested

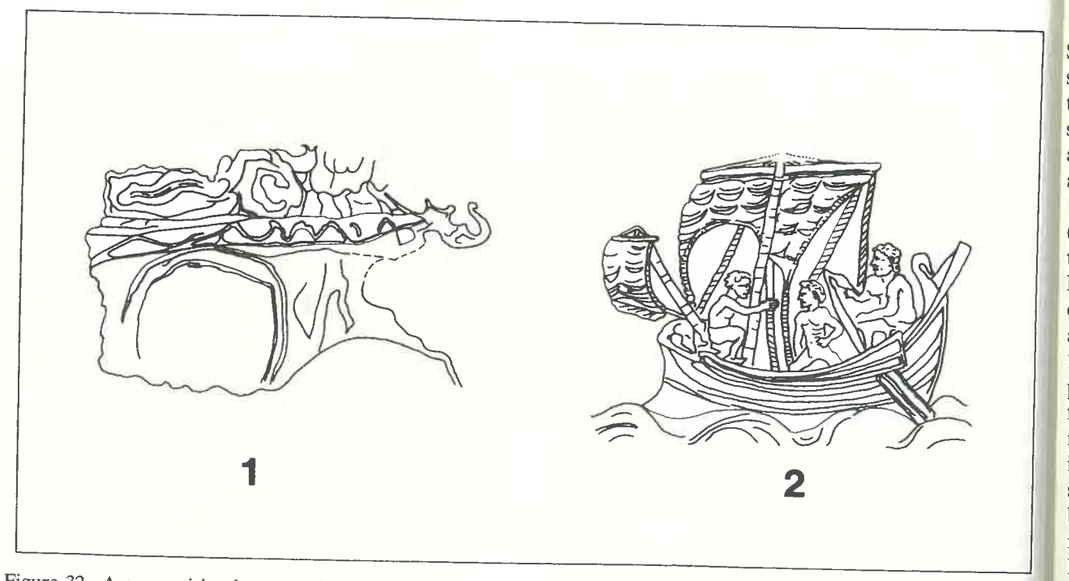


Figure 32. A comparision between the pictorial representation of the yard and sails of the Jerusalem ship (1) with those of a ship depicted on a sarcophagus from Ostia of the 3rd century A.D.(2). (drawing by S.Gibson partly based on Basch, 1987, Fig. 1062).

that this feature was 'a light construction clad in leather' serving as protection for a lookout man (cf. Contenau, 1920, p.35; Le Gall, 1955, pp.47–8). Even though the breadth of this feature is unknown, it is difficult to believe that it would have been wide enough to have served as an observation platform. Indeed, Basch's study of this projecting element (the *ferro*) shows that it was most likely to have been a detachable blade-like metal plaque which served both ornamental and religious functions (Basch, 1987, p.457, Figs. 1019, 1029:F, p.463, Figs. 1033, 1034:A-C, 1035, pp.468–9, Fig. 1054, p.481, Fig. 1103). The sides of these blades were sometimes decorated with representations of divinities or with name devices (Casson, 1971, p.345). The blade of the ship is clearly depicted socketed into the upper end of the stempost. A separating line shown between the *ferro* blade and stempost here and in the Sidon and Constanza ships (Fig. 31:1–3) would confirm Basch's suggestion (1987, p.463) that the blade was a detachable feature. One of the earliest examples of a merchantman from Israel with a *ferro* blade is a graffito from Tell Ṣandaḥannah which probably dates from the end of the 2nd century B.C. (Gibson, 1992, p.29). Basch (1987, p.468) has shown that such blades disappeared from ship representations during the course of the 2nd century A.D. It is quite significant that not one of the 27 ships depicted in the Ostia mosaics (dated A.D. 190–200) has a *ferro* adornment.

Below the plaque of the stempost is a feature represented by two parallel lines shown extending from the bows forward (Fig. 30:21) connected to a line running down from the head of the *artemon* mast. Similar features are known from a number of other ship representations, such as the Sidon, Torlonia and Constanza ships (Fig. 31:2–4), and their function has been the subject of much discussion (Le Gall, 1955, pp.47–8; Casson, 1971, Figs. 144, 145; *idem* 1975, Pl. 71; Benoit, 1961, p.124, Fig. 73; Basch, 1987, p.459, Figs. 1919, 1025, 1026:E, 1033, p.463, Figs. 1035, pp.466–7, Figs. 1038, 1043, 1044, 1045, 1046). Humphreys (1974, p.309) described these features simply as 'bowsprit' and 'stay' but was unable to identify their functions. Broshi (1977. p.349) described the line extending from the top of the small mast as tackle for managing the *artemon* sail. According to Basch (1987, p.463) the feature jutting out from the bows is to be identified as a retractable landing ladder which was held in place by a rope fixed to the extremity of the small mast (note that two separate ropes are depicted on the Cucuron ship graffito: Pomey, 1993, Fig.1). The rope mechanism with its pulleys is well represented in the bows of the main ship in the Torlonia relief (Fig. 31:3). Basch (1987, pp.466–7) has pointed out that the feature visible in front of the bows of this Torlonia ship can be separated into two parts (Basch's elements 'x' and 'z'). If the top part is to be identified as the landing ladder, as Basch has suggested, then we would suggest that the lower part is most likely to have been a platform on which the landing ladder would have rested. This may explain why the feature projecting from the bows in the Sidon and Constanza ships (Fig. 31:2,4) is shown separated by a line into two parts. The drawing of this end of the Jerusalem ship has been somewhat simplified in the present drawing. The most significant change is the disappearance of the zig-zag lines along the small mast.

A series of fairly faint lines located under the bows (Fig. 30:22) have been identified as a drawing of a tender with oars (Helms, 1971). According to Humphreys (1974, p.309) it may have been a type of dingy or tug used to tow a ship to a berth inside a harbour (cf. Casson, 1971, pp.248–9, Figs. 143, 144; Benoit, 1961, p.124, Fig.73; Viereck, 1975, p.301, Ill.57). Helms (1980, p.109) suggested identifying a stern-rudder in a line slanting down from the right side of the craft to the first two letters of the inscription. However, our examination of the stone shows this line to be a natural vein in the stone. The boat seems to be depicted with a cutwater on the right, a back-curving stern on the left and three oars. Hence the boat was probably facing right and moving under oar towards or around the ship rather than away from it. Perhaps the boat was stowed around the bows so as to not interfere with the landing from the principal gangway (Fig.30: 23) to shore. Probably the best parallel is a small boat depicted on a mosaic floor from Migdal dating from the 1st century (Steffy and Wachsmann, 1990, 115–118, Figs. 17.1–2; for an alternative view, see Raban, 1988). The small boat no longer exists in the present drawing.

A number of lines representing waves are visible across the hull at the front, as well as below, the ship. Some of the letters of the inscription were drawn *over* the lines of the lower waves. All the waves have been eliminated in the present drawing. These waves were not seen by Testa (1976, p.221), which is in keeping with his suggestion that the ship was floating on a metaphysical, not actual, sea.

The various features drawn in red next to the rudders (Fig. 30:23) were regarded by Broshi (1977, p.349) as inexplicable and so no attempt at identification was made. Helms (1980, p.107, Fig.4:B) suggested linking this 'trailing confusion of sinopia coloured objects' with the furled sails and stays above the mast. He also put forward the suggestion that they may represent 'nets' or 'gear trailing in the wake of a storm damaged ship'. In our opinion, the two main red lines shown extending from the deck of the ship towards the lower right-hand corner of the stone, are to be identified as long mooring cables[23], perhaps extending to the edge of a quay (cf. Casson, 1971, p.252, Figs. 146, 150). The left-hand mooring line was drawn with rippled edges in an attempt, we believe, to indicate the contours of a rope. Some of the lines at the lower end of the cables could be identified as ground tackle. The four parallel black lines, for example, may represent a mooring bollard (cf. Casson, 1971, pp.368–9). Just above the chipped area of the stone is a feature which may depict part of a quayside projecting into the sea or perhaps harbour storehouses; it has four enclosed cubicle-like areas. The U-shaped feature above it is of uncertain identification; it may have been a mooring fixture or perhaps a harbour altar. Alternatively, Kingsley (personal communication) has suggested that they may represent an attempt to depict a sea monster with open jaws or tusk-like projections, lurking beneath the stern. Some of these features no longer exist in the present drawing, others are now considerably blurred.

The drawing clearly represents a merchant vessel in harbour. This conclusion is based on the following features: the unstepped mainmast which has been lowered on a crutch; the mainsail which is shown in the process of being furled; the *artemon* sail which has been taken down from the small mast; the presence of a small boat off the bows; and the mooring lines which have been secured to the quayside. It seems unlikely that the drawing represents a wrecked, or seriously storm-damaged, ship as Broshi has suggested (1977, p.352; Broshi and Barkay, 1985, p.127). According to Broshi (1977, pp.349–351), the mainmast must have been broken as a result of a storm, because no other merchantman representation is known which has both a retractable mainmast *and* an *artemon* mast. However, although representations of this sort are indeed rare, a tombstone relief is known from Constanza (Fig. 31:8), dating from the 2nd century, which depicts a merchant vessel with a lowered mast as well as a small raked mast over the bows (Stoian, 1962, p.31, Fig.9).

Testa (1976, pp.219–21) has given the ship a theological interpretation, that the ship is represented floating on a metaphysical sea under the guidance of angels and the hand of the invisible Christ. However, such an interpretation seems far-fetched and unnecessary. The artist, we believe, was clearly depicting a ship which had docked after reaching its destination (Caesarea?[24]); a ship that the artist had seen, or had travelled on. The nautical detail reflected in the drawing shows that the artist had a considerable knowledge of ships, and it is therefore very likely that he was a sailor. If a form of abstract symbolism had been intended, then the emphasis in the drawing would have been on theological symbols and not on nautical detail. The artist drew in certain details that a landlubber would definitely not have shown: details such as the way the *ferro* plaque was socketed into the top of the stempost, the way the crutch is depicted so that it can be seen through the body of the ship and the way one of the hinged rudders was held to the keel with a rope fixed to the middle of the oar. It is interesting to note how the artist has combined within the same drawing the

depiction of three separate activities: the furling of the mainsail, the removal of the yard and the unstepping of the mainmast. In reality the mainmast could only be lowered *after* the furled sails and yard had been stored in the hold.

The ship has been dated variously. Díez (1984, p.33) has suggested that it derives from the time of Herod Agrippa (A.D. 41–43). According to Humphreys (1974, p.309) the ship belongs to a type of merchant vessel known in the Mediterranean area during the period from the late 1st century B.C. to the 2nd century A.D. Helms (1980, p.120) has proposed that the drawing was made by a pagan sailor during Hadrianic times, c. 135 A.D. He believes (1980, p.105) that the ship's forecastle is typical of sailing vessels in use from the early 1st century to about 200. Testa (1976, p.221) has dated the drawing, on the basis of the Latin inscription, to the late 3rd to early 4th century. However, R.S.O. Tomlin (personal communication: 21 February 1992) has pointed out that while it is generally difficult to date capital letters, there is nothing distinctively 4th century about the inscription. A Constantinian date for the drawing is also proposed by Corbo (1981–2, p.113), although he believes that the stone with the drawing was placed in its present position in wall 1 during medieval times. According to Broshi (1977, p.352) 'no feature in the ship . . . can be dated any closer than the first century A.D.'. However, he also believes that the drawing was executed by a Christian pilgrim at the time of the construction of the Constantinian basilica, circa 330 (see also Broshi and Barkay, 1985, p.124; Bahat, 1984–5, p.52).

The best parallels for our ship are representations of merchant vessels dating from the 1st and 2nd centuries (see Basch, 1987, pp.457–92, for a general survey of vessels from this period).[25] These include the Naevoleia Tyche ship relief from Pompeii which dates from the period preceding A.D. 79 (Casson, 1971, Fig. 151; Viereck, 1975, p.302, Ill. 64; an excellent discussion appears in Basch, 1987, p.457–61, Figs. 1018, 1026); a rather schematic representation of a ship on a coin issued during the reign of Nero, dating from A.D. 67 (Casson, 1975, p.15, Pl. 71); a ship painting from the 1st century from Pompeii (Maiuri, 1958, pp.18–22; Ward-Perkins and Claridge, 1976, No. 252); the ship decorating the short end of a sarcophagus from Sidon, dating from the 2nd century (Contenau, 1920, Pl. VI; Rostovtzeff, 1957, Pl. XLIX:2; Casson, 1971, Fig. 156; Viereck, 1975, p.303, Ill. 69; Basch, 1987, pp. 462–3, Fig. 1031); the ship depicted on the Constanza funerary stele, dating from the 2nd century (Stoian, 1962, p.31, Fig. 9; Basch, 1987, p.463, Fig. 1035); the Europa ship graffito, dating from the 1st century (Benoit, 1961, p.124, Fig. 73; Basch, 1987, Fig. 1051); a graffito of a ship from Sidi Khrebish, dated to between A.D. 150–200 (Basch, 1987, p.481, Fig.1103); the marble Torlonia relief depicting two ships, dating from the end of the 2nd century or early 3rd century (Rostovtzeff, 1957, Pl. XXVI:1; Casson, 1971, Fig. 144, detail in Fig. 146; Viereck, 1975, p.302, Ill. 65; Basch, 1987, pp.463–67, Fig. 1038); and a ship on a mosaic floor from Ostia, dating from A.D. 200 (Casson, 1971, Fig. 145: ship depicted to the right of the lighthouse).

All of these ship representations possess features which generally resemble the Jerusalem ship in one way or another. However, the Sidon and Constanza ships appear to be the closest of the parallels. Significantly, all three merchant vessels possess projecting bows with stemposts capped with *ferro* plaques and small *artemon* masts. Both features are important for dating purposes as the *ferro* plaque does not appear in ship representations after the 2nd century and the *artemon* mast becomes considerably larger towards the end of the 2nd century (Basch, personal communication, 1 Oct. 1991; Basch, 1987, pp.468, 481). The earlier date for the *ferro* is provided by a ship graffito from Tell Ṣandaḥannah, dating from the late 2nd century B.C. (Gibson, 1992, p.29). Both features also appear in the somewhat schematic graffito of a merchantman dating from the 1st century B.C., from Jason's Tomb in Jerusalem (Rahmani, 1967, Fig. 5a, Pl. 20:B).

In addition to those merchantmen discussed above, the *ferro* plaque also appeared on other types of sailing craft, notably the merchant galley depicted on the Arezzano relief dating from the 1st century (Casson, 1971, Fig. 139) and the tender, depicted alongside a large sprit-rigged vessel, on the Istanbul relief dating from the 1st or 2nd centuries (Viereck, 1975, p.301, Ill.57). In conclusion, our ship drawing must date from pre-Constantinian times, probably from the 1st to 2nd centuries.

The Inscription

Shortly after the discovery of the ship, Helms discussed with Father Pierre Benoit of the École Biblique in Jerusalem, how the inscription should be read (Helms, 1980, p.109). Benoit saw DOMINE IVIMUS, and interpreted this as a Christian reference to Psalm 121:1 (Massoretic text, 122:1), while Helms believed that the letters were ISIS MIRION-IMUS: a Latinised spelling of the vessel's name. This latter reading was presented in the first publication of the drawing (Humphreys, 1974, p.310).

As we have argued above, the lines of the drawing were transformed or enhanced at some point between 1971 and 1975. Testa, who cleaned the drawing in 1975, also saw DO MINE IVIMUS but does not refer to Benoit's opinion that the reference was to a psalm of pilgrimage. Testa therefore appeared to be an independent interpreter.

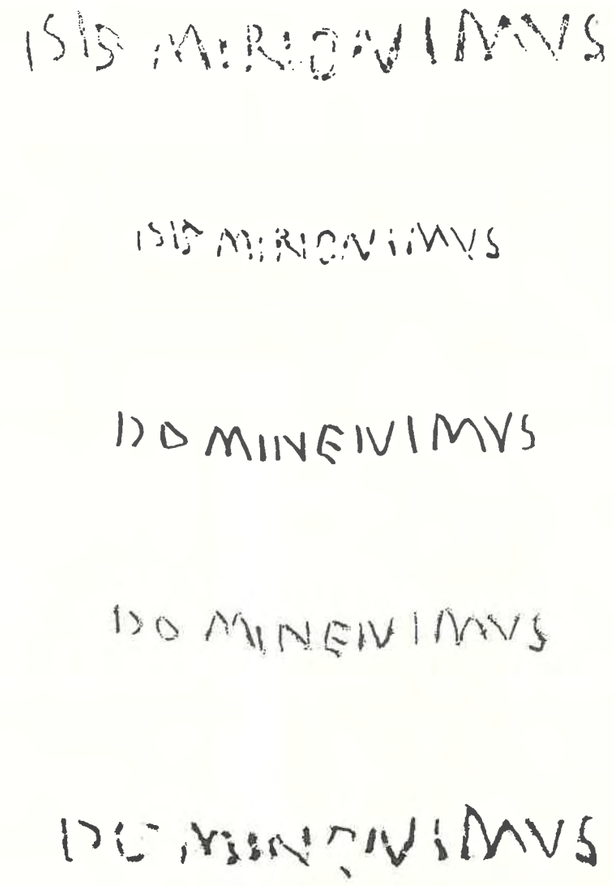


Figure 33. Five different versions of the Latin inscription below the Jerusalem ship drawing (different scales): (1) by Helms (after Bennett, 1974, Fig. 2); (2) by Helms (after Helms, 1980, Fig. 4); (3) by Testa (after Testa, 1976, p. 224); (4) by Gibson in 1975 (after Broshi, 1977, Fig. 1:B); (5) by Gibson in 1987 based on photographs taken in 1971. (S.Gibson).

According to Testa, there is a gap between the O and the M of DOMINE. The DO is thereby set apart. Testa considered this to be a cryptographic reference, using as an unstated basis for his suggestion the symbolic gaps found in some early Christian catacomb inscriptions in Rome. In many of these, a string of letters may be set apart within a word or name for the purpose of signalling a Christian message.

For Testa, the DO set apart shows that the word *domine* refers not to just any lord, but to God. There are no parallels in Christian epigraphy which would support such an interpretation. If a double-entendre is meant, then DO on its own should surely be read as 'I give/offer'. However, it is not at all clear that the letter O should be rendered as a small, triangular shape, as we shall see below.

When Helms first drew the inscription (see Fig. 33:1) he presented it in accordance with his reading. Since Benoit had already understood the letters to read DOMINE IVIMUS some of the marks shown in Helms' drawing must be interpretation, even though he believed he was making a completely accurate copy. Helms' second version of the inscription (Fig. 33:2), based on photographs, differs from his first in small but significant ways. Benoit never published his version. Testa's presentation of the inscription shows the lines as he cleaned them (Fig. 33: 3), while Gibson's drawing (Fig. 33:4) shows not only these lines but also the remains of the original inscription underneath, as one can see on the stone today, as well as in the infra-red photograph. A close inspection of the actual stone, together with these drawings, the 1971 photographs and the infra-red

photograph, enables us to read the original inscription with some degree of accuracy, even though it has been obscured.

In her article of 1974, Humphreys (1974, p.310) suggested that the reading ISIS MIRIONIMUS was a phonetic transcription in Roman letters of the Greek ΙΣΙΣ ΜΥΡΙΟΝΥΜΟΣ, 'Isis of the 10,000 names'. She stated there, without references, that the goddess was often called *polyonymos* or *myrionymos*. Humphreys personally believed that this reading was not as likely as ISIS MINONIMUS, 'Isis named the Moon', which Helms (1980, p.109) accepted as a possibility. He noted that RI is graphically close to N, and that 'Isis, also called the Moon' is one of the goddess' myriad titles which was known until the 6th century A.D., though no references are given in this instance either.

Isis, in fact, is never qualified by the masculine *-os* ending. She is known from inscriptions as *Myrionyma* (*ILS*, no. 4362, 4376). This has been transliterated into Latin as *Isis Myrionima* (*CIL* III, 882), with 'i' replacing the second *upsilon*. Likewise, in Greek an *iota* is attested in place of the second *upsilon* (*ILS*, no. 4361), reflecting the fact that *upsilon* and *iota* were pronounced similarly at this time. But it is a peculiar mistake to associate the name of a goddess with a *masculine* adjective. Helms (1980, p.110) himself recognised this as a problem before proposing that a sailor of uncertain nationality wrote the Greek name of the vessel in Latin letters, but he does not provide a good reason why this sailor may have changed the Greek feminine *-a* ending to a Latin masculine *-us*. A proper transliteration of the Greek word would have been MYRIONYMA or MIRIONIMA. The Latin parallel cited by Helms (1980, p.110), *Isis Geminiana*, shows us that Roman ships were named after the goddess, but does not help in solving the gender problem of this reading. It is true that ships were dedicated to a particular deity and named accordingly, e.g. 'Aphrodite the Protectress' (Maiuri, 1958, Pl. IV) or *Helioserapis* (*CIG*, 8514). Inscriptions on anchors reflect the popular protective deities: 'Zeus the Highest', 'Aphrodite of the Harbour', 'Aphrodite our Rescuer', 'to Venus', 'to Jupiter' (Casson, 1971, p.255, n. 126). The wine god Liber (Bacchus) could also be relied upon (Rostovtzeff, Pl. XXVI, p.160). A ship named *Isis Myrionyma* is therefore possible, but whether the inscription here should be read as a faulty rendering of this name is questionable. Upon close inspection of the letters in the photographs and drawings, moreover, this reading becomes unconvincing.

In the 1971 photographs which, contrary to what was believed by Broshi, are of good quality, it is easy to see how Helms and Benoit could read the inscription in the two ways they did. The only incontestable letters, at first sight, are the final four: IMUS (Fig. 34). The fifth letter from the end wa read by Helms and Humphreys as N, but the le vertical is by no means clear. It would be difficult t support a reading in which there are two occurence of this letter in the inscription, since they woul appear in two completely different forms, on upright and the other slanted. While the characte can sometimes appear differently in the sam inscription, the angle of all the upright strokes o this inscription are reasonably consistent, and if thi letter was N then the norm would be broken. The internal evidence would therefore suggest that we have I followed by V and not N.

The I is extremely indistinct in the photographs and one could argue that no letter exists here. There is a smudge which continues almost to the top of the parallel red markings, but whether this is a dirt mark or charcoal pigment is impossible to distinguish. Helms' first drawing has a small black mark to the left of the V, which would appear to be the only remains of the vertical stroke. The small line he places on top of this is much less sure, and the other mark put in by Helms to continue the line in his revised version (Fig. 33:2) is certainly an addition for the sake of clarity. The present drawing on the stone (cf. Fig. 33:4) is blurred around the bottom of the I, which may indicate the original letter. There is definitely no evidence in the original photographs of a strong vertical I as shown by Testa.

Moving now to the beginning of the inscription, we immediately strike the most controversial part of the debate about the reading. Where Helms and Humphreys read ISIS, Benoit read DO. The initial vertical stroke is very clear, and there is a well-defined curve to the right of it which Helms saw as the bottom part of the S and Benoit as the curve of the D. Helms drew the top part of the Sin his first version, but in his second he omitted it. Instead, he suggested it by a slight kink at the top of the curve. It appears from the photographs (Fig. 34) that there is neither a definite line nor a slight kink; the line used for the top of the S by Helms is a vein in the stone, the contour of which continues to the left of the vertical stroke. Even without this top curve, the letter may yet be S, except that it is somewhat high. The final S in Helms' drawings is shown to lie in continuity with the general line of the inscription, which dips in the middle but does not have an erratic placement of letters. The second vertical is much less clear than the first, and may not be an upright letter at all, but rather a small part of a curve. The second S, as Helms read it, is not evident in the photographs. There is a line which lies almost horizontal to the right of the vertical marking, and this can be interpreted as the base of an S, but the other lines used by Helms to form it are less sure. Helms draws a stroke which comes down diagonally from left to right at the top of the letter. In the second

Figure 34. The Jerusalem ship inscription in a photographic enlargement by A.Urruty based on a photograph taken in 1971.

Figure 35. Vestiges of the inscription evident from analysis of the 1971 photographs. (J.E.Taylor).

version this is exaggerated. Helms interpreted this as part of the stern rudder of the small boat. We have argued above (p. 41) that this side of the boat is to be identified as the prow and not the stern. In any case, the cleaned drawing clearly shows that this line is part of a vein. The middle curve of the S is indistinct and also appears as a natural vein in the photographs (Fig. 34), parallel to the 'stempost' vein. The markings that remain incontestable in this area could once have formed parts of the following letters: B, D, E, L, O. An I and an S are possible, but the letters would have to be squashed together. A single letter appears to us more likely.

The following letter is clearly M. Dirt on the stone when it was originally photographed obscured part of the right side of the letter, but it may still be seen as a smudge behind the present lines (cf. Fig. 33:4).

The fourth letter must be I because the space between what precedes and follows would allow for no other letter. A very narrow T would be possible, but unlikely in view of the fact that the following letter is a consonant. A string of consonants together would be improbable in a piece of popular writing, as opposed to an official inscription.

There is no curve shown on the photographs that would indicate an R, and no trace of it is found on the cleaned stone. The second drawing by Helms minimises the size of this curve so that, with the 'I', an N here seems more likely. Helms considers N an alternative reading (see above). On the basis of photographs alone it is hard to determine whether there is a diagonal line within the letter N or just a mark. Fortunately, there is a smudge on the stone today which confirms it.

Finally, the sixth letter has two lines meeting at a right angle in the top left corner and probably some kind of remains along the right side which could indicate either B, D, E or O. A vowel appears more likely.

In conclusion, the incontestable letters of the inscription are probably (with three uncertain letters) as follows: D-MIN--VIMUS (compare our final reconstruction of the inscription in Fig. 35 with an earlier version made in 1987 in Fig. 33:5). How we fill in the gaps depends to a large extent on interpretation.

In Latin, the ending *–vimus* belongs to a first person plural Perfect verb. The writer is referring to a completed action. The verb *deminvimus* 'we made (the ship) smaller' is possible, but this would be semantically incomplete, and one would have to omit letters. *Dominavimus,* 'we ruled', would mean reading the sixth letter as A, which is difficult. It seems more likely that we have two words, the second one being the Perfect verb, since no verb beginning with D would otherwise fit. The extent of this verb depends on how the first part of the inscription is read. Even if the writer intended the Vocative *domine* it is just possible that he wrote an abbreviated form of the word: DOMIN, DOM, DO or D, are found in official inscriptions (*TLL*, V, 1907–9). The first word could also be *domi*, 'at

home'. If the third I is omitted as being too doubtful, then the inscription might read *domi novimus*, 'we restored (the ship) at home'. However, that the artist should speak of 'home' and write in Latin is, in a Jerusalem context, not very likely, unless we have here a freed slave of remarkable literacy.

Certainly the most likely reading must be that of Benoit, *domine ivimus*, but his interpretation is not so probable. *Domine* was a very common word. It was used to refer to the master of a household or estate, to the manager of a group or team or of an organised activity, to a king or an emperor, to gods, including that of the Jews and Christians. It was used as a term of address, meaning 'lord', 'master' or 'sir'. It was used of a lover as a term of affection (see *OLD*, p.571). Most interestingly, it was used to mean a shipowner-captain (Casson, 1971, p.391; *ILS* 339, 6140), the *dominus-navis* (cf. Cicero, *De Inv.* 2:154).

It would therefore be wrong to assume that the word *domine* here necessarily refers to the Christian God. In the Latin versions of the Psalms, God is naturally referred to as *domine*, but the fact that we have a form of the common verb 'to go' and such an epithet here (as in Psalm 121:1) should be of no particular Christian significance. We should not interpret all inscriptions in which the address 'lord' is found with the verb 'to go' as Christian, especially if there are no associated cryptographic Christian signs or symbols, such as the cross, *chi-rho*, Christian names or proclamations, or any other indications that the author-artist might be a Christian. A pilgrim would have been likely to depict the ship with its mast upright and its yard horizontal, to show the form of a cross. Minucius Felix wrote that Christians saw the sign of the cross in the masts of a ship when it was carried along with swelling sails (*The Octavius* 28). The ship was a popular symbol in Christian art during the 3rd and 4th centuries (see Stuhlfauth, 1942). It represented the security of the Church in the midst of the chaotic sea of life. But a ship docked in the harbour with its sails furled and its mast down is hardly the product of a Christian mind.

In Latin, Psalm 121:1 reads: *In domum Domini ibimus*, 'we shall go to the House of the Lord'. *Domine ivimus* is by no means a clear allusion to this passage. If the inscription was a reflection of the psalm, it is necessary to accept that the author made the rare substitution of *v* for the *b* of the second word, changed the Genitive *Domini* to Vocative and deleted *in domum*. This verse does not have anything to do with a sea-going voyage. While the psalm is one of pilgrimage, it is therefore possible that the ship indicates the means of travel used by the pilgrims (so Broshi and Barkay, 1985, p.125) but, considering the verse, it would have been more relevant if the pilgrim had drawn a building. The verse mentions 'the House of the Lord', the Temple, which was in ruins after A.D. 70. The Martyrium was considered to be a kind of substitute (Eusebius, *Vita Const.* 3:28; Ps. Cyril, *In Myst.* 1:11; Jerome, *Ep.* 46:5) but since the artist apparently succeeded in drawing this picture and inscription before the edifice was erected, the reference would be anachronistic.

Recently, another Christian interpretation has been proposed which rejects Benoit's supposition that the psalm is referred to. Gerhard-Wilhelm Nebe (1987) has linked the ship drawing and inscription with the 'stilling of the storm' pericope of the synoptic Gospels (Mark 4:37–41; Matt. 8:23–27; Luke 8:22–25). Nebe takes Broshi's suggestion that the mast was broken as certain, and believes that the threatened danger of the ship sinking on the Sea of Galilee has been indicated by this means. In the Latin version of Matt. 8:25, Jesus is referred to as '*domine*' (*domine, salva nos, perimus*, 'Lord save us, we are perishing'), as he is in many places elsewhere. Nebe supports Benoit and Broshi's view that the *ivimus* of the inscription could just as easily be read as the Future tense *ibimus*, but Nebe does not adequately explain why the author of the inscription uses *ire*, 'to go', rather than *perire* 'to perish'. 'Lord, we will go' (with the implication that we will perish) does not refer to the 'stilling of the storm' pericope any more easily than it refers to the psalm, especially if the mast is not broken after all. The ship depicted is, moreover, nothing like the small boat found beside the Sea of Galilee (see Wachsmann, Raveh, Cohen and Steffy, 1988; Wachsmann, 1986–7; *idem*, 1988, 1990) nor to the cutwater boat in the Migdal mosaic dated to the 1st century A.D. (Steffy and Wachsmann, 1990), and the internal logic of the inscription and drawing argues against a reading of the verb as Future in tense.

If the inscription is to be read as 'Lord, we will go', then the most natural conclusion we would draw is that the author is about to depart on the ship, and yet the ship in this drawing has just completed its voyage. Even though the substitution of the *v* for a *b* in Latin inscriptions is found (see Nebe, 1987, pp. 157–160), a Future tense verb is not consistent with an image that shows a completed action. The juxtaposition of the drawing of a ship in port after its voyage and the inscription which would naturally be in the Perfect tense is logical. It is also logical to presume that since a ship is specified in the drawing, then the verb relates to this depiction. It would be unusual to have an inscription and a drawing completely divorced in meaning from one another. The internal logic of the inscription and the drawing taken together would require us to see the words as a response to a command that required the author and his colleagues to sail in this ship. They have arrived at the destination the *domine* asked them to go to, hence 'master, we went'.

The order may have come from the emperor, a noble or any other person in authority. The author may have been addressing the ship's deity, Serapis or Jupiter perhaps, who somehow commanded the sailors to travel to Palestine. The 'lord' could have been the author's master if he was a slave, or his captain if he was a sailor. If the stone dates from the 1st century, then we may even have a Jewish author, who has come with his companions to Jerusalem from the West, though the annual feast days brought numerous pilgrims from throughout the Empire to Jerusalem, and not all of them were Jewish. Consequently, notices banning Gentiles from entering the sacred enclosure were written in Greek and Latin (Josephus, *War* 5:5:3, 11:2:4). An author whose intention was to visit the 'House of the Lord' during the Second Temple period would be even more likely if the inscription were to be read *Domino ivimus*, 'we came to the Lord', but even this is hypothetical. The 'lord' could have been any master who commanded people whose usual residence was the West, a member of the Roman administration, even the Procurator. The use of Latin in 1st-century Judaea is known from official inscriptions (cf. Hahn, 1906). It was the language of the government and the military and of travellers from the western part of the Roman Empire. Latin was the official language of Jerusalem, renamed Aelia Capitolina, after Hadrian put down the Bar Kochba Revolt and founded a Roman *colonia* there in A.D. 135 (Millar, 1990, pp.29–30). There are a wide range of situations in which our author could be placed. The point is that a Christian interpretation is only one among many. If we are correct in placing the execution of the drawing in the 1st to 2nd centuries, then such an interpretation would be extremely unlikely.

The Date of the Jerusalem Ship Drawing and Inscription

It should not be presumed as a matter of course that the decoration of the stone was completed whilst it was in its present location. In fact, there are reasons to doubt whether the scenario for the execution of the drawing underground is logistically credible. As we saw above, Broshi (1977A, p.352; *idem*, 1977C, pp.43–4) believes that the drawing was executed by a Christian pilgrim in a period after the exposure of the Hadrianic substructural walls and the building of the Constantinian platform, namely during the course of the construction of the foundations and stylobate walls of the basilica. Helms (1980, p.111) has suggested that the subterranean area was exposed only for a year, but the encrustations in the surface mortar of the Constantinian walls indicate that the area was filled in very soon after their construction. This would limit the time available for the execution of the drawing considerably. One must imagine a hive of activity in the area as builders made haste to complete their operations. While the cave was accessible during this time, it would have been an uncomfortable place in which to undertake the detailed depiction of a ship. Furthermore, the inscription has the tenor of a proclamation. Proclamations, whether to gods or humans, were scribbled to be seen, as they are today. The writing of slogans, names and points of view by the populace was a well-known phenomenon in the ancient world. It was particularly employed by pilgrims, who carved their names and pious remarks on the walls of shrines, caves and churches (cf. Piacenza Pilgrim, *Itin.* 4). The supporters of Procopius in Constantinople attacked Valens with *grammasin*, 'graffiti', (Libanius, *Or.* 20:25) and John of Ephesus tells a story of how a monument under construction by Justin II acquired an unflattering inscription (*Hist. Eccles.* 3:24). However, it would have been inconsistent with the nature of popular *grammasin* for someone to go to the lowest levels of the building activities during the construction of the Constantinian basilica, to an area that would soon be covered over and filled, in order to draw an intricate picture and to herald not only his arrival but others with him. He would have had to polish the stone and complete the drawing whilst perched on a partially demolished wall amid a flurry of activity, dust, darkness and noise, his work perhaps illuminated by poor artificial light. Bennett's comment (1974, p.309) that Helms copied the drawing 'under great difficulty and in some danger' would have to apply also to the original artist, if this scenario is to be adopted.

These observations also hold true for the situation in Hadrianic times. The builders of this period were constructing substructural foundation walls that would be covered over by the temenos surrounding the temple of Venus. In both this and the Constantinian period it is very hard to imagine that the builders would have taken kindly to a visitor coming in from outside to sit down in the middle of their operations to draw a picture on a stone. An additional problem with a scenario which has the drawing done *in situ* during Hadrianic times is that we do not know how high wall 2 was built, and it must remain a possibility that it covered the relevant stone, which was re-exposed only during the time of Constantine.

Some of these logistical problems could be overcome if it were to be suggested that the drawing was completed by one of the builders themselves. However, the first person plural verb used in the inscription would imply that the artist was part of a company who had all travelled by sea from somewhere (in the West) and was probably still with his

companions. The nautical knowledge evident in the drawing shows clearly that the artist had a very keen interest in merchant ships (see above, p.41). Perhaps some sailors arrived at Caesarea, and somehow ended up doing construction work in Jerusalem/Aelia.

There is no need to linger long over speculation about these awkward scenarios. We have already seen how both the details of the ship and the inscription together are consistent with a date in the 1st to 2nd century, but the real clue to what may have happened is the very type of stone used for the drawing. There is an important difference between the Constantinian and Hadrianic walls. Both of them used stones that had originally been employed elsewhere in structures that they demolished or had been demolished prior to the building activities. But it is only in Constantinian walls 4 and 6 (Corbo, 1981–2, Photo 102)[26] that one finds large smooth-faced ashlars without margins, with one exception: the stone on which was drawn the ship. Wall 1, in which it is found, is clearly Hadrianic. Judging by the sequence of fill which can be seen in the western baulk trench excavated in 1971 (see Fig. 14: B, 4–6), wall 1 must pre-date the backfills of the Constantinian foundation trench. Therefore, it would appear that the smooth-faced ashlars found re-used in the Constantinian walls come from the Hadrianic superstructures, demolished in the second decade of the 4th century. The stone with the ship drawing must then have been one which the builders rejected, which then became a cornerstone of the foundations in the excavated area. It would have been sitting in a pile of ashlars waiting to be used, possibly singled out as a reject. Perhaps a merchant sailor and his companions who had journeyed inland from Caesarea, selling or buying goods in Aelia Capitolina for shipment to the West, used the ashlar to make a drawing and to write an inscription which proclaimed to his *domine* that he and his companions went as they had been instructed. Perhaps the *domine* was one of the party. The message may be as obscure as those on the walls of modern cities. The quality of the lines of the drawing indicate that the stone was not subject to much weathering, and so it must have been employed in wall 1 soon after its execution.

The stone is now chipped at its bottom right side. This was how it was recovered in 1971, from beneath the layers of Constantinian fill, but the drawing was clearly executed before the chip marred its surface as it cuts into details around the features of the 'quay', drawn in red. This chip must then have occurred either at the time the stone was inserted into wall 1 or during the course of Constantinian re-building in the area.

In conclusion, we believe with some degree of confidence that the ship drawing was made during the 2nd century A.D. and that it is not the work of a Christian pilgrim of the early 4th century. It is impossible to do more than propose a hypothetical reconstruction of the circumstances which led to its execution. The precise meaning of the inscription and the identity of the artist remains a mystery.

Part Two

CHAPTER THREE

The Area of the Church from the Iron Age to the Early Roman Period

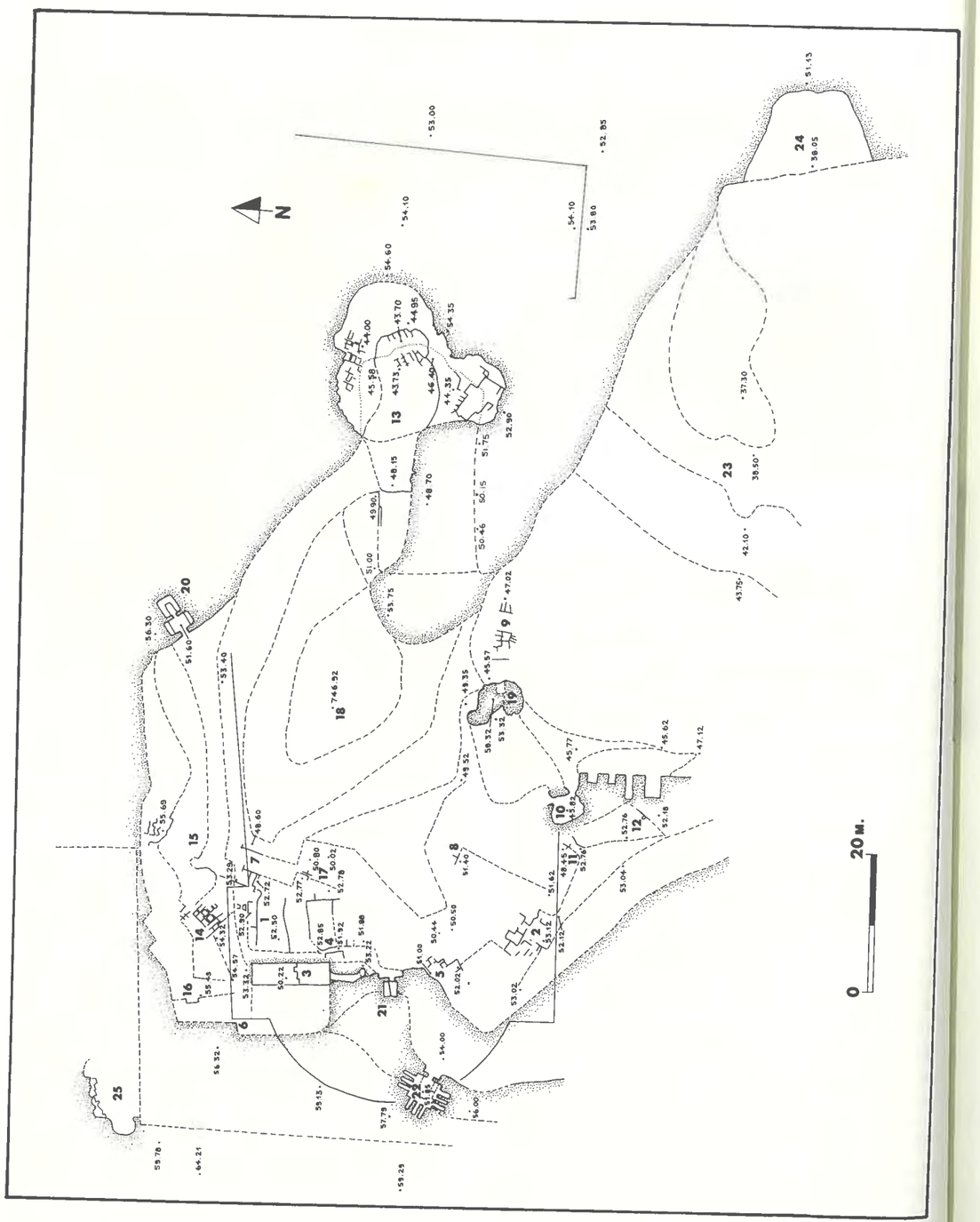
New Testament scholars, as well as Christians everywhere, are interested in knowing what the traditional area in which Jesus was crucified and buried looked like in his day. In this chapter, we will consider how much can be known about the physical features of the landscape in this part of Jerusalem from the Iron Age until the end of the 1st century, with special consideration given to the topography of the region in the time of Christ.

The Quarry

Excavations conducted below the floors of the Church of the Holy Sepulchre and its associated buildings have shown that the entire area was a large quarry for *meleke* and *mizzi ḥilu* building stone from as early as the Iron Age (see Fig. 36). The quarry was originally located on the southern slope of the North-Western Hill of Jerusalem (between the 750 to 760 map contour lines), with an uneven floor descending towards the south into the upper western part of the Transversal Valley (Fig. 37: 3,4,6,13). It extended over a total area of 200 metres from north to south, and for 150 metres from east to west (though for a different estimate see Schein 1981, p.24). The stratum of *mizzi ḥilu* stone lay above the *meleke*, but it is now very difficult to trace the levels of these respective strata in the remaining rock.

Since the late 19th century, a number of attempts have been made to produce detailed maps showing the rock levels in and around the church (Schick, 1885, Figs.IX–X, XII–XIII; idem, 1898, p.144: Sections AB to OP; Vincent and Abel, 1914, Pl.XII; Dalman, 1935, p.345). These early maps have to be used with some caution as distinctions were not always made between observed fact and hypothetical reconstruction. One such hypothetical feature that cannot be substantiated by the present evidence is a broad rock-cut ditch or fosse, running in a north-south direction east of Calvary, depicted on maps published by Schick and later by Vincent and Abel. The most recent map of the quarry prepared by Corbo (1981–2, Pl.67) is the best to date, but it too contains a number of hypothetical features, particularly around the Rock of Calvary. For example, there is no evidence for the existence of a rocky slope on its east and south sides; the area may be much more irregular. Our map (Fig. 36) represents a summary of all the available evidence put together using information gathered from a variety of different sources. All the spot heights represented on this map are elevations above sea level[27]. However, while it shows the spot heights of the rock levels in the area of the Church of the Holy Sepulchre, it does not pretend to be a plan of the earliest shape of the quarry as such, or of the 1st century topography. Such a plan cannot yet be drawn. In the first place, there are still too many unknowns in regard to the rock levels in this region. The area is characterised by extreme irregularity, so that further surprising features and protruberances may come to light as excavations continue. In the second place, the quarry was exploited during later periods, for example during the building activities of Hadrian and Constantine, so it is difficult to determine in some cases whether rock cuttings were part of the original quarry or belong to a later period; the Constantinian cuttings left in the rock, for example, are indistinguishable from those of the Iron Age (cf. Corbo, 1988, p.419).

There is now considerable evidence to support Barkay's suggestion (1985–86, p.39) that the earliest quarry in the area of the church was abandoned and replaced by sporadic extra-mural suburbs during the course of the late Iron Age. Iron Age pottery, from the 8th–6th centuries B.C., has been found in fills overlying bedrock in three different parts of the church: in the Chapel of St. Vartan (see above, p. 16); in Trench IV (Fig. 36:7) on the north side of the church (Corbo, 1981–2, Pl.23, Photos 11–13, and Photo 24: nos.1–6 for examples of Iron Age pottery); and in an area examined by Coüasnon below Transept No.47 (Fig. 36:2) to the south of the Tomb of Jesus (Schein, 1981, p.24; Corbo, 1981–2, Pls. 16, 17; see also Bahat, 1986, p.28). Quarried bedrock with clear signs of separation channels and semi-detached blocks, was found by Lux (1972, pp.191–2, Plans 2, 4, Figs.3–5; Vriezen, 1977, p.76)



at the bottom of a deep shaft excavated below the Lutheran Church of the Redeemer to the south of the Church of the Holy Sepulchre (Fig. 37:6). The fills from immediately above this area of quarrying included numerous examples of unstratified late Iron Age pottery, particularly from the 7th century B.C., together with a few examples from the Persian period. A cluster of stones which can be seen in Lux's southern baulk section, about 0.50 m. above the quarry floor, may represent the remains of a wall. An Iron Age quarry covered by 3.5 metres of deposits dating from the 7th century B.C, was also found by Kenyon (1974, pp.228–230, Fig.37) during her excavations at site C in the Muristan (Fig. 37:7) to the south of the Church of the Redeemer. Evidence for other late Iron Age extra-mural suburbs which replaced earlier quarry activities have also been found on the Western Hill (see Gibson, 1987, pp.81–85 and, for a different view, Tushingham, 1987, pp.137–8, *idem*, 1988, pp.142–3).

The large cave which is located on the east side of the Chapel of St. Helena (Fig. 36:13) is not the only subterranean quarry in the vicinity of the Church of the Holy Sepulchre. In May 1888, Schick found the entrance to a subterranean quarry of similar proportions below the Russian property about 50 metres to the south-east of the Chapel of St. Helena (Fig. 36:24; and Figs. 38–40). The cave lay on the eastern side of a deep shaft excavated by Schick (1889 A, pp. 67–8; 1889 B, p.110: key plan, section A)[28] and has a total depth of 12.60 m. from the top of the overhanging rock ceiling to the surface of the bedrock floor below. The height from floor to ceiling is 10.80 m. The cave was cut into the side of a rock scarp extending in a north-south direction. It was found blocked with soil and debris and has never been excavated. A wall built of rough boulders with 'no proper facing', 2.95 m. thick, was discovered blocking the upper part of the cave entrance. An additional wall segment built of 'hewn stones' was found by Schick immediately above the rock ledge; it may have been a part of the Second Wall defensive line which was either erected by one of the Hasmonaean rulers or by Herod in the late 1st century B.C. Schick (1889 A, p.67) noted that the rock surface could be seen immediately below the present day street level to the east of the cave (Fig. 40:7; a similar observation was made by Schein, 1981, p.24).

A quarried overhanging scarp has recently been investigated by Corbo (1988, p.419, Figs. 6–9) in the area of the Patriarchion, to the north-west of the Church of the Holy Sepulchre (Fig. 36:25). This overhanging scarp resembles the cave behind the Chapel of St. Helena, in that it has traces of blocks removed vertically from the walls. The earliest use of this area of quarrying is unknown since Corbo was unable to excavate the fills overlying the bedrock floor. What is certain, however, is that this area was blocked up with soil and hidden from view by walls at the time of the Constantinian building activities in the area.

The caves found in the vicinity of the Church of the Holy Sepulchre compare with others under Jerusalem. Similar caves are found to the north, and were created also as a result of quarrying. Probably

Figure 36. Plan of ancient quarrying, caves and rock-hewn tombs in the Church of the Holy Sepulchre and immediate vicinity (western end of the church shown in outline): (1) quarrying below the northern transept No.46 (Corbo, 1981–2, Pl.10, Photos. 31, 34 and 37); (2) quarrying with separation channels and disengaged blocks, below the southern transept No.47 (Corbo, 1981–2, Pls. 16, 17); (3) rock cuttings in floor of underground chamber No. 68 (Corbo, 1981–2, Pl.18, Photo 51); (4) quarrying near pilaster No. 64 of Rotunda, south-east of underground chamber No. 68 (Corbo, 1981–2, Pl.19:1); (5) quarrying for squared blocks between the Edicule and column No. 52 of the Rotunda (Corbo, 1981–2, Pl. 19:2–3; Photos 53–55); (6) quarried corner in Area 116 north of the Rotunda (Corbo, 1981–2, Pl.21:2); (7) quarrying for squared blocks of stone in Trench IV north-east of the Rotunda (Corbo, 1981–2, Pl.23, Photos 11–13; for Iron Age pottery from above quarry, see Photo 24: items 1–6); (8) quarrying in Trench XI south-east of the Rotunda (Corbo, 1981–2, Pl.24:3); (9) quarrying for squared blocks of stone east of the Rock of Calvary (Katsimbinis, 1977, p.209; Corbo, 1981–2, Pls. 40, 41, 43, 44, Photo 97); (10) rock-cut cave below the facade of the church (Coüasnon, 1974, p.39; Corbo, 1981–2, Pls. 46, 52, 54, Photo 4); (11) quarrying below the east side of the church facade (Corbo, 1981–2, Pl.47); (12) rock-cuttings below the southern courtyard (Corbo, 1981–2, Pl. 55); (13) quarrying in the Chapel of St.Vartan and the Cave of the Invention of the Cross (Corbo, 1981–2, Pls. 57, 58, Photos 104, 109; Broshi and Barkay, 1985, Fig. 2); (14) quarrying with partly-detached blocks in eastern part of Area 100a (Corbo, 1981–2, Pl.61:2, Photo 62); (15) quarrying in Areas 115 and 160 (Corbo, 1981–2, Pl.62:2, Photo 48); (16) quarrying in Area 101 (Corbo, 1981–2, Pl. 63:1 a-b); (17) quarrying for squared blocks of stone in Trench VIII (Corbo, 1981–2, Photo 19); (18) bedrock surface at elevation 746.92 in Trench VI on the east side of the main church (Corbo, 1981–2, Pl. 67); (19) the Rock of Calvary (Coüasnon, 1974, p.39; Katsimbinis, 1977, p.209; Corbo, 1981–2, Pls. 40, 41, 43, 44); (20) rock-cut Iron Age tomb below the Coptic monastery (Schick, 1885, pp. 170–3; *idem*, 1887, pp. 154–5; Vincent and Abel, 1914, Pl. xii; Kloner, 1980, p. 146; Broshi and Barkay, 1985, p. 117); (21) the Tomb of Jesus; (22) reconstructed *kokhim* tomb south-west of the Edicule (Clermont-Ganneau, 1884, pp. 319–331; contrary to Corbo, 1981–2, Pl.67, our reconstruction places the tomb entrance in the south-east wall); (23) quarrying below vaulted cistern in the Monastery of St. Abraham (Schick, 1889B, p.112, Section AB; Vincent and Abel, 1914, Pl. xii); (24) large cave below the Russian property south-east of the church (see Figs. 38–40, below; Schick, 1889A, pp. 67–8); (25) quarrying behind the Patriarchion (Corbo, 1988, Figs. 6–9). (S.Gibson).

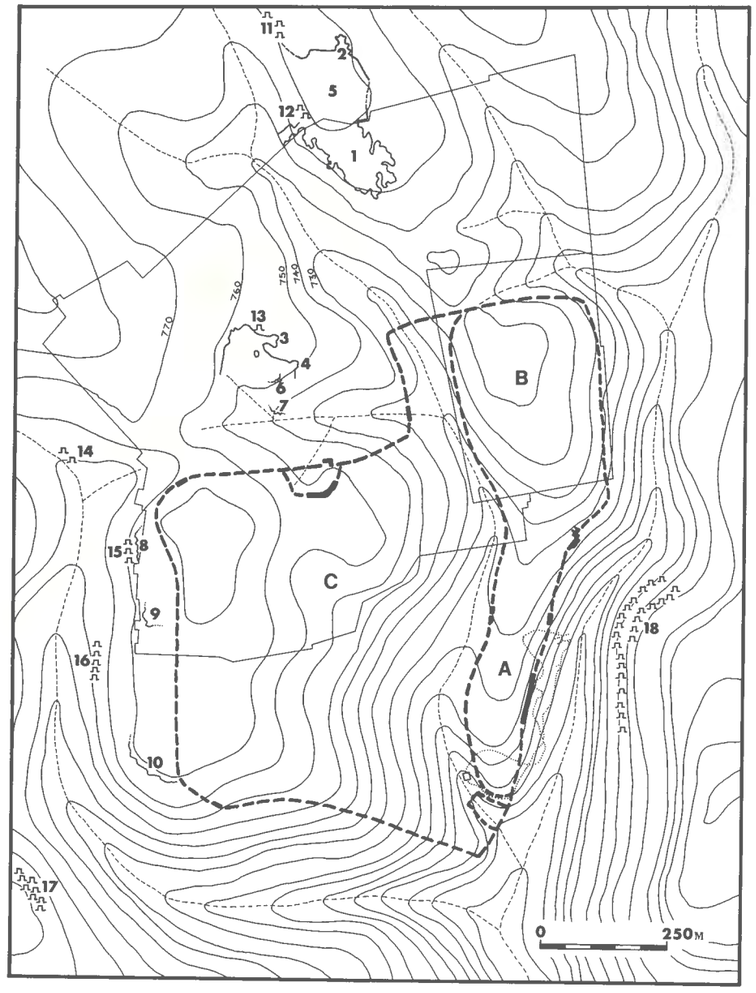


Figure 37. Plan of the city of Jerusalem during the Iron Age: (A) the South-Eastern Hill ('City of David'); (B) Mount Moriah; (C) the Western Hill. *Subterranean 'closed' quarries*: (1) the Cave of Zedekiah or Solomon's Quarries (Barkay, 1986B); (2) the Grotto of Jeremiah (Schick, 1902); (3) Chapel of the Invention of the Cross and Chapel of St. Vartan; (4) cave investigated by Schick (Figs. 38–40, below; 1889A, pp. 67–68). *'Open' quarries*: (5) quarry extending between Cave of Zedekiah and Grotto of Jeremiah; (6) quarrying in the Muristan below the Church of the Redeemer (Lux, 1972, pp. 191–2); (7) quarrying in the Muristan: Area C (Kenyon, 1974, pp. 228–230); (8) quarrying along the western city wall (Broshi and Gibson, forthcoming); (9) quarrying in the Armenian Garden (Tushingham, 1987, pp.137–8); (10) quarrying along the slopes of Mount Zion (Gibson, 1987, p.81). *Iron Age tombs*: (11) tombs north of Damascus gate (Barkay and Kloner, 1976, pp. 55–57); (12) tombs along western edge of quarry (Mazar, 1976, pp. 1–8); (13) tomb below Coptic Monastery (Schick, 1885, pp. 170–3); (14) tombs in the Mamillah area (Reich et al., 1991, pp. 20–21); (15) tombs along the western city wall (Broshi et al., 1983); (16) tombs in the Hinnom Valley (Davis and Kloner, 1978); (17) tombs at Ketef Hinnom (Barkay, 1986A); (18) tombs at Silwan (Ussishkin, 1970). (S.Gibson).

the largest and best known subterranean quarry in Jerusalem is the Cave of Zedekiah (Fig. 37:1) which is also known as 'Solomon's Quarries'[29]. The cave is located to the east of the Damascus Gate and extends from below the present city wall towards the south. The cave has a total depth of 22.50 m. from the top of the overhanging rock ceiling to the surface of the quarry floor below. The height from floor to ceiling is 15.00 metres. This cave may have been the 'Royal Caverns' or 'Cave of the Kings' mentioned by Josephus (*War*, 5:4:2). The earliest use of the cave probably dates back to the Iron Age (Barkay, 1986 B, pp.104–5; though for an alternative view which places the earliest use of this cave in the Early

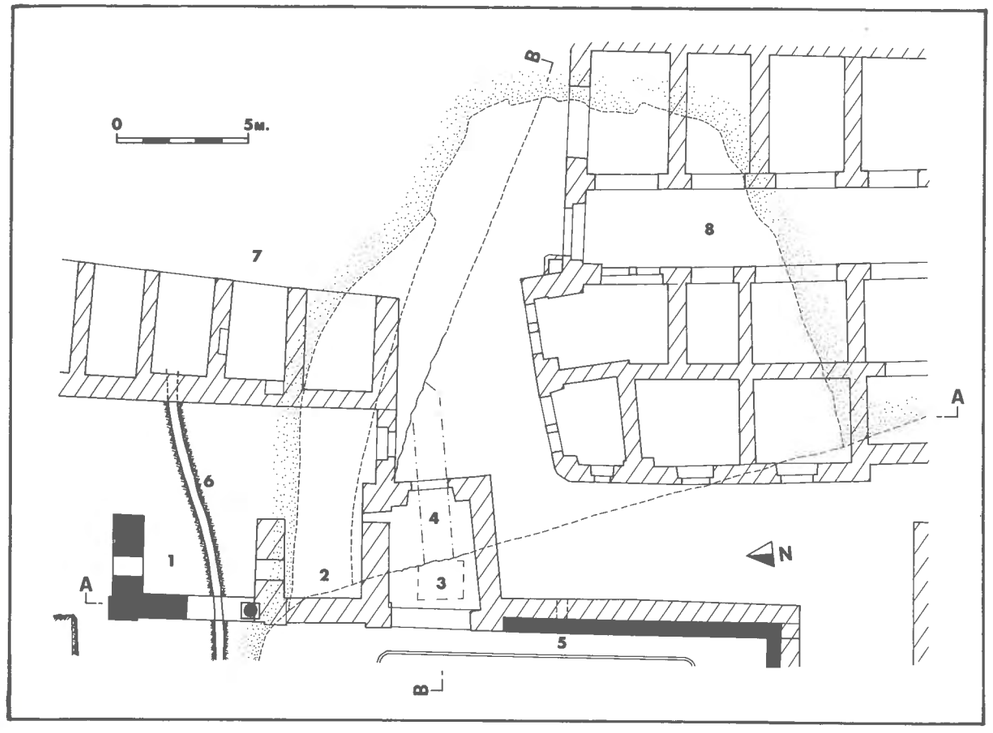


Figure 38. Plan of cave investigated by C.Schick in May 1888, near the south-east of the Church of the Holy Sepulchre. This plan and two sections (see Figs. 39–40, below), newly traced by S.Gibson, are based on Sketches Nos. 11–13 by Schick drawn in December 1888 to a scale of 1:100 (PEF Archives/Schick/ 197/1–3). They remained unpublished because of their 'incomplete state' (cf. Schick, 1889A, p.68: note 1): (1) remains of ancient gateway presently located in the Russian property; (2) pavement; (3) vertical shaft excavated by Schick at Point B. A wall of 'hewn stones' was found just above the rock ledge; (4) horizontal gallery excavated from the vertical shaft eastwards, through a wall 2.95 metres thick built of rough boulders with 'no proper facing'; (5) Schick's 'Byzantine wall' at Point B-B built of well-dressed blocks and preserved to a height of six courses above debris and soil. A blocked drainage conduit was seen at Point CX but it was not clear whether it had been built or rock-cut. A 'new' (i.e. 19th century) cistern is located immediately to the west of the ancient wall; (6) a rock-cut drainage channel below the ancient gateway; (7) Khan ez-Zeit Street with shops; (8) Suq el-Atarin with shops.

Roman period, see Ben-Dov, n.d., pp.13–16). Another subterrananean quarry (Fig. 37:2) is located to the north of the Cave of Zedekiah and is known as the 'Grotto of Jeremiah' (Schick, 1902). This cave has a total depth of 23.70 m. from the top of the overhanging ceiling to the surface of the quarry floor below. The height from floor to ceiling is 13.50 m.

The presence of Iron Age pottery at a number of different locations on the quarry floor below the Church of the Holy Sepulchre (Fig. 36:2,7,13), clearly indicates that the present overall shape and extent of the quarry must have been reached by the 8th century B.C., if not before. The quarry was originally opened up from the western upper end of the Transversal Valley and was then extended northwest. The quarry floor rises about 18 metres from south to north, and about 15 metres from east to west. The Rock of Calvary (Fig. 36:19) was left protruding above the quarry floor though traces of quarrying may be seen all around it (Coüasnon, 1974, p.39; Katsimbinis, 1977, pp.207–8; and Corbo, 1981–2, Pls. 40–1, 43–4), except to the south-east where excavation has not yet been undertaken. Similar 'pillars' of unquarried rock have been found in ancient quarries elsewhere in the vicinity of Jerusalem, for example in Nebi Samwil and el-Bireh (Merrill, 1908, pp.369–71; cf. de Groot, 1913, Photo No.3). As Corbo (1988, p.398) observes, there is no reason to support the idea proposed by Coüasnon (1974, pp.39–40, cf. Bahat, 1986, p.32) that the Rock of Calvary was a *nephesh* or burial monument for a 'tomb' situated off (Corbo's) cistern A. This cave (Fig. 36:10) is not necessarily a tomb, and the

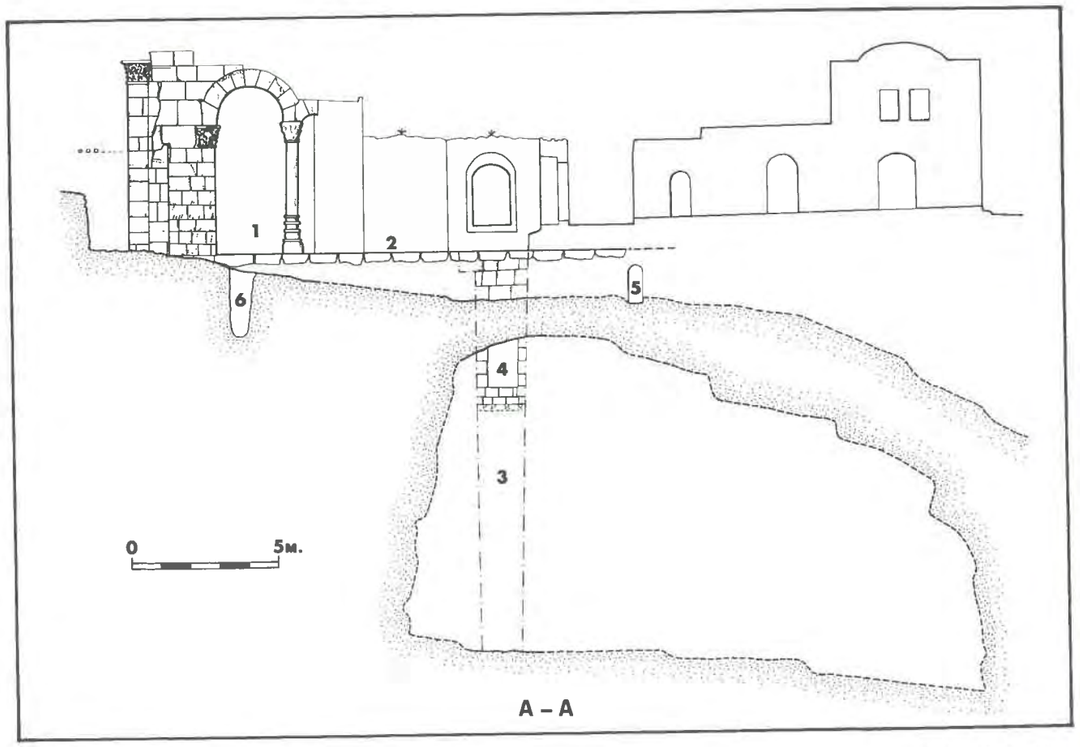


Figure 39. Cave south-east of church: Section A-A (tracing by S.Gibson based on original sketch No. 12 by C.Schick; see Fig.38). Dotted areas represent bedrock.

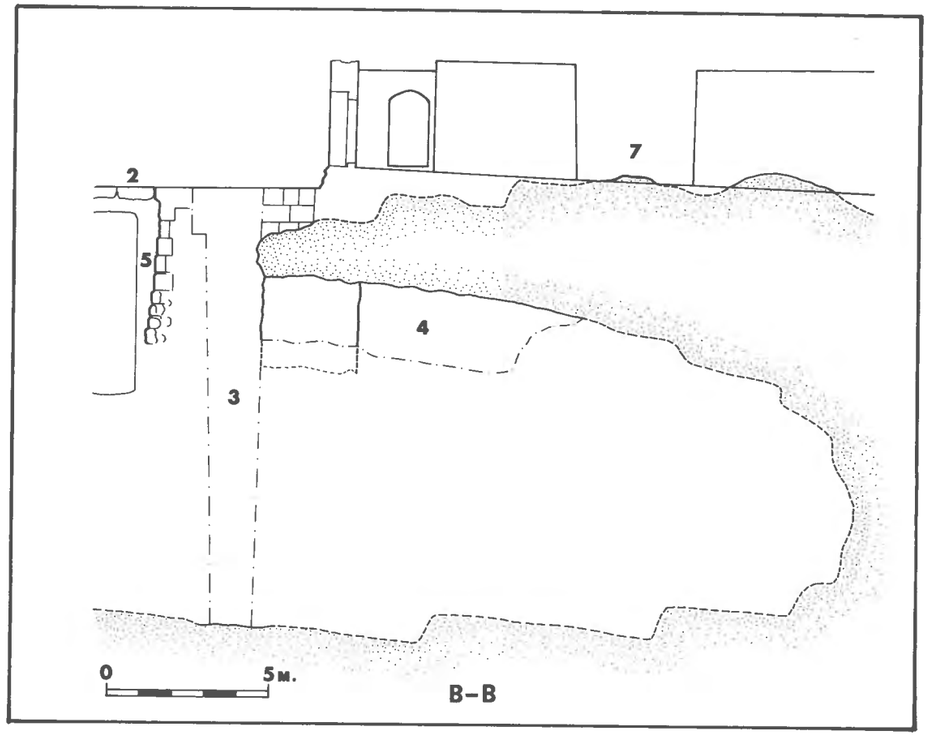


Figure 40. Cave south-east of church: Section B-B (tracing by S.Gibson based on original sketch No. 13 by C.Schick; see Fig.38). Dotted areas represent bedrock.

Rock of Calvary is far too raw and irregular to have been a *nephesh* (as in the monuments of the Kidron Valley).

Following the abandonment of the quarry, or parts of it, tombs were cut into some of the external scarps. A burial cave is known from the area of the Coptic Monastery (Fig. 36:20) and its plan suggests that it should be dated to the Iron Age, 8th–6th centuries B.C. (Schick, 1885, pp.170–3; *idem*, 1887, pp.154–5; Vincent and Abel, 1914, Pl.XII; Kloner, 1980, p.146; Broshi and Barkay, 1985, p.117). The quarry probably continued to function during the late Hellenistic period and down to the late 1st century B.C., as Corbo (1984, p.412) has suggested. It may have been a major source of building stone during the construction of the northern parts of the First Wall during the late 2nd century B.C., and for the eastern parts of the Second Wall during the course of the 1st century B.C. As we shall see, the area had a number of different uses, both as a region of graves and as a plot of cultivated land. There is no reason to suppose that quarrying activities preclude its use for other purposes.

Golgotha and the Rock of Calvary

The area takes on special importance as being the traditional place of Christ's crucifixion, c. 33 A.D. The name of the area is mentioned in Mark 15:22 and Matt. 27:33 (and cf. John 19:17–18) as meaning 'place of a skull'. The Aramaic word 'Golgotha', meaning 'the skull' (Lat. *calva*) would then be only part of the entire name of the area 'place of a skull'; one needs to supply the Aramaic construct form 'place of', *mᵉqom*, to properly translate the Greek of the evangelists back into the Aramaic 'place of the skull' or 'skull-place': *mᵉqom-gulgltā'* (cf. Syriac *gagultā'*). Mark's rendering of the word *gulgltā'*, which the others copied, appears slightly wrong, as if he has made a faulty transliteration of the actual Aramaic letters, but it is more likely that he was not transcribing what was written but what was *said*. 'Golgotha' would then be an accurate rendering of how the local Aramaic-speaking people of Jerusalem pronounced the emphatic form of the word (the ending *-ā'* shows that it cannot have been Hebrew and has to be Aramaic). The Jerusalem population appear to have dropped the second *lamed* and modified the vocalisation of the vowels.

The Evangelists give the meagre details of the area in much the same manner, though Matthew gives a rather garbled version of Mark, and Luke omits the Aramaic name.

Mark 15:22 And they bring him to the Place Golgotha, which is translated 'Place of a Skull'.

Matt.27:33 And having come to a place referred to as Golgotha, which is referred to as 'Place of a Skull' . . .

Luke 23:33 And when they came to the place called 'Skull', they crucified him there.

John 19:17–18 And carrying his cross himself he went out to the place referred to as 'of a Skull', which in Hebrew is Golgotha.

The tradition that Jesus was crucified in between two others (Luke. 23:33, John. 19:18; Matt. 27:38, Mark. 15:27) would argue against Golgotha being identified with the outcrop of rock now identified as such (Fig. 36:19). It is too narrow to permit three crosses, and is too steep to allow easy access (Fig. 41). It stands 12.75 m. above the surrounding rock to the east, 8.97 m. above the rock to the north, and 5 m. above that to the west. Ancient authors tried to overcome this problem by conjecturing that the steps probably constructed some time before the 6th century on the north side of the rock were those which Jesus used to ascend to its summit (Piacenza Pilgrim, *Itin.* 19, cf. Theodosius, *De Situ*, 7a and see Corbo, 1981–2, pp.96–7, Pls. 40–45). After the Greek Orthodox excavations of 1988, when the marble covering of 1810 was removed from the top of the Rock, the present authors were able to determine that from the back of the present altar to the ornamental screen over the 11th century wall dividing the eastern and western parts of the Rock, the surface measures only 1.7 m. and from north to south 3.5 m. (Fig. 42). The logistical problems which would arise if one were to place the entire crucifixion on this narrow protrusion are extreme.

The Rock of Calvary is mostly constituted by the upper stratum of *mizzi ḥilu* limestone found elsewhere in the quarry, but an intermediate stratum between this and the lower *meleke* bed may be seen in its lower portion (Wilson, 1865, p.52). The *mizzi ḥilu* stone is white with red veins, and it is probably these veins which are referred to by later Christian pilgrims as traces of Christ's blood (Piacenza Pilgrim, *Itin.* 19: Icelandic Guide (lines 4–5); translated

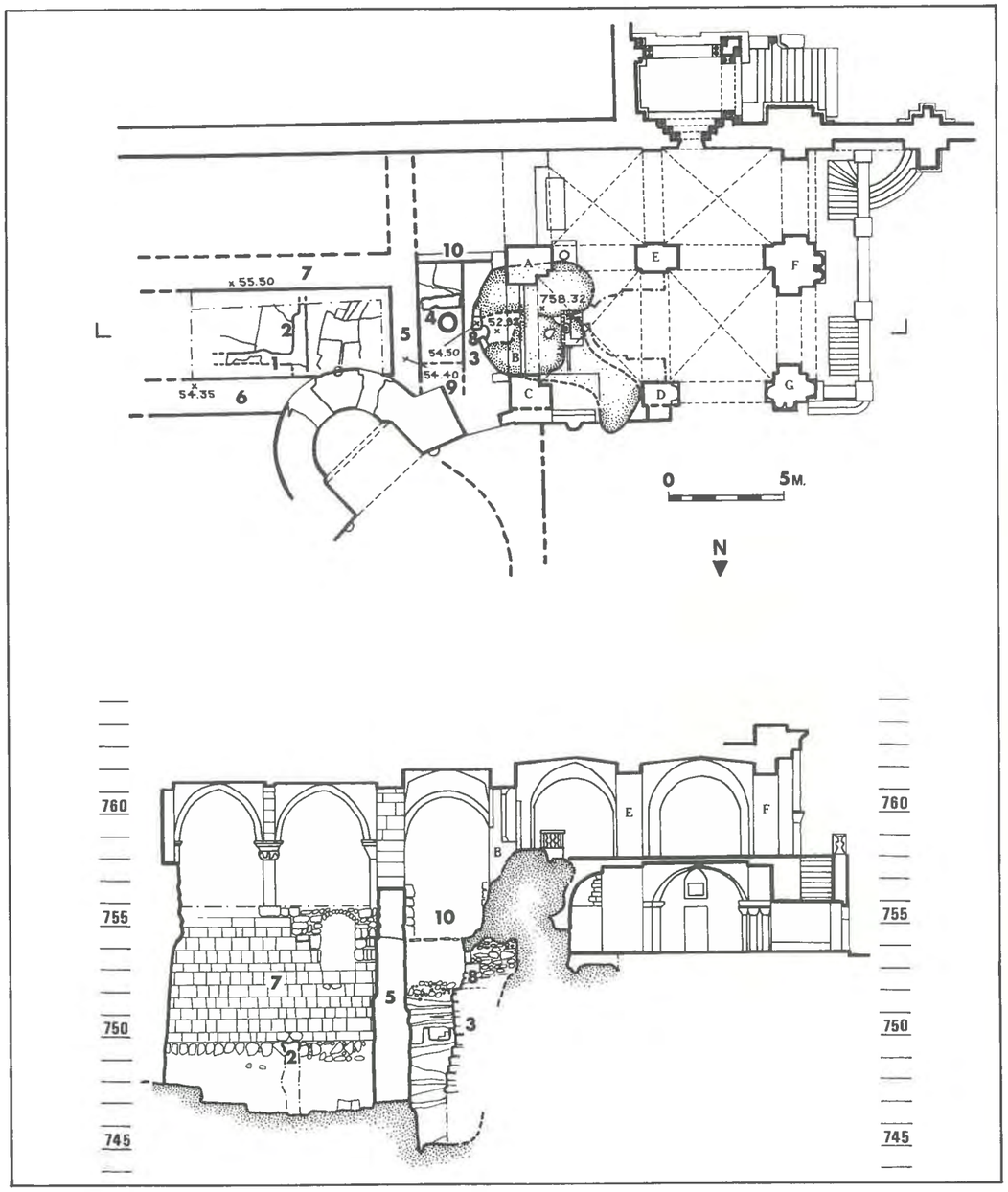


Figure 41. Plan and section of the Rock of Calvary (based on Katsimbinis, 1977, Pl. A, Fig. 3; Corbo, 1981–2, Pls. 40–41). Dotted areas represent bedrock. For information on the elevations used, see note 27.

Figure 42. The top of the Rock of Calvary, looking north, after the Greek Orthodox excavations of 1988 (photograph: S.Gibson).

by J.Hill in Wilkinson, 1988, p.220) which they believed had dripped down through the Rock of Calvary on to the head of Adam, who was, it was thought, buried beneath (see Taylor, 1989, pp.205–212; 1993, pp. 122–134).

It is very unlikely that the tradition which has Adam buried under the Rock of Calvary reflects the existence of any true 'Tomb of Adam' visited in the region in the 1st century. The tradition of Adam's burial at the place of Christ's crucifixion resulted from Christians transferring a Jewish tradition which had Adam buried in a cave under Mount Moriah to Golgotha (Taylor, 1989, pp.205–212; 1993, pp. 122–134). The idea of Adam's burial at the place of Christ's crucifixion became so popular, however, that Christians of the 4th century came to believe that the placename 'Golgotha' derived from the fact that Adam's skull lay buried beneath the site. Nevertheless, around A.D. 398, Jerome openly dismissed the legend as fictitious (*Com. in Matt.* 27:33); it was just a 'popular interpretation' which was 'pleasing to the ears' of people. Golgotha was not so named because Adam's skull was there but because it was local jargon for 'execution place', or 'place of beheading'. Jerome explained that places where criminals were executed were called 'Golgotha' in his own day. Jesus was therefore killed in the 'field of the condemned', as a criminal among criminals. Jerome was intimately acquainted with Jerusalem and its surroundings and his first-hand knowledge of the local language provides significant evidence for a proper understanding of the name 'Golgotha'.

Not one of the Evangelists says that Golgotha as such was a hill, or an outcrop of rock. It is simply a place, *topos*, and in John 19:41 it is within the boundaries of this 'place where he was crucified', Golgotha, that there was a garden. Cyril of Jerusalem clearly refers to the entire area as 'Golgotha' (*Cat.* 1:1; 4:10, 14: 5:11; 10:19; 12:39; 13:4, 22, 28, 39; 16:4). The nun Egeria's use of the term is the same (cf. *Itin.* 25:1); the basilica built by Constantine, which was known as the Martyrium, is described by her as being 'on Golgotha' (*Itin.* 25:1–6, 8–10; 27:3; 30:1; 37:1; 41:1). The same terminology was used by Theodosius (*De Situ* 7) but during the course of the Byzantine period the term gradually came to apply to the so-called Rock of Calvary alone.

The Romans may therefore have used Golgotha as a general execution place, not simply employing it solely for the execution of Christ and two others. If it was located somewhere in the vicinity of the Church of the Holy Sepulchre, the traditional site of Golgotha, then it would have satisfied the requirements of such places in being in a reasonably prominent position not far from the road leading west to north-west from the Gennath ('gardens') Gate located in the First Wall of Jerusalem (cf. Josephus, *War* V:4:2). Jeremias (1926, p.3) believed that executions would have been watched by people standing on top of the Second Wall of the city, but it is more likely that a position close to the Gennath Gate and the road north was more important, since executions were designed to be seen by everyone. People were not expected to make a special effort to climb up on the walls in order to view an execution. The Romans had a special place for executions in Rome, outside the Porta Esquilina on the hill of the Campus Esquilinus, which was occupied in part by the gardens of Maecenas (Varro, *De Lingua Latina* 5:25; Horace, *Satires* 1:8:14f; Tacitus *Annales* 2:32:2; Suetonius *Claudius* 25). It would appear that the corresponding execution site of Jerusalem was located somewhere within the site of the abandoned Iron Age quarry, west of the city, and nicknamed 'skull-place' by the people, as they would nickname other places of execution at a later time. However, it must be stressed that the quarry covered a large area (200 m by 150 m.) and the best place for executions would have been *just* within the quarry, but close to the road (which could not have run through the uneven surface of the quarry). As Pseudo-Quintilian (*Declamationes* 274) wrote, the most populous roads

were chosen for executions, because the penalties related not so much to retribution but to exemplary effect. Mark (15: 29–30) specifically refers to people walking by, near the execution place. Early literary evidence seems to suggest that biblical Golgotha was indeed closer to Gennath Gate than the traditional site under the Church of the Holy Sepulchre (see Taylor, 1993, pp. 113–122, 134–136).

The Rock of Calvary, on the other hand, was simply a geological feature of the quarry (Fig. 41). It is marred by a very deep cleft down its eastern side, which renders the Rock almost hollow (this will be discussed below with regard to the Hadrianic and Constantinian walls there). It also has a crack on the south side. Another deep crack can be seen at the base of the Rock in the Chapel of Adam. All of these cracks are natural and have been recognised as such for centuries. Edward Wells, writing in 1708, described the deep crack in the Chapel of Adam as a 'natural and genuine breach, and not counterfeited by any art, the sense and reason of every one that sees it may convince him. For the sides of it fit like two tallies to each other, and yet it runs in such intricate windings, as could not be well counterfeited by art, nor arrived at by any instrument' (Wells, 1708, p.124). There can be no doubt that the earlier quarriers left this rocky protrusion uncut because it was greatly flawed. It was not created for any other reason.

Corbo (1988, p.415) suggested that the top of the Rock shows that it has not been tampered with in any way over the centuries and appears as a rock in its natural state. This is not quite true. It is certainly the case that the top of the Rock of Calvary is uneven and therefore appears to be a natural surface, but it would be going too far to assume that we have here exactly the surface as it was in the 1st century. In the Greek Chapel of Longinus in the Church of the Holy Sepulchre, a portion of rock cut away, when the marble casing of 1810 was laid on top of the Rock of Calvary, was shown to the public (Wilson, 1866, p.51) and indicates that modifications were made to the Rock until quite recently. Prior to this, bits of the Rock were broken off for a variety of reasons: as pilgrim mementoes, and as holy relics to give extra sanctity to churches throughout the Empire. For example, a stone identified by its Greek inscription as 'rock from the Holy Calvary' (*SEG* 8:134; Meimaris, 1986, p.152) was found during the excavations of the 5th–6th century church of the Theotokos on Mount Gerizim.

About two metres north of the southern crack, near the back of the altar, there is a wide hole which is very unlikely to go back to Roman times. There have been suggestions that this was where Christ's cross was fixed. Prior to the removal of the casing, at the back of the Greek altar, a certain spot was considered to be the place. There is no mention of any hole into which the cross was fixed in early pilgrim texts. There was probably a golden crucifix on top of the Rock which survived until the Persians sacked and looted the building in 614. After this a silver one replaced it. Only in the 7th century did the idea arise that this silver crucifix was positioned not only in the socket hole used for the golden one which preceded it, but in the *actual* socket hole used for Christ's cross (Adomnan, *De Loc. Sanct.* 1:5:1). After the silver cross was in turn removed by Caliph Hakim in 1009, it continued to be assumed that the hole, now empty, was that which secured the cross of Christ. During the course of the centuries this socket hole was expanded, probably by means of the pious practice of taking bits of rock from holy places; Daniel the Abbot (11; Wilkinson, 1988, pp.128–9) describes the hole as a cubit (38–46 cm.) deep and a span (19–27 cm.) across. Theoderic (19; Wilkinson, 1988, p.285) wrote that the hole was deep and almost wide enough to put one's head into it; which, indeed, pilgrims did try to do. It cannot therefore have been much under 27 cm. in diameter. According to John of Würzburg (144; Wilkinson, 1988, p.259), the 'round hole' was pointed out and people put offerings there. The hole now is quite large, approximately 50 cm. in diameter and 40 cm. in depth (Fig. 42).

It therefore seems likely that this depression in the top of the Rock of Calvary is not the place of the original socket hole into which Christ's cross was fixed, but the remains of the socket hole for the golden crucifix of the Byzantine period. Moreover, if the re-discovered hole was in fact the place where Christ's cross was fixed, then one may ask where the holes for the crosses of the two thieves might be found. Interestingly, medieval pilgrims themselves wondered about this; Bernard of Ascoli (2; Wilkinson, 1988, p.229) supposes that the thieves were crucified down on the ground, while only Christ's cross was erected on the rocky outcrop. Even if this was the case, where are we to place the soldiers? If they were to have been on the ground below the Rock, then they would have been standing between 5 and 12 metres below the foot of the cross. The Gospels of Mark and Matthew record that someone offered Jesus a sponge filled with vinegar by placing it on the end of a reed (Mark 15:36; Matt. 27:48). John (19:28–9) has it that this was placed on a branch of hyssop, while Luke (23:36) says only that the soldiers offered him vinegar. Even the lances of the soldiers would not have been long enough to reach Jesus on the cross. The physical difficulty of ascending to the top of the Rock, let alone the difficulty of getting a half-dead prisoner with his cross up there, would have greatly discouraged the soldiers from employing the rocky outcrop as an execution place.

The Garden of Golgotha

According to John 19:41, there was a garden (Greek *kēpos* = Aramaic *gan*) at the place of crucifixion and in association with the Tomb of Jesus. It is not clear whether this was an ornamental garden, orchard, or horticultural plot of land since both the Greek and Aramaic words are very general. This close proximity between tomb and garden is not surprising, and during the Early Roman period burial caves were frequently located in agricultural areas around Jerusalem (Kloner, 1980, p.270). In the Mishnah it is stated that the uncleanness of tombs need not necessarily affect nearby areas of cultivation (*m.Oholoth*, 17:4, Danby ed., p.674). Corbo (1981–2, p.26, Pl.67; 1984, p.412) maintains that the area under the Church of the Holy Sepulchre was converted into a market garden, following the abandonment of the quarry in the 1st century B.C., with the cultivation of vines, figs, carobs, and olive trees. However, excavations in the church have yet to reveal botanical remains to support such a claim (cf. Freeman-Grenville, 1987, p.196). At the same time, it seems likely that the southern part of the quarry in general and the upper part of the Transversal Valley were under cultivation during the Early Roman period, with irrigation water channelled off from Hezekiah's Pool further west. Irrigated garden plots were not an unusual sight next to the towns and villages of this period (Feliks, 1963, pp.311–313). The area was not completely covered over with soil, as one may infer from the words of Coüasnon and others (1974, p.40; cf. Bahat, 1986, p.30; Corbo, 1988, p.398), but rather one may imagine a zone with some significant soil covering and also some areas of bare rock and shallow soil covering. In fact, the agricultural plots of land in this region may have given rise to the name of the *Gennath* ('gardens') Gate which was located according to Josephus (*War*, 5, 4:2) in the northern stretch of the First Wall near the junction with the Second Wall. Avigad (1982, p.69, Illus. 38) has recently excavated foundations in the northern extension of the First Wall, which he identifies as this gate.

Cyril of Jerusalem (*Cat.* 14:5, PG 33: col.829 B) says that the remains of a garden were visible adjacent to the church: 'Although it is now adorned, and most excellently, with royal gifts, it was before a garden, and the tokens and traces of it remain'. It is not clear, however, what these tokens and traces were, but it seems very unlikely that they were the vestiges of the *kēpos* from the 1st century. More likely, the garden Cyril refers to was an Adonis grove which had been planted next to the *temenos* of the Temple of Venus. It would appear that the church authorities kept up the image of a garden by planting a proper one in place of, or near, the remains of this garden mentioned by Cyril. In his writings from the 7th century, Epiphanius the Monk (*Hag.* 1:13–14 ; Wilkinson, 1977, p.117) says there was a 'garden of Joseph' in the courtyard of the church.

The Tomb of Jesus

Little can be seen of the original rock-cut tomb which was identified as the Tomb of Jesus (Fig. 36:21). It was largely destroyed by Caliph Hakim in 1009 (Coüasnon, 1974, p.19) and the surviving portions of the rock are covered over by the present Edicule ('little house'), which was last rebuilt following a fire in 1808 (Biddle 1990, 1991). At that time a Greek monk named Maximos Symaios wrote that the rock walls existed only to the north and south, and on the east and west they were built up of masonry (Vincent and Abel, 1914, pp. 200–300). The natural *meleke* rock was exposed below the floor and was continuous over the space from the Tomb eastwards through the Chapel of the Angel. Symaios also saw the rocky 'ledge', perhaps almost entirely destroyed, on which the body of Christ was supposed to have been laid, and this he describes as a 'trough'. It was probably not cut as a trough to begin with, but was slowly converted into one by people who broke off pieces of rock from it (cf. Daniel the Abbot 97; Wilkinson, 1988, pp.170–171; Vincent and Abel, 1914, pp.259, 264). Symaios reports that only the northern side of the ledge was constituted by the original rock, while the other sides were made up of marble slabs (Vincent and Abel, 1914, p.300). There is a small door covered by an icon in the western wall of the Edicule and through this it may be possible to see an area of rock, though it is covered with candle wax and difficult to determine. It may be a chunk of detached rock and nothing more. Restorers of the Edicule over the centuries do appear to have made an attempt to preserve the original rock outline under the adornment since the Tomb remains askew in its relation to the alignment of the rest of the church.

The burial cave was originally cut into the side of a rock scarp running towards the north, on the western side of the quarry (Fig. 36:21). There are numerous other examples of Early Roman tombs near Jerusalem which were similarly cut into the scarps of abandoned or partly disused stone quarries (Kloner, 1980, p.270; Gibson and Edelstein, 1985, p.153).

Cyril of Jerusalem (*Cat.* 14:9) informs us that there used to be a 'rock shelter' in front of the tomb entrance which was subsequently removed by Constantine's builders at the time when the tomb was being isolated from its surrounding rock[30]. This 'rock shelter' must have been a hollowed out porch in front of the entrance to the burial chamber. Such vestibules are typical of Early Roman tomb architecture (Kloner, 1980, pp.212–13). The rock floor of

the tomb lies just below the present floor of the Edicule. This means that in the Constantinian complex, which had a floor lower than the one today, there must have been several steps up to the level of the rock floor of the Tomb of Jesus (c.754 m.). This is in fact borne out by the evidence of a recently discovered terracotta ampulla (now in the museum of the Studium Biblicum Franciscanum) which depicts on one side the front of the Constantinian Edicule. It shows three steps up to the entrance (Corbo, 1988, p.420, Fig. 4 and cf. the Narbonne model as reconstructed by Wilkinson, 1972, pp.96–7). This is important in reconstructing the original shape of the tomb because in the Roman period tombs were built with steps leading *down* into them, not steps going up. The rock shelter that Constantine removed would have overhung steps leading down from a slightly higher level. If the level of the rock floor on which the Constantinian courtyard was constructed is the level of the quarry bed, then this means that the original entrance to the tomb was cut some way up the rocky scarp and probably accessed by a path running along it. To reach this entrance, the Constantinian architects needed to design a stairway leading *up*.

The tomb entrance, according to the traditional view based on Matt. 28:2, Luke 24:2, Mark 15:46; 16:3–4, was blocked with a large circular stone (Schick, 1885, Fig. IX; Vincent and Abel, 1914, pp.89–96, Fig.53; Parrot, 1955, Fig.ix) similar in shape to the crushing wheel of an olive press. However, the Gospels simply state that a stone (*lithos*) was 'rolled to' (*prosekulisen*) in front of the tomb entrance and no description of its shape is given. Kloner (1980, pp. 215–6) has demonstrated that circular blocking stones were only used during the Early Roman period for the entrances of elaborate and multi-roomed burial caves, and were not used for single chamber burial caves such as the Tomb of Jesus. There are only three examples of multi-roomed tombs with circular blocking stones from this period in Jerusalem: the 'Tomb of Queen Helena of Adiabene' or the 'Tomb of the Kings'; 'Herod's Family Tomb'; and another cave in its vicinity recently excavated by Kloner (1985, pp.62–3). Tombs from the Early Roman period with circular blocking stones are quite rare in Palestine: one example is known from Ḥorvat Madras in the Judaean Foothills, and two from Tel Ḥesban in Jordan (see bibliography in Kloner, 1985, notes 24–7). It was only during late Roman and Byzantine periods that circular blocking stones, though smaller in size, began to be employed more frequently for the entrances of single-chambered burial caves. Therefore, the blocking stone (*golal*) of the real tomb of Jesus was most likely rectangular or square in shape[31]; this type of blocking stone was extremely popular during the Early Roman period (discussion in Kloner, 1980, p.214; *idem*, 1985, pp.118–121). It should be remembered that even a rectangular blocking stone had to be 'rolled' in or out of position when a tomb was being closed or opened.

A number of reconstructions have been proposed for the internal arrangements of the burial chamber (Schick, 1885, Fig.IX; Vincent and Abel, 1914, pp.89–96, Fig.53; Dalman, 1935, pp.345, 372–3; Parrot, 1955, Fig. ix; Coüasnon, 1974, pp. 114–121; Wilkinson, 1972; Corbo, 1981–2, Pl.67). Reconstruction drawings showing the original appearance of the Tomb of Christ have always been popular in books on the Holy Land. An interesting early example appears in M. Doubdan's *Le Voyage de la Terre Sainte* from 1666 (plate between pp. 62–3; see also the drawing of the medieval Edicule between pp. 64–5).

It is generally agreed that the inner burial chamber was rectangular in plan with a single bench within an arcosolium on its northern side[32]. This is confirmed by the descriptions of the cave given by Adomnan (*De Loc. Sanct.* 2:I:9–12) and Photius (*Question 107 to Amphilochius*, I. 3–5). Adomnan distinguishes between the tomb building and the 'sepulchre' in the tomb, which he describes as a single shelf-like cave with its opening facing south and a low roof, while Photius describes a rectangular recess.

Schick (1885, Fig. IX), Vincent and Abel (1914, Fig. 53, p.96) and Corbo (1981–2, Pl.67) have reconstructed a two-chambered tomb, probably interpreting the 'rock shelter' mentioned by Cyril (*Cat.* 14:9) as a tomb chamber in its own right. Dalman (1935, p.372, n.4), and Parrot (1955, pp.45–8, Fig.ix), however, advocated the single-chamber plan.

As for the dimensions of the tomb interior, Adomnan (2:1:9–12) reports, from his source Arculf, that nine people could stand praying within the tomb building of the 7th century though perhaps he is including the number who could have squeezed into a vestibule in front of the actual tomb. His measurement of 1½ ft between the head of a man and the roof of the chamber seems also to be a little on the generous side. Jacinthus the Presbyter (*Frag.*), writing in 750, less than a century after Adomnan, records that the length of the tomb was 4 arms and 2 thumbs, the height 4 palms and the breadth the same. Photius (*Question 107 to Amphilochius*, 1:3–5) states that the interior was only 'high enough' to take a man standing upright, wide enough only for one man to pass along, and long enough to take three or four. The small dimensions of the tomb chamber appear to have been preserved in the restorations following the tomb's destruction by Caliph Hakim in 1009. Daniel the Abbot (11; Wilkinson, 1988, pp.128–9) described the tomb as being 4 x 4 cubits. Since we do not know precisely how long a cubit was to Daniel the Abbot, his measurements can only be given approximate metric values. A cubit measured between 38 and 46 cm. Therefore the dimensions of the Tomb were 152–184 cm. square. The height of the shelf was either 19–23 cm. or 57–69 cm. above the floor. The shelf upon which the body of Christ was laid was 4 cubits in length and ½ or 1½ cubits high. Restoration work also preserved the lowness of the door of the tomb, described by Jacinthus the Presbyter (*Itin.* 9; Wilkinson, 1977, p.123, 205) as being 2 cubits (76.5–92 cm.) high and 1½ cubits (57–69 cm.) wide. Daniel mentions that people had to enter stooping on their knees. If we estimate from these descriptions that the height of the tomb chamber from floor to ceiling was the equivalent of the height of an average man (5ft 10 ins or 1.77 m. maximum), or approximately 40 cm. above this, the ceiling cannot have been more than 2.17 m. from the floor. An elevation of 756.00 therefore seems likely for the *maximum* height of the rock ceiling, with a minimum elevation of 757.00 m. for the top of the rock surface above the tomb.

Part of a *kokhim* burial cave, with a standing pit, known as the 'Tomb of Joseph of Arimathea' (Fig. 36:22), can be seen on the western side of the Rotunda (Clermont-Ganneau, 1877; *idem*, 1884, pp.319–27, with notes by Wilson and Conder on pp.327–31; Vincent and Abel, 1914, pp.192–3, Figs. 114–16). It was cut into the top *mizzi ḥilu* stratum of rock. Most of it was destroyed during the Constantinian quarrying activities.[33] Clermont–Ganneau writes of a neighbouring tomb, and Parrot (1955, p.41, n.2) mentions tombs 'a little further to the north' of the *kokhim* cave. The rock-cut rectangular area immediately north of the Tomb of Jesus (Fig. 36: 3, 6; Corbo's area 68), may have been part of a sunken courtyard in front of a tomb entrance located further west before its conversion into a Hadrianic *favissa*. It is generally assumed that the tombs in this area were emptied of their contents with the expansion of Jerusalem north and west at the time of the construction of the Third Wall by Agrippa during A.D. 41–43. This was in keeping with the halakhic injunction that 'carcasses, graves, and tanneries may not remain within a space of fifty cubits (i.e. approximately 25 m.) from the town' (*m. Baba Bathra*, 2:9, Danby ed., p.368; Broshi, et al., 1983, pp.29–32).

Additional tombs from the Early Roman period were found within the present north-west angle of the Old City about 250 metres to the west of the Church of the Holy Sepulchre, and one of them contained ossuaries and glass 'tear phials' (Clermont-Ganneau, 1899, p.252; Schick, 1892, pp.17–8, Ill.18). The tombs of the high priest John Hyrcanus and Alexander Janneaus were located somewhere in this northern area (Josephus, *War*, 5:6:2; 7:3).

CHAPTER FOUR

The Area of the Church during the Late Roman Period

After the end of the Bar Kochba revolt in A.D. 135, Hadrian proceeded with plans to convert the city of Jerusalem into a pagan city. He built upon the elevated area of the former quarry a temple complex which adjoined a forum. In this chapter we will discuss what can be known about the Hadrianic structures on the site and these will be related to other features of the city, renamed Aelia Capitolina.

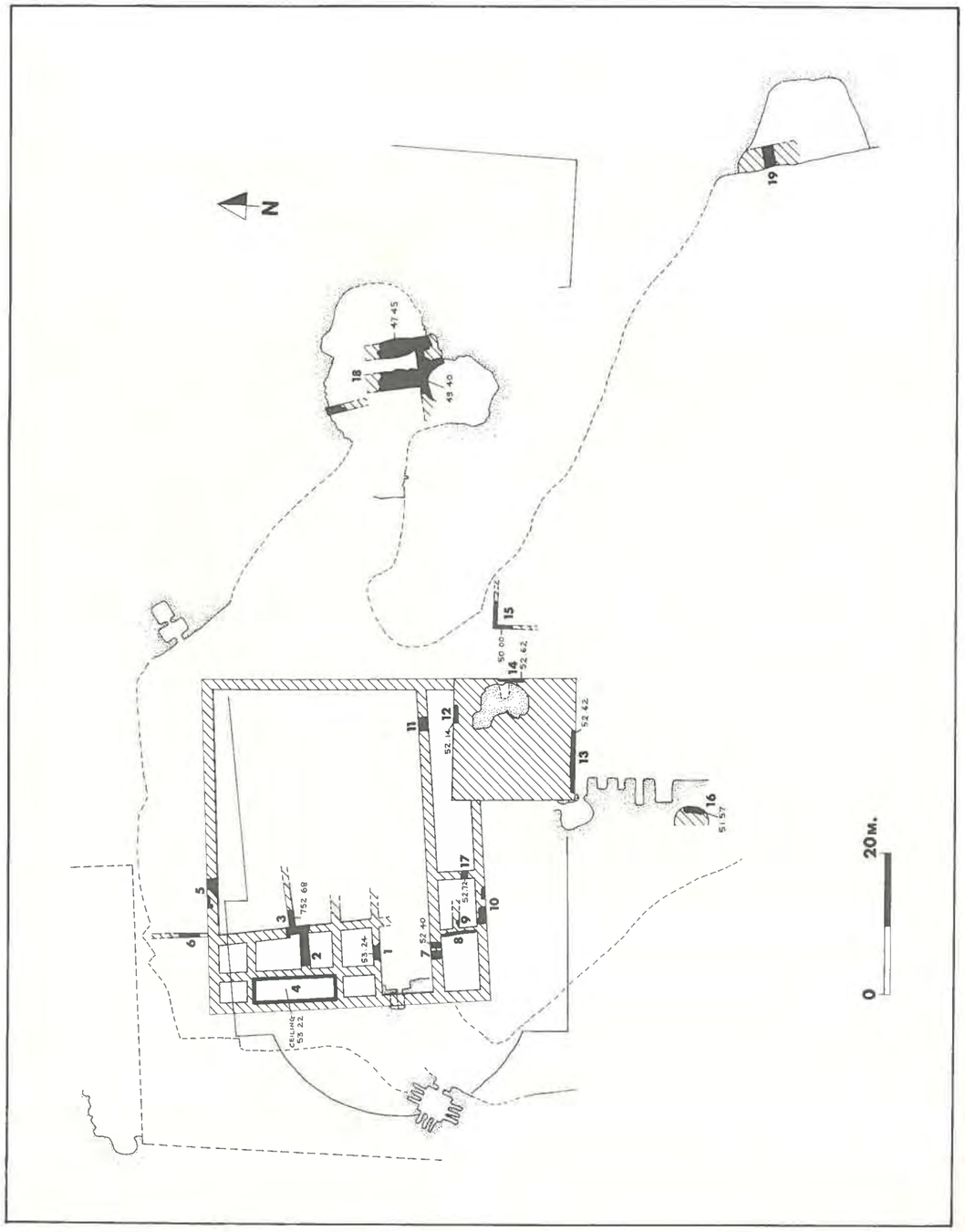
A significant number of landscape modifications were required to prepare the area before construction began on the superstructures of the elevated northern part of the Hadrianic forum, which became the sacred precinct of the temple, or *temenos*. The Hadrianic builders therefore undertook large scale filling and levelling operations in the area of the old quarry. Archaeological excavations have shown that these operations proceeded as far south as the region of the present Church of the Redeemer (Lux, 1972, p.109, Plans 1, 6; Vriezen, 1977; Schein, 1981, p.23) and Site C in the Muristan (Kenyon, 1974, p.26, Fig. 37). The heart of the forum was probably located in the region of the present Muristan. Therefore it would have had the Temple of Venus on its northern side, the *Cardo Maximus* street on the east, and perhaps also the east-west *Decumanus* street in the south.

The 2nd century A.D. building activities were later described by Eusebius:

> Moreover, with a great deal of hard work, they brought in earth from some place outside and covered up the whole area; thereafter raising the level and paving it over with stone. They concealed the sacred cave somewhere below by the great quantity of fill. Eusebius, *Vita Const.* III:26.

The temple and other buildings constructed to grace the forum and show the munificence of the Emperor Hadrian must have been as splendid as any of their comparable structures in Syria, or even Rome, but the remains of Hadrianic walls in the vicinity of the Church give us few clues as to what was to be seen above ground[34]. Most of the Hadrianic walls which have been found are, like those behind the Chapel of St. Helena (Fig. 43:18), consolidation walls located below the pavements and foundations of the *temenos*. These include some of the walls found on the eastern side of Calvary (Fig. 43:15; Katsimbinis, 1977, plan on p.209; Corbo, 1981–2, Pls. 40–44, Photo 97:f,g); wall E below the choir of the Katholikon (Fig. 43:11; Corbo, 1981–2, Photos 87–90; Díez, 1984, Fig. 48:8); five walls (including C, M1, M7) located immediately southeast of the Edicule (Fig. 43:7–10, 17; Coüasnon, 1974, p.24; Corbo, 1981–2, Pl. 19:2,3; Photo 53; Pl. 16 and 24:3); and six walls (including G–G) northeast of the Edicule (Fig. 43:1–3, 5–6; Corbo, 1981–2, Pl. 19:1; Pl. 10, Photos 30–31, 34; Pl. 62:C; Photos 44:2, 45:1; Pl. 61:2A). These consolidation walls were part of an internal grid of a rectangular platform (46.50 x 38.75 m. in size). They cannot be used to reconstruct the shape of the Hadrianic temple as Corbo (1981–2, Pl. 68) has suggested. In our view, if Eusebius' words are correct, then the platform upon which the temple complex was constructed must have been high enough to obscure completely the rocky ridge into which the Tomb of Jesus was cut. Therefore the original upper surface may have had a minimum elevation of 757.00 (see above, p.63 for the estimated height of the scarp). The western side of the platform was marked by the existence of a vaulted underground chamber identified by Corbo (1981–2, Pl. 18: no. 68; Photos 49–51, pp.66–67) as one of the *favissae* of the Hadrianic temple complex. It measured 9.30 m. in length and 3.00 m. in width. The rock-cut sides measure only 0.60 m. high and were built up, probably to the height of the temenos, by walls constituted by ashlars which have chiselled margins and flat centres.

It seems likely that the Rock of Calvary was enclosed within a platform of its own (19 x 19 m. in size) which had a slightly different orientation from the platform to its north. The north wall of the platform is represented by a wall fragment found in Trench V (Fig. 43:12; Corbo, 1981–2, Pl. 24:1, Photos 14:3; 15, 17:5). The east wall (Fig. 41: wall 3) was uncovered in excavations east of the Rock of Calvary (Fig. 43:14; Katsimbinis, 1977; Corbo, 1981–2, Pls. 40–44, Photo 91). This wall was built of squared stones, a few of which had chiselled mar-



gins. A well-preserved stretch of the southern wall is located on the north side of the Constantinian cistern below the southern atrium of the church (Fig. 43:13; Corbo, 1981–2, Pls. 53–54, Photos 1–2, 5). It has a height of 6.45 m. with 13 ashlar courses of headers and stretchers with chiselled margins and low bosses. The quality of the masonry may indicate that the wall was intended to be seen by those approaching the temple complex from the south.

A fragment of a small quadrangular altar was found during the clearance work east of the Rock of Calvary (Díez, 1984, pp.34–5, Fig. 55; Freeman-Grenville, 1987, Pl. VI:2a-b). The altar, made of limestone, has mouldings around the top and a central hollow focus (Fig. 44). It had an original height of approximately 0.50 m. The top surface is about 0.28 x 0.28 m. square. The altar dates from the 2nd or 3rd century A.D. (cf. examples from the Hermon: Dar and Minsker, 1987, Fig. 24, pp.41–2).

The walls located within the Russian property on the south-eastern side of the Church of the Holy Sepulchre, and in the bakery of Zalatimos on Khan el-Zeit street are still of uncertain date.[35] These walls, or parts of them, have previously been dated to Herodian, Hadrianic or Constantinian times (Clermont-Ganneau, 1899, pp.89–94; Vincent and Abel, 1914, pp.40–88, Pls. III–X; Crowfoot, 1941, p.15, n.1; Coüasnon, 1974, p.45, Pl. XXII,a; Wilkinson, 1975, pp.135–6; Corbo, 1981–2, Pls. 3, 68, Areas 401–408, p.227; Bahat, 1986, p.34)[36]. It is generally accepted that wall 404/405 (following Corbo's numbering), which has an alignment parallel to the *Cardo Maximus*, and the perpendicular wall 408, which has external pilaster arrangements, are both of Hadrianic date and were part of the *temenos* wall skirting the sacred precinct of the forum complex. These two walls were built out of numerous Early Roman ashlars in secondary use. It is also assumed that these walls were later re-used as enclosure walls around the atrium fronting Constantine's basilica further west (Fig. 45:6), and that the two entrances (nos. 401 and 402) were probably cut into the eastern wall at this point in time. However, a word of caution needs to be expressed concerning the dating of these walls. The fact that they were constructed with re-used Early Roman ashlars need not necessarily imply that they are of Hadrianic date. Early Roman architectural components (ashlars, column drums, etc.) were frequently re-used in Constantinian constructions. The Constantinian stylobate wall (Fig. 6, wall 4), for example, located on the north side of the Chapel of St. Helena (see above, pp.

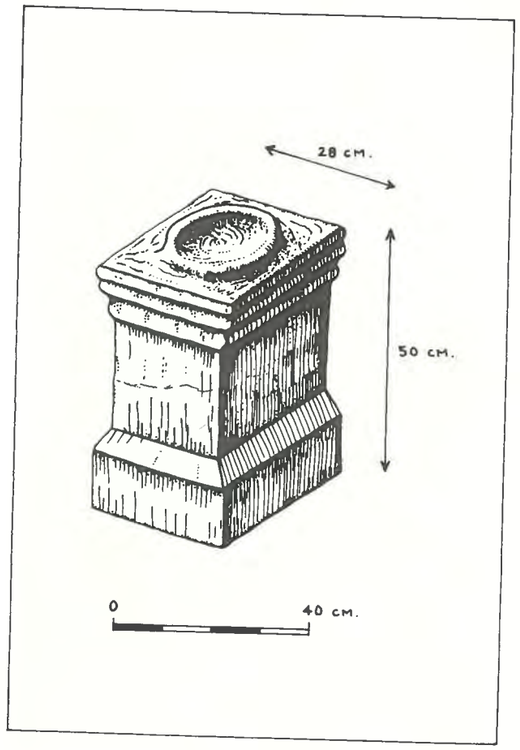


Figure 44. Reconstruction of limestone altar found east of the Rock of Calvary. Drawing based on photographs published in Díez (1984) and Freeman-Grenville (1987, Pl.VI: 2a-b). (S.Gibson).

Figure 43. The area of the Church of the Holy Sepulchre during the Late Roman period: (1) wall foundation north-east of the Edicule (Corbo, 1981–2, Pl. 19:1); (2) wall G-G in the northern transept 46 (Corbo, 1981–2, Pl. 10, Photos 30, 31, 34); (3) wall foundation north-east of the Edicule (Corbo, 1981–2, Pl.10, Photos 30, 31, 34); (4) underground chamber 68 (Corbo, 1981–2, Pl.18, Photos 49–51); (5) wall C (Corbo, 1981–1, Pl.62, Photos 44:2, 45:1); (6) wall foundation (Corbo, 1981–2, Pl.61: 2A); (7) wall C south-east of the Edicule (Corbo, 1981–2, Pl.19:2-3; Photo 53); (8) wall foundation south-east of the Edicule (Corbo, 1981–2, Pl.16); (9) wall M7 south-east of the Edicule (Corbo, 1981–2, Pl.16); (10) wall M1 south-east of the Edicule (Corbo, 1981–2, Pl.16); (11) wall E below the choir of the Katholikon (Corbo, 1981–2, Photos 87–90); (12) wall foundation (Corbo, 1981–2, Pl.24:1, Photos 14:3; 15; 17:5); (13) wall built of ashlars (Corbo, 1981–2, Pls. 53–54, Photos 1–2, 5); (14) wall (Corbo, 1981–2, Pls. 40–41, 43–44, Photo 91); (15) walls east of Calvary (Katsimbinis, 1977, plan on p.209); (16) wall M4 (Corbo, 1981–2, Pl.55, Photo 7:3); (17) wall foundation south-east of Edicule (Corbo, 1981–2, Pl. 24:3); (18) walls in Chapel of St. Vartan (see Fig. 6, above); (19) wall blocking cave entrance (see Fig. 40:4, above). (S.Gibson).

21) was largely built out of architectural elements of Early Roman date that had been removed from demolished Hadrianic constructions.

The Roman Forum and the Temple of Venus

A number of hypothetical reconstructions have been proposed for the layout of the northern part of the Hadrianic forum. Coüasnon (1974, pp.12–13) has suggested that the Temple of Venus should be located above the Tomb of Christ and a civic basilica might lie further east; a reconstruction followed by Tsafrir (1984, pp.60, 92). Helms (1980, pp.119, 122, Fig. 6) has squeezed an *iseum*, with a *purgatorium/megarum*, into the Cave of the Invention of the Cross. This is located between the Temple of Venus and the civic basilica, which he puts in the area of the later Constantinian atrium. Geva (1984, p.250, Fig.3) follows Coüasnon in proposing that a civic basilica existed along with a temple, but this remains pure speculation. Bahat (1986, p.40) has suggested that the Temple of Venus may have been circular, and that this inspired the architects of the Constantinian rotunda to adopt a similar plan (but cf. Corbo, 1988, p.400). There are circular temples at Baalbek (Ragette, 1980, p.52–62) and Hosn Suleiman (Krencker and Zschietzchmann, 1938, Taf. 41, 42, 95, 117–118), which would lend some support to Bahat's suggestion, though these are very small, the latter only 15 m. long and 10.5 m. broad. However, in a recent publication, Bahat (1990, p.66) has returned to the rectangular plan for the Temple of Venus.

It is often assumed (for example by Murphy-O'Connor, 1986, p.45; Wilkinson 1977, p.175; 1976, p.77–78; Vincent and Abel, 1914, II, p.33) that the temple connected with the forum here was the Capitoline temple of Jupiter, Minerva and Juno, known from coins. This triad gave the city its name: Aelia Capitolina. The temple may have been of some considerable size. However, those who would wish to place the Capitoline temple here must accommodate the goddess Venus, who is well attested in literary sources as the presiding deity. Consequently, Vincent and Abel (1914, II, p.33–34) believed that the temple was really only for Jupiter and Venus, not the classic triad. Corbo (1982, Pl.68) suggests that the Capitoline triad of Jerusalem was Jupiter, Minerva and *Venus* (replacing Juno) and the temple was located on a small rectangular podium above a large raised platform covering the region of the present Church of the Holy Sepulchre and beyond. Parrot (1955, p.37–38) adopts the same strategy by suggesting that the Jerusalem 'Capitoline triad' was Jupiter, Juno and Venus (replacing Minerva). Bahat (1986, p.34–5), however, has argued strongly against the siting of the Capitoline temple on this site rather than on the Temple Mount, and has pointed out that there is no known parallel to Corbo's hypothetical plan of the temple.

It has been tempting to place the Capitoline temple here partly because it has not been securely associated with any other location in the Hadrianic city. Coüasnon (1974, p.11) does not suggest a location, but puts a statue of 'the Capitoline Zeus and of the Emperor' on the site of the destroyed Jewish Sanctuary. Cohen (1987, p.123–4) believes that the Capitoline temple was never finished, but in fact its completed state is well-attested in numismatic sources. It is often forgotten that the sole basis for placing the Capitoline temple in the western part of the city, on the site of the later Church of the Holy Sepulchre, rests on one sentence in Jerome's second letter to Paulinus of Nola, written c. A.D. 395. Here, Jerome writes, 'a likeness of Jupiter was set up in the place of the resurrection, and a marble statue of Venus on the rock of the cross' (*Ep.* 58:3, *PL* 22,581).

All other independent early patristic accounts of the destruction of the Hadrianic edifice and the construction of the Christian building report that there was a temple to Venus/Aphrodite. Eusebius (*Vita. Const.* 3:26f) refers to 'the demon Aphrodite'. Socrates (*Hist. Eccles.* 1:17) confirms Eusebius' account that the area was covered with a fill of earth and that Venus was worshipped there, as does Sozomen (*Hist. Eccles.* 2:1) and Rufinus (*Hist. Eccles.* 9:6). Ambrose says that Christ actually suffered in a *venerarium* (*Com. Ps.* 48, *PL* 15,1148). In one detail at least Jerome must certainly be correct: that a statue of Venus was set up upon the rock which came to be identified as the Rock of Calvary or 'Golgotha' itself (contra Coüasnon, 1974, p.12; Harvey, 1935, p.vi; Parrot, 1955, pp.37–8; Corbo, 1981–2, p.221 though see his modified view in *idem*, 1988, p.418). We may infer from Eusebius' account of the finding of the tomb that the top part of the Rock of Calvary was still above ground, for nothing is said of the Rock's discovery. If there was a separate platform around the Rock, as the Hadrianic walls framing the vicinity appear to show, then it is quite possible that it was at a lower level than the main platform which covered the tomb. The height of the Rock of Calvary is 758.32 m. and the height of the main Hadrianic *temenos* must have been roughly the same. The platform around the Rock need not have been very much lower than the main platform for the top of the Rock to be visible. It was the Tomb of Christ that had been covered up with earth (*Vita Const.* 3:26). Sozomen says that the place of the resurrection had been enclosed by a wall and the area paved with stone, but he does not say the Rock was covered (*Hist. Eccles.* 2:1). The relevant coins of Aelia show the goddess standing with her right foot raised on what Kadman (1956, p.36) has described as an 'uncertain object'. This object looks very much like a rocky outcrop, as Wilson observed (1906, p.70).

If Jerome was correct in recording this detail about the position of the statue, weight is added to his reference to Jupiter. However, insufficient care has been taken to understand the manner in which Jerome has constructed his sentence. At first sight it does appear that Jerome places the statue of Jupiter on top of the alleged site of Jesus' tomb. The Latin reads:

in loco resurrectionis simulacrum Iovis
in crucis rupe statua ex marmore Veneris
a gentibus colebatur

This has a poetic ring to it that would have impressed Jerome's correspondent, but in fact it does not inform us that a statue of Jupiter, let alone the Capitoline temple, was actually constructed upon the Tomb of Jesus. Jerome is using parallelism, familiar to him through his work on the Hebrew Prophets, to bewail the previous desecration of sites sacred to 4th century Christians. It is important to Jerome to mention the Passion and the Resurrection together in his account of the desecration for, as he goes on to say, 'the original persecutors supposed that by defiling our holy places they could take away our faith in the Passion and the Resurrection'. Likewise, two gods are needed to offset the two soteriological issues at stake; Jupiter complements Venus in reinforcing the extent of the desecration. However, Jerome shows clearly elsewhere that he believed that the 'idol of Jupiter' (along with one of Hadrian) stood on the Temple Mount (*Com. Esa.* 1:2:9, *CSL* 73, p.33). Therefore, in contrast to the specific reference to Venus' statue on the rock, he has given 'the place of the resurrection' a wide reference, probably applying to the general area on which Hadrian had constructed the temple. The Temple of Venus had a number of statues, shrines and altars, according to Eusebius (*Vita Const.* 4:36). Jerome maintains such vagueness by means of the Latin preposition *in*, which can mean both 'in' and 'on'. If Jerome had meant to say that a statue of Jupiter had stood precisely over the buried tomb of Jesus, there is no doubt that he would have said it. Interestingly, the recipient of the letter, Paulinus, in turn wrote (*Ep.* XXXI, *Ad Severam*) that Hadrian 'supposing that he could kill the Christian faith' by defiling the site, 'consecrated an image of *Jupiter* on the place of the Passion,' i.e. Golgotha, the site as a whole.

Numismatic evidence shows that the Capitoline temple cannot have included worship of Venus. Coins depict two, perhaps three, completely different temples: one of Venus, one of the Capitoline triad, and possibly another. The temple of the Capitoline triad is in classical style, with an architrave and pediment (Kadman, 1956, p.23) while the temple of Venus has a central arch, an open order of columns and a 'Syrian gable' (Kadman, 1956, pp.23, 74). Nowhere in the corpus of coin types from Aelia Capitolina do Jupiter and Venus appear together. The Capitoline temple may correspond to the 'Trikameron' mentioned in the *Paschale Chronicals* (*PG* 92. 613–14; cf. Margalit, 1989, p.46).

Venus was the most popular of the city's deities, accounting for 40% of known coin types, while Jupiter is found only on 6 types, 3 of which are unsure (1.5–3%). Even Serapis, whose cult was installed at the Bethesda pool, rates 16% of the total number of types (see Kadman, 1956. pp.36–43). The Capitoline triad may have given the city its name, but devotion to Venus was more popular. Her temple was located in the western part of Jerusalem abutting a forum. The location of the Capitoline temple is less easy to determine. In order to fix it in a more likely location, it is necessary to digress from a discussion of the vicinity of the Church of the Holy Sepulchre to focus on the city as a whole.

The Location of the Capitoline Temple

Very little is known about the plan of Hadrian's city (cf. Margalit, 1989; Isaac, 1990, pp.353–4). A number of hypothetical reconstructions have appeared (e.g. Bahat, 1973, p.19; *idem*, 1990, p.59; Kenyon, 1974, Fig. 44; Coüasnon, 1974, Pl.V; Wilkinson, 1975, Fig. 12; 1978, Fig. 120; Minsker, 1977, Figs. 4–5; Helms, 1980, Fig. 5; Ben-Dov, 1983, p.54; *idem*, 1991, p.90; Geva, 1984, Fig. 3; Tsafrir, 1984, p.60). According to Josephus (*War* 7:1:1) the Tenth Legion (*Fretensis*) was left as a garrison following the destruction of Jerusalem by Titus in A.D. 70. It appears that the barracks of the Tenth Legion were established on the western hill, probably in the area of the northern part of the Armenian Garden and within the north-western angle of the First Wall in the Citadel (Geva, 1984; Tushingham, 1985, pp.53–54). There is no evidence to suggest that the camp of the Tenth Legion was surrounded by a defensive wall, as Tsafrir (1984, p.60) has proposed[37]. Although the internal arrangements within the camp may have been standard, the military buildings were probably rather ephemeral structures made of wood with tiled roofs. Large quantities of stamped tiles have been unearthed in the Armenian Garden and along the western city wall but little else (Broshi and Gibson, forthcoming). A number of graves from this period have recently been excavated outside the settlement at Ketef Hinnom on the opposite side of the Wadi er-Rababe (Barkay, 1986A, pp.14–15).

Jerusalem was established as a Roman colony during the years 130–132 A.D., which was probably one of the causes of the Bar Kochba revolt. Following the defeat of the rebels in 135, the construction of Aelia began in earnest. The new settlement, approximately 120 acres in size, was mainly con-

structed in the northern sectors of the present-day Old City (in the Christian and Muslim Quarters) and it was protected by the Tenth Legion camp to the south. It appears that the settlement did not extend to the southern sectors, which remained uninhabited until the Byzantine period (Avigad, 1983, p.207). Many of the inhabitants of Aelia were probably settled army veterans (Millar, 1990, p.29).

It is now believed that Aelia remained unfortified until after the Tenth Legion had been transferred to Aila (Elath) (Geva, 1984, p.251; Ben-Dov, 1985, pp.191–194). A fortification wall was built in the 3rd or early 4th century, extending only around the northern part of the city from the area of the Citadel to the Damascus Gate in the north and to the north-eastern angle of the Temple Mount in the east. The southern sector, including Mount Zion and the south-eastern hill, was fortified in the time of Eudocia (mid-5th century) and so Tushingham's (1985, p.68) suggestion that the Byzantine fortifications around the Western Hill were only established during the second half of the 6th century seems unlikely. These Byzantine defenses were later restored during the course of the 7th–8th centuries (Magness, 1991).

The major street system of Aelia can be traced with some certainty (Wilkinson, 1975; Minsker, 1977). Two main streets extended from the present Damascus Gate area towards the south: the *Cardo Maximus*, which terminated near the east-west *decumanus* street, and the secondary *Cardo*, which descended into the Tyropoean Valley parallel to the western wall of the Temple Mount (see Margalit, 1989, pp.47–8). The southern extension of the *Cardo Maximus*, which has been excavated in the Jewish Quarter, was built only during the Byzantine period, at the time of Justinian (Avigad, 1983, p.226; Reich, 1987, pp.164–7) and was not in existence during the days of Aelia Capitolina (contra Tsafrir, 1984, p.63).

The *Paschal Chronicles* (*PG* 92, 613) tell us that Aelia had two civic centres, *demosia*. The first has been located immediately west of the *Cardo Maximus* to the north of the legionary camp, in the area of the present Muristan and the Church of the Holy Sepulchre (see above, p. 68). The second has been found north of the Temple Mount (Benoit, 1971; Margalit, 1989, p.48, n.36–7). It seems very probable that the Capitoline temple was attached to the latter forum.

Cassius Dio, writing in the latter part of the 3rd century, places the Capitoline temple on the site of the Jewish Temple:

> At Jerusalem, Hadrian founded a city in place of that which had been razed to the ground, naming it Aelia Capitolina; and on the site of the Temple of God he erected a temple to Jupiter. (*Hist. Rom.* 69:12)

Dio never visited Jerusalem, and it is doubtful if he had a clear idea of the Temple Mount. Certainly, two eyewitnesses to the Hadrianic arrangement of the area, Origen (*Comm. in Matt.* 24:15, *GCS* XII, 193–194) and the Bordeaux Pilgrim of A.D. 333 (*Itin.* 591:4, *CSL* 175, p.16), speak of two statues on the site of the former Jewish sanctuary: one of Hadrian and the other of someone else, who Wilkinson (1976, p.77–78) has shown to be Antoninus Pius. Jerome (*Comm. in Matt.* XXIV:15, *PL* 26, 177) places an equestrian statue of Hadrian, which was still standing in his day, on the precise spot of the former Holy of Holies. The Jewish Temple itself appears not to have been destroyed completely, judging by the remarks of Cyril, who argued in his lectures that the Antichrist would come at a time when not one stone would be left on another in the Temple area, 'and I do not mean just the stones of the outer walls (*peribolos*), but inner sanctuary (*naos*) where the cherubim were' (*Cat.* XV: 15).

If there were two equestrian statues on the site of the Sanctuary, one of Hadrian, and another of Antoninus Pius, then clearly there was no temple to Jupiter here, but Dio may have meant that the Capitoline temple was somewhere else on the Temple Mount, rather than on the actual site of the Holy of Holies. New evidence that the Capitoline temple was indeed on the Temple Mount has recently been presented by Bernard Flusin in a lecture to the Societé des Études Grecques (Paris, 2 May, 1988). He has brought to scholarly attention the existence of two manuscripts, originally written in Greek and dating from the 7th century, in which the area of the Temple Mount is called the 'Kapitolion' or 'Kapitolin'[38].

The perfect location would have to be the site of the former fortress of Antonia (Wightman, 1990–91), located on the north-western corner of the Temple Mount. It is a rock escarpment, 120 m. x 45 m. in area, where now the Umariyya school stands. The approach to the temple must have been from the east since it is only here that there is a sloping gradient in the rock levels. A temple on this site would preserve some of the residual sanctity of the Jewish Temple area. It would be high, and would abutt the north-eastern forum. In fact, it is essential that this forum should have a temple of some kind, and the healing sanctuary of Serapis, located at Bethesda, is too far away and inappropriate as a cultic centre for a market place. The temple of Jupiter, Minerva and Juno should be located here, far away from the vicinity of Jesus' tomb.

Conclusions

On the site of the present Church of the Holy Sepulchre, therefore, it is reasonable to conclude that a temple of Venus overlooked the busy western forum. This temple did not have one single altar or one single cult statue. The situation was complex,

and we should probably envisage a temple precinct made up of several shrines containing idols pertaining to the multifaceted cult of Venus. Eusebius (*Vita Const.* 3:36) clearly records that there were numerous altars, all dedicated to Venus: the place was 'a dark recess of dead idols for the wanton demon Aphrodite and then they were pouring out foul libations there on profane and accursed altars'. Eusebius proceeds always to refer to these abominations in the plural; they are: 'accursed pollutions', 'devices of godless and impious men', 'bold deeds', 'treacheries of enemies', 'all matters not clean' and, when Constantine issued his commands, the 'devices of deceit (the idols) were cast down from above on high to the ground, and those statues and demons and the abodes of falsity were overthrown and destroyed'. There can be little doubt, therefore, that the libation altar from the Late Roman period recovered immediately to the east of the Rock of Calvary (Fig. 44) was one of those used in the cult of Venus (see Díez, 1984, pp.34–5, Fig. 55; Freeman-Grenville, 1987, p.190, Pl. VI: 2a-b; Corbo, 1988, p.418[39]). Its position beside the Rock of Calvary would confirm that here a cult statue, to which libations were offered, was located. It is also important to note that Eusebius specifically states that the emperor Constantine decided that 'those parts which had been most polluted by the enemies' would receive 'special tokens'. That the Rock of Calvary was one such place would appear extremely likely.

Corbo's suggestion that the artificial cave in the eastern side of the Rock of Calvary was part of the Hadrianic cult seems improbable. Corbo makes too much of Eusebius' figurative language, which links pagan shrines to images of darkness, and assumes that when Eusebius speaks of a dark recess that he must be speaking of a subterranean cave. Corbo therefore proposes that the pavement of the Hadrianic platform, and the marble statue of Venus, covered the top of the Rock of Calvary. Five or six metres below this was the little cave to which devotees of Venus went via a tunnel or passage. As will be shown in the following chapter, no archaeological evidence supports this hypothesis.

CHAPTER FIVE

The Byzantine Church Complex and its Vicinity

Soon after Constantine defeated his rival Licinius in 324 and became emperor of the East as well as the West, he ordered that the Hadrianic temple of Venus in Jerusalem should be torn down and that a new Christian basilica be built on the site.

The literary starting point for a discussion of the Constantinian structures has always been Eusebius' description in his *Life of Constantine* 3:34–39 (so, for example, Vincent and Abel, 1914, pp.153–164). Eusebius wrote this work after the death of Constantine in A.D. 337. For this reason, the work echoes the style of a panegyric which attempts to laud the emperor for his generosity in transforming the 'gloomy shrine of lifeless idols' (3:26) of pagan times into the shining glory of the present day: darkness becomes light, and evil gives way to good. As such, he is not particularly concerned with recording the architectural details of the basilica and, to the dismay of scholars, seems never to have written the detailed description he promised (*Vita Const.* 4:4:6).

The following is a translation of Eusebius' text. After this, various important aspects of the Byzantine complex will be discussed.

EUSEBIUS DE VITA CONSTANTINI III: 34–39

Greek Text: *PG* 20, 1857, cols. 1096, 1097, 1100. *GCS: Eusebius Werke*, VII, ed. I. A. Heikel.

34. So, first, the royal generosity made the cave[a] radiant with all kinds of adornment, as if this was the chief part of the whole. He[b] embellished the holy cave with choice columns and with profuse decoration. (Fig. 45:1)
35. He passed on next to an enormous space, into a clear, open-air, outspread area. He then adorned this by laying bright stone upon the ground, and surrounded it with very long porticoes on three sides. (Fig. 45:3)
36. The royal temple[c] was attached to the side opposite the cave, which looked toward the rising sun. (Fig. 45:5) It was an extraordinary work, built extremely high and to the maximum in length and breadth. The inner surfaces of the building were covered with slabs of variously coloured marble . The appearance of the walls outside was bright with polished stone, with each one fitting together exactly (something of marvellous beauty in no way inferior to the appearance of marble). Above, on the roofs, he protected the exterior structures with lead; a sure protection against winter rains. The inside surfaces of the ceiling were completed with carved panels and, like some great sea, they extended over the entire royal house by continuous interweavings with one another. It was overlaid throughout with radiant gold, of such a kind that made the whole temple glitter with sparkles of light.
37. Around both sides were two rows of double porticoes, an upper and a lower one, which ran the length of the temple. These had roofs embellished with gold. The porticoes by the interior[d] face of the building were supported by columns of enormous size (Fig. 45:14, 17), while those porticoes inside the porticoes before the walls[e] were held up by pillars with much decoration around the outside (Fig. 45:15, 16). Three gates (Fig. 45:18, 19, 20) facing the rising sun were well placed to admit the crowds coming in.
38. Opposite these doors was the main part of all this: a dome (Fig. 45:21) which has been extended to the highest part of the royal house. Twelve columns crowned it, equal in number to the Saviour's apostles. These were adorned at the tops with great bowls made of silver, which the Emperor himself provided[f] as a splendid offering to his God.
39. Then, moving on to the entrances that lie in front of the temple, he enclosed another open area[g] (Fig. 45:6). Here, beside each entrance, there were arcades[h]. There was[i] first a court, and next to this porticoes, and against all of these the gates of the courtyard (Fig. 45:22). Then, right in the middle of the market's colonnaded street, was the beautifully adorned main entrance of the entire complex (Fig. 45:7). The clearly visible view of the interior caused astonishment to those walking past outside.

Notes

a. 'The cave' is added to complete the English sense. In the manuscripts Marcianus 339 (12th century), Parisinus 1432 (13th century) and Parisinus 1437 (13th century) the subsequent phrase 'the holy cave', *to semnon antron*, is not found, and therefore the word 'this', *touto*, covers the whole sentence.
b. Strictly speaking, it is the royal 'generosity' *philotimia* (fem.), that is accomplishing all this, as in the rest of the passage. For the sake of clarity, however, 'he', referring to the Emperor, is substituted instead of 'she'.

c. Eusebius does not use the word 'basilica', *basilikē* in his account.
d. Here the word used, 'face', *prosōpon*, can mean 'façade'. To avoid confusion, the word 'interior' has been added. Eusebius tries to distinguish between the porticoes running along the walls and those flanking the nave.
e. 'The walls' has been added to clarify the meaning in this rather oddly phrased passage.
f. The 11th century Vaticanus 149 manuscript has 'donated': *edōreito*.
g. 'Another' is found only in the Vaticanus 149 manuscript.
h. The Greek word here is *exedrai*, which appears to refer to the porticoes, as Eusebius explains in the next sentence. It is found only in the Vaticanus 149 manuscript.
i. In Greek, the word, *kai*, 'and', is here intensive. Eusebius is simply explaining what he has just stated.

The Byzantine Church Complex

We know considerably more about the Byzantine complex as a result of recent excavations in the Church of the Holy Sepulchre which, combined with the critical evaluation of early Christian literature, can illuminate the architectural history of the area.

The general orientation of the church complex was from east to west (Fig. 45). The main entrance was from the *Cardo Maximus* street, which ran from north to south through the heart of Jerusalem. From the *Cardo*, pilgrims entered a courtyard in front of the basilica (Egeria, *Itin*. 30.1). On the other side of the basilica was another courtyard in which was the Tomb of Christ. Close to the basilica in the south-east corner of this area was the Rock of Calvary.

The church buildings are clearly represented on the 6th century Madaba mosaic map of Jerusalem (Vincent and Abel, 1914, Pls. XXX:1, XXXII; Avi-Yonah, 1954, Fig. 12:2). The entire complex covered an area of about 1.4 hectares. It was probably surrounded by an enclosure wall similar to the one around the Constantinian church complex at Tyre (Eusebius, *Hist. Eccles*. 10:4:37–8; Hunt, 1982, p.16). This enclosure wall, with crenellations along its top, may even have been depicted in the background of the early 5th-century mosaic showing the Rock of Calvary, in the Church of Santa Pudenziana. According to Eusebius, construction work began very soon after the 'discovery' of the Tomb of Christ and was carried out under the supervision of Bishop Macarius, after instructions by the Emperor (*Vita Const*. 3:29–30). The dedication ceremony took place in A.D. 335, but certain parts of the church complex, the Anastasis for example (see below), appear to have remained unfinished until much later.

Since the late 19th century, numerous attempts have been made to reconstruct a plan of the Byzantine church complex. The most important of these are the plans published by Vincent and Abel (1914, pp.154–180, Pl. XXXIII), Coüasnon (1974, pp.21–50, Pls. VIII, XXI) and Corbo (1981–2, pp.51–137, 223–228, Pl. 3). To these we can now add our own plan (Fig. 45).

It is certain that the complex had a *propylaea* entrance which formed part of the colonnaded street, the *Cardo Maximus* (Fig. 45:7). The Madaba mosaic map depicts a huge flight of steps leading from this street. At the top of this flight of steps were three doorways leading to a large open courtyard with porticoes on three sides (Fig. 45:6). These same three doorways are mentioned by Egeria (*Itin*. 43:7), and the remains of two of them still exist: the larger central doorway behind the bakery of Zalatimos, and the southern doorway in the area of the Russian property (Clermont-Ganneau, 1899, pp.89–94; Vincent and Abel, 1914, II, pp.40–88, Pls. III–X; Coüasnon, 1974, pp.44–46; Corbo, 1981–2, p.226). We have already seen that the wall surrounding the courtyard is probably Constantinian rather than Hadrianic (see above, p.67).

The Basilica

The general layout of the Constantinian basilica, the Martyrium, is reasonably certain (Fig. 45:5). Corbo's (1981–2, pp.226–7, Pl. 31) reconstruction of the church is to be preferred to the one published by Coüasnon (1974, Pl.VIII), which includes too many hypothetical details. The foundations of the apse were discovered in 1971 below the choir of the present Katholikon, indicating that the basilica faced the Tomb of Christ (Coüasnon, 1974, Pl.XXb; Corbo, 1981–2, pp.104–7, Photos 87–88, Pl.3), although it was slightly offset to the south. Above the apse, the roof of the basilica opened up into a dome (Davies, 1957, pp.171–2). This was not simply a ciborium over the altar in the apse (Wilkinson, 1981, p.170) but was, as Eusebius states, 'extended to the highest part' of the basilica (Fig. 45:21). It was surrounded by twelve colonnettes capped with silver bowls donated personally by the emperor (cf. Breviarius, form A:1, which says the colonnettes were made of marble; transl. in Wilkinson, 1977, p.59). It seems to us very likely indeed that the Madaba mosaic map depicts this dome rising up on the western side of the basilica, rather than, as is often supposed, the Anastasis structure around the Tomb of Christ. The mosaic depicts what appear to be a series of windows along the eastern side of the dome.

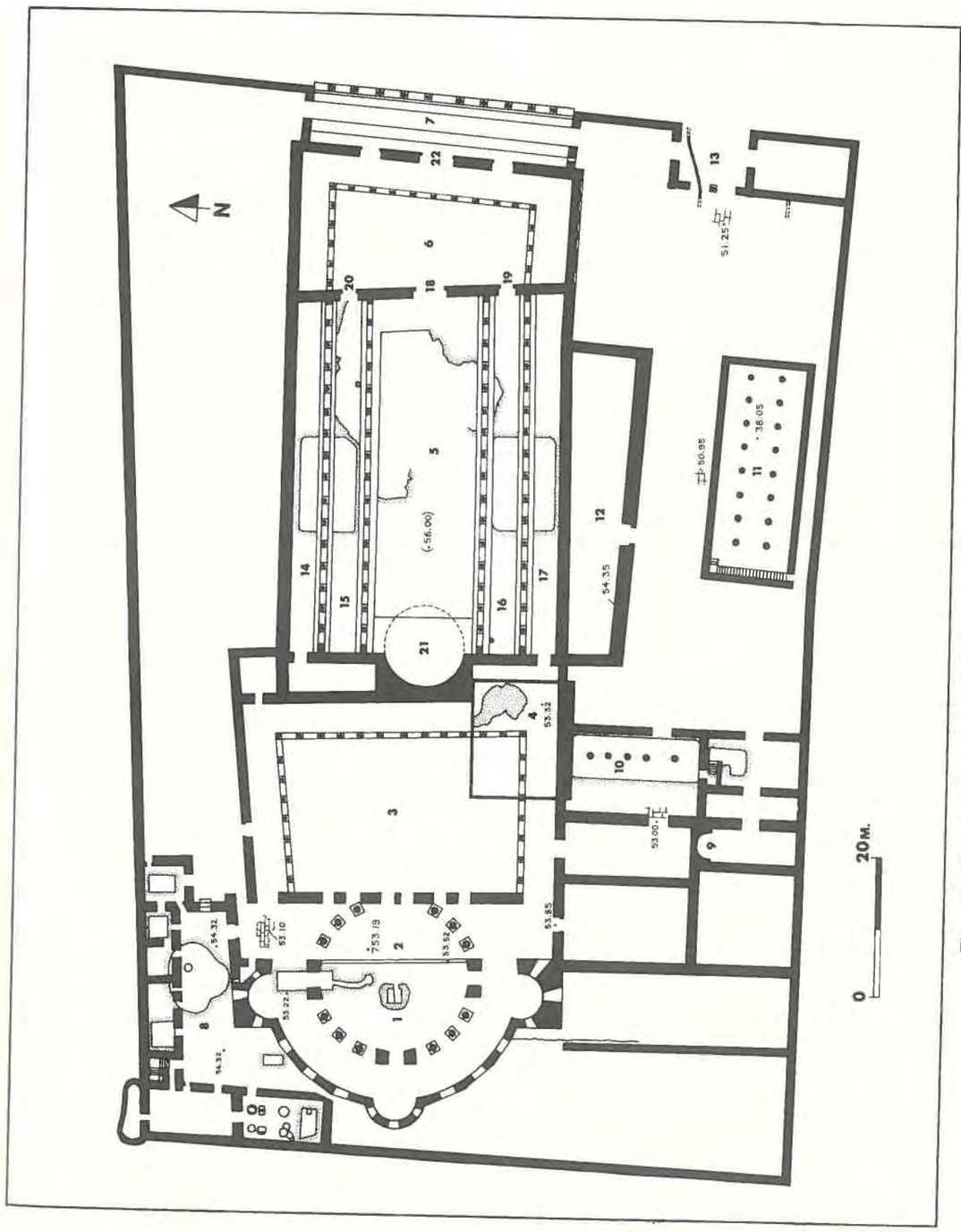


Figure 45. Reconstruction of the plan of the Byzantine church complex. (S.Gibson).

The basilica was 58.50 m. long and 40.50 m. wide. Three doorways gave access from the open-air courtyard before it. The church had a central nave which would have been illuminated by high windows in a clerestory, and double aisles supporting upper galleries on each side. According to Eusebius, different types of pillars were used for the colonnades lining the nave and for the inner colonnades separating the aisles. A stylobate wall (Fig. 6: wall 4) for a colonnade separating the central nave from the northern side aisles was found during the excavations in the Chapel of St. Vartan (see above, p.21). The western extension of this wall exists on the north side of the Chapel of St. Helena and in Corbo's area 305. The south wall of the chapel is the stylobate for a colonnade separating the nave from the southern side aisles. The western extension of this stylobate (Fig. 41: wall 6; Corbo's wall N) was unearthed on the eastern side of the Rock of Calvary (Katsimbinis, 1977, p.209) along with a stylobate wall for a colonnade separating the two southern aisles. These foundations have many stones taken from dismantled Hadrianic structures, showing that the emperor's order, recorded by Eusebius, that the materials of the destroyed Hadrianic temple should be carried off and dumped as far away as possible (*Vita Const.* 3:27) was not obeyed to the letter. The central nave, defined by the lateral walls of the Chapel of St. Helena, had a width of 13.30 m. (for a different measurement see Coüasnon, 1974, p.41).

An important source that has hitherto been overlooked is a manuscript by the monk Neophytos of Cyprus which describes Coptic excavations of 1835 extending from the floor of the Crusader cloisters down to a cistern below the southern aisle of the basilica (Spyridon, 1938, pp.124–5). The Copts, according to Neophytos, while 'digging over the Cave of the Invention of the Holy Cross, . . .found the remains of the walls of a big church, built of large stones dressed in a regal fashion. Underneath the altar they came upon a large cistern, half cut into the rock and half built of stone. The cistern was filled with earth and stones. They emptied it at great expense and the earth and stones were enough to form a hill'. This cistern is probably the one which appears in Schick's (1885, Pl.VII) plan of the church (Fig. 3:6).

The Martyrium was built, as was the former temple of Venus, on an artificial hill, which filled in the irregularity of the rock levels caused by quarrying. It was noted above that the Madaba mosaic map depicts a very large flight of steps extending from the *Cardo Maximus* westwards; this would seem to indicate that people looked *up* to the level of the basilica. The floor of the basilica was much higher than the level of the western courtyard in front of the Tomb of Christ. From the evidence provided by excavations conducted east of the Rock of Calvary, it seems that the *floor* of the basilica may have been close to the level of the *top* of the Rock of Calvary (see Fig. 41). People standing in the western courtyard would have looked upon the upper western face of wall 5. The lower part of this wall is preserved to a height of 7 metres above bedrock (elevation 754.40), and joins on to walls 6 and 7, which are similarly high (elevations 754.35 and 755.50 respectively). There is no evidence in any of these walls of a floor join. Indeed, there is a drainpipe running down wall 6, from which water drained from a floor much higher than its preserved height (elevation 754.35). In short, all of these Constantinian walls are foundations which were located below the floor level of the basilica. They stand about 2.5 metres above the level of the western courtyard, and approximately 3 metres below the level of the top of the Rock of Calvary. The Constantinian foundation walls in the Chapels of St. Helena and St. Vartan tell a similar story. Wall 4, for example, has a preserved height of 10.35 m. above bedrock (elevation 754.35). The top of the highest point of bedrock recorded over the eastern end of the Chapel of St. Vartan has an elevation of 754.60.

The evidence of the height of the walls east of the Rock of Calvary (and wall 7 in particular) suggests that the height of the basilica's floor was higher than 755.50. We do not know how many more metres we should allow on top of this for the construction of the floor, but if we allow merely 50 cms., the *minimum* floor level would have been at elevation 756.00, i.e. more than 2.5 metres above the level of the western courtyard around the Tomb of Christ.

Vincent and Abel (1914, Pl. XXXIII) believed that the Chapel of St. Helena and the Cave of the Invention of the Cross were parts of a crypt below the basilica (cf. Duckworth, 1922, pp.124–127). Coüasnon (1974, p.41, Pl. VIII:11) did not make such a suggestion, but he postulated a vaulted passage with steps extending down the southern wall of the chapel to the Cave of the Invention of the Cross. There is no archaeological evidence to support this idea; consequently Corbo (1981–2, p.107) does not believe that Constantine's basilica had a crypt. Moreover, the Cave of the Invention of the Cross must have been blocked by the eastern extension of the southern stylobate wall. The entire area of the present Chapel of St. Helena was probably blocked up with soil during the time of Constantine. As stated above (see p.21), the condition of the mortar of walls 4 and 6 in the Chapel of St. Vartan (Fig. 6), with soil encrustations reaching to the top, indicate that this area was blocked up with fill by the Constantinian builders.

Wall 6 in the Chapel of St. Vartan was probably built to support the overhanging rock roof. There was probably a wall above it separating the outer courtyard from the nave of the basilica. The alignment of wall 6 corresponds with part of the façade wall (Corbo's no.410) of the basilica located in the area of the Russian Hospice (Corbo, 1981–2, p.111).

The Anastasis, the Tomb and the Western Courtyard

A large paved courtyard open to the sky, Corbo's 'Triportico', existed in the area west of the Martyrium (Fig. 45:3). According to Eusebius, it had long colonnades on three sides. The Rock of Calvary was located in the south-east corner of the courtyard (Fig. 45:4) and the Edicule towards its western end. Later a wall with eight doorways linked the courtyard with the Anastasis, which was built to house the Edicule some time before 381. These are probably 'the doors of the Anastasis' which Egeria (*Itin.* 24:1) mentions were 'opened before cock-crow each day'. Constantinian quarrying took place to the north-west and west of the courtyard, isolating the Tomb of Christ from its surrounding rock (Fig. 45:1). This rock may have been left exposed to view, since there were rock surfaces visible which Cyril could point to as bearing witness to the death and resurrection of Christ (e.g. *Cat.* 4:12; 13:34, 39; 18:16). Rockiness appears to have been a feature of the Constantinian western courtyard: the Rock of Calvary and the Tomb of Christ were both made of rock. Cyril could stress this in particular in regard to the Tomb (*Cat.* 13:38, 35; 14:22). Cyril emphasises that the rocks of the region were split at the time of Christ's death (see below). The tomb was preserved within a structure with a pointed roof and surrounded by a metal grille and small columns. The pointed roof is clearly represented in a model of the Edicule on a gold ring, dating from the Byzantine period, found during excavations along the southern wall of the Temple Mount in Jerusalem (see the colour reproduction in Bahat, 1990, p.77). As we saw above in the discussion of the area's topography, the floor of the tomb was located a little above the adjacent Constantinian pavement (elevation c. 753.30) and three steps led up to its entrance. As for the shape of the Edicule, this has been most successfully determined by Wilkinson (1972). The 5th-century Narbonne model would appear accurately to reflect the form of the Edicule of this time.

The Anastasis was a structure supported by a circle of columns and three pairs of piers. It is often thought to have been a domed structure, though there is no literary or archaeological evidence for this idea. The archaeological evidence suggests that it was a semi-circular building. Since, according to our analysis of the Madaba mosaic, it is not shown there, it is likely that the Anastasis was not especially high or imposing (the Byzantine walls are currently preserved to a height of 1.5 m.: Corbo, 1981–2, Photo 132:A). The roof may have been fairly flat, like that of both the Arian and Orthodox baptistries in Ravenna. The original Byzantine floor level around the Edicule was probably at elevation 753.10–30. This may be inferred from the height of the top of the vaulted subterranean chamber No.68 (elevation 753.22) immediately north of the Edicule. Floor levels in the immediate vicinity include a surface at elevation 753.19 revealed in a trench excavated between the Edicule and Pier 64 (Corbo, 1981–2, Pl. 19:1, p.64) and the remains of a pavement with an elevation of 753.10 in the northern transept (Corbo, 1981–2, Pl.10:E). The threshold of the doorway at the end of the southern transept has an elevation of 753.85, but the difference in height can be explained by there having been steps between the pavement and doorway.

At the time when the basilica was dedicated, in A.D. 335, the Anastasis clearly had not yet been built. It was not mentioned by Eusebius, the Bordeaux Pilgrim or Cyril of Jerusalem (Coüasnon, 1974, p.14–17; and see Wistrand, 1952, p.24). It seems likely that the Hadrianic *favissa* (area 68) was used for the drainage of rainwater at a time *before* the region was covered over, which would explain the Constantinian tunnel leading to the *favissa* from the south. This construction shows that the Anastasis was not part of Constantine's plan. The Anastasis was most likely constructed during the latter part of the reign of Constantius II (A.D. 337–361), who consolidated the programme of Christianisation and church building begun by his father Constantine. The fact that Cyril does not mention the Anastasis building is not as significant as the omissions by Eusebius or the Bordeaux Pilgrim since Cyril never attempted to describe the structures on the site, and is notoriously vague about architectural details. Since these were clearly visible to the catechumens he was addressing in his lectures, they did not need to be described. Mention was made of architecture only when it was useful in Cyril's discourse.

In the north-west angle of the building complex, there was a series of rooms opening out into an internal courtyard (Fig. 45:8; Corbo, 1981–2, p.227, Pl. 3). Associated with these rooms were storage spaces, cisterns and two olive pressing installations (Corbo, 1981–2, Photos 124–126). The presence of such installations within a religious establishment is not surprising when one considers the necessity of a steady supply of holy oil required for visiting pilgrims. The oil would also have been used for more mundane lighting purposes within the church complex.

The Baptistry

Corbo suggested that the baptistry was located in the front courtyard of the Patriarchion, in area 116 (Corbo, 1981–2, pp. 132–4, Pl.3; *idem*, 1988, p.412).

This would have been in a very cramped situation. The baptistry was more probably located on the south side of the building complex (Fig. 45:9). The Madaba mosaic map shows a square building in Jerusalem with a gabled roof and two doorways leading into an open space further east (Avi-Yonah, 1954, Fig. 12:9, p.54) which appears very likely to be the baptistry. Vincent and Abel (1914, II, pp.138–44, Fig. 93) suggested locating the baptistry below the three medieval chapels on the west side of the present forecourt of the church (cf. Coüasnon, 1974, pp.46–50). Our reconstruction (Fig. 45:9) places it further west. This was worked out on the basis of the Constantinian walls and pavement (elevation 753.00) found during excavations below the southern atrium of the present church (Corbo, 1981–2, Pl. 56). Avi-Yonah (1954, p.54) and later Coüasnon (1974, p.48) suggested that it might have been a Hadrianic bath house before being converted into a baptistry. However, there is no clear textual or archaeological evidence to support this notion. The Bordeaux Pilgrim of A.D. 333 mentions that near the basilica there were 'cisterns of remarkable beauty, and beside them a bath where children were baptized' (*Itin.* 594, transl. in Wilkinson, 1981, p.158). These cisterns can be identified as Cistern A (Fig.45:10) under the southern atrium (Corbo, 1981–2, Pls. 52–4) and the large cistern (Fig. 45:11) under the Monastery of St. Abraham (Schick, 1889B). The flagstone pavement over this cistern is located at elevation 750.95 (for additional information about this pavement, see Schick's comments in a letter to Hayter Lewis of June 28th 1889: PEF Archives/LEW/1/225–6). This means that people crossing the pavement from the *Cardo Maximus* westwards towards the baptistry, would have done so under the towering basilica on the north which, as we have seen above (p.76), had a floor level at approximately elevation 756.00. The building itself probably had a height of 20 metres, if not more. Hence the area between the basilica and pavement may have been stepped artificially into one or more levels. A wall (Fig. 45:12), 3 metres thick, running on a line parallel to the north wall of the cistern below the Monastery of St. Abraham, has been added to our plan. While the upper parts of this wall are clearly of 12th century date (Clermont-Ganneau, 1899, pp.94–5: wall o-p; Vincent and Abel, 1914, Pl.XIII:i), we believe its foundations are probably Byzantine. A small guardroom (Fig. 45:13) led from the *Cardo Maximus* to the pavements extending up to the baptistry on the west. The walls of this structure, of Byzantine date, were re-used and partly rebuilt during the 11th or 12th centuries (Clermont-Ganneau, 1899, pp.85–8).

According to Cyril of Jerusalem (*Cat.* 1:2) the baptistry had an outer hall where candidates renounced Satan before going into the bath itself (see Pocknee, 1971, pp.309–11 for further details concerning these ceremonies). Egeria (*Itin.* 38:1) tells us that 'as soon as the 'infants' have been baptized and clothed, and left the font, they are led with the bishop straight to the Anastasis. . .' (transl. by Wilkinson, 1981, p.138–139), indicating that there was direct access from the baptistry complex to the Anastasis.

Before and Behind the Cross

Coüasnon (1974, pp.50–53) suggests that a chapel existed between the Rock of Calvary and the Martyrium. The basis for this assertion is not archaeological but literary. Coüasnon found it significant that Egeria, in one single place, draws a distinction between the Martyrium, known as the church 'behind the Cross', *post crucem* (*Itin.* 24:7), 'the Great church . . . on Golgotha behind the cross' (25:1, 6; 27:3, 30:1), 'the church on Golgotha' (48:1) or 'Golgotha behind the cross' (37:1) and, supposedly, another place 'behind the cross' (25:2). We believe the area before the cross, *ante crucem*, is the western courtyard (Fig. 45:3). On Holy Thursday, wrote Egeria, 'after the dismissal at the Martyrium they go behind the cross, where they have one hymn and a prayer; then the bishop makes the offering there and everyone receives communion. On this day the offering is made behind the cross, but on no other day in the whole year. After the dismissal there they go to the Anastasis . . .' (*Itin.* 35:2, transl. in Wilkinson, 1981, pp.134–5). Coüasnon (1974, p.51, cf. Wilkinson, 1981, p.43, 45; Corbo, 1988, p.406) proceeds to use the reference to suggest that another place behind the cross existed, other than the Martyrium, where services might be held. In doing so he does not take into account the important evidence of the Armenian Lectionary, written early in the 5th century, only a few years after Egeria's visit, where the offering on Holy Thursday is recorded as being made in the Martyrium and *before the cross* (*Arm. Lect.* 39), namely in the courtyard (cf. *Itin. Eg.* 24:7, 36:3, 37:4, 8, 39:2, *Arm. Lect.* 42, 43). It would seem clear that Egeria made a mistake in recording her experiences in the later complex of buildings, and that the offering was made where the Armenian Lectionary has it. Pilgrims, who often recorded their observations in a state of excitement, were by no means infallible in their reports. Coüasnon (1974, p.51), however, proposes that the extra chapel 'behind the cross' was located to the south of the Rock of Calvary, along the prolongation of the southern lateral nave, accessed by a second atrium which preceded the forecourt of the Anastasis. How the vast assembly of the faithful were to have fitted into such a small chapel in order to sing a hymn, pray and take communion is not explained. Moreover, the natural progress of the pilgrims on Holy Thursday was from the Martyrium through the courtyard to the Anastasis.

Coüasnon takes another reference from Egeria, which most naturally refers to the Martyrium, and arbitrarily assigns it to this hypothetical chapel. Egeria writes (*Itin.* 26:5) that the multitude of people who have come from the Mount of Olives arrive before the cross, in the courtyard, where the Bishop tells them that they must all 'be back *here* at about eight o'clock so that till midday you can see the holy wood of the cross', and Egeria re-iterates the instruction that 'from midday onwards we must assemble here before the cross again' (transl. in Wilkinson, 1981, p.136). Accordingly, the crowds assemble in the courtyard at eight o'clock. However, they do not venerate the cross in the area of the courtyard, because Egeria says that the people enter the church 'on Golgotha behind the cross' by one door (leading from the courtyard) and go out through the other. They do not go back to the courtyard by this other door, because at midday 'they go before the cross' again (*Itin.* 37:4). The Bishop's chair is then removed from its former place behind the cross (in the Martyrium) and placed before it (in the courtyard). Nothing in Egeria's account would suggest that this church 'behind the cross', where the relics are displayed, is anything other than the Martyrium. She writes that the veneration takes place where on Thursday they made the offering, but since they made two offerings on Thursday, one of which was in the Martyrium, this does not tell us very much. It may well inform us that the place where the Bishop was sitting displaying the relics was right beside the altar of the basilica. In this case, the *Armenian Lectionary* would indicate that the situation had changed by the time of its writing. Instead of filing into the Martyrium, pilgrims who were assembled in the courtyard venerated the cross there (*Arm. Lect.* 43). This is also attested by the 6th-century Piacenza Pilgrim (*Itin.* 20). It would appear that the transfer of the place of veneration occurred after a small room was built in the courtyard to house the relics; the Piacenza Pilgrim describes how the cross is brought out of the small room to the courtyard, and is laid down so that people can offer oil in little flasks to be blessed. These were sanctified after they touched the holy wood. This is clearly quite a different ceremony from the one in which Egeria participated.

Chambers of Relics

There is then the question of whether this room where the cross and other relics were housed was located in the space between the Rock of Calvary and the basilica. The Breviarius in its form A (c. 500 A.D.) has it that there was a chamber on the left as one went into the basilica from the eastern courtyard (Fig. 45:6) 'in which has been placed the cross of the Lord', while form B does not give its location with such accuracy: 'There is a chamber in which has been placed the cross of Our Lord Jesus Christ. After that you go into the basilica' (transl. in Wilkinson, 1977, p.59). It does seem, however, that the chamber where the wood of the cross was housed was in the atrium of the basilica. Pilgrims entered through the main doors, were shown a chamber on the left, and then entered into the basilica's interior hall.

Another later chamber of relics, containing the reed, sponge and lance, among other things, is mentioned by Sophronius (c. 614) as being an upper room he ascends to, and from which he can gaze down upon the interior of the basilica where monks sing choruses of worship (*Anacreontica* 20:47–48). Epiphanius the Monk (A.D. 750–800) records this sanctuary, in which were kept the cup, basin, lance, sponge, reed and linen cloth seen by Peter, as being above a door leading (from the western courtyard) into the basilica (*Hagiopolita* 2:15), which confirms Sophronius' evidence that it was on a far higher level than the courtyard. It is probably this room or chapel which Adomnan (*De Loc. Sanct.*1:7) in the late 7th century refers to as being 'set between the church of Golgotha and the Martyrium'. A church around the Rock of Calvary, now referred to unanimously in the sources as 'Golgotha', was built by the abbot Modestus, c.614, and it would seem that this upper room was attached to the basilica, above an entrance, in a place that could be understood as lying between the basilica and the 'church of Golgotha'. On Arculf's plans (Wilkinson, 1977, pp.197–198) there is a small square to the east of the 'church of Golgotha', directly in front of the southern entrance to the basilica, which would neatly fit all the requirements. Arculf has drawn the 'church of Golgotha' and the basilica further apart than he should have in order to accommodate this small upper room. This upper room must have been built to attach Modestus' 'church of Golgotha' to the basilica (cf. Adomnan, *De Loc. Sanct.* 1:6:1). There is then no literary evidence for any employment of the area between the Rock of Calvary and the Martyrium before the 7th century. In the time of Arculf, the lance was sufficiently important to be shown in the basilica itself (*De Loc. Sanct.* 1:8), perhaps where the wood of the cross was once housed. Long before his visit, the wood of the cross had been transferred to Constantinople for safe keeping.

Golgotha

Some confusion has reigned as to precisely what Cyril is referring to when he uses the term 'Golgotha'. Corbo (1981–2, pp.92–93) simply assumes that he is making repeated references to the Rock of Calvary, rather than to the entire site. As was indicated

above (p.59), we do not believe that this is so. Cyril, like Egeria, referred to Golgotha as the whole site. Wilkinson (1981, p.42, n.4) allows that Cyril may have been referring to the Rock alone at *Cat.* 10:19 and 13:4, but this is also pushing the evidence. There is no reason to doubt that Cyril was perfectly consistent in his employment of the term. There is a much quoted passage from Cyril's lectures (*Cat.* 13:39) which has hitherto been slightly misunderstood. Coüasnon (1974, p.50) translated the passage as follows: 'He who will convince Thee, this St. Golgotha, he who dominates and is always to be seen, showing, even unto this day, that the rocks were riven because of Christ'. He concluded that, 'therefore, one saw the rock then as one sees it today'. This same passage is translated by Corbo (1981–2, p.93) as: '*Ti contraddice questo santo Golgota che si innalza e che e ancora visibile, e mostra ancora come le pietre si sono spaccate a causa di Cristo*'[40] and Hunt (1984, p.12) uses the same passage to show that the actual rock 'stood above' the basilica. However, this is not possible, considering that it was the basilica which towered over the Rock. It is very clear from the context, however, that Cyril is using the verb form ὑπερανεστώς in this passage, as he uses it in its weak form in *Cat.* 10:19, to mean 'pre-eminent' or 'superior', a metaphorical sense rather than the literal meaning of 'that which is standing up'. It would be quite impossible for the Rock to have 'stood above' the basilica, since the top of the rock (758.32) was only about two metres higher than the minimum *floor* level of the Constantinian Martyrium (circa 756 m.). It would have been dwarfed by the magnificent edifice constructed to the east. Cyril's comment should therefore be translated:

> This holy Golgotha, which is pre-eminent, and visible even today, shows even now how the rocks of that time were broken into pieces on account of Christ.

Indeed, the passage would appear to show that evidence of the quarrying activities in the area was interpreted to signify how the rocks (note plural) there had been broken by the earthquake of Matt. 27:54. It is for this reason that the visibility of parts of the ground of Golgotha – the entire area – bears witness in *Cat.* 10:19:

> This holy Golgotha, which is pre-eminent, visibly bears witness.

As stated above (p.59), Jerome's attestation that there were other places called 'Golgotha' around Jerusalem may explain Cyril's use of 'pre-eminent': it is far superior to the other sites that have the same name.

The Rock of Calvary

Archaeological excavations on the eastern side of the Rock of Calvary (Katsimbinis, 1977, pp.197–208; Bagatti and Testa, 1978, pp.33–40; Corbo, 1981–2, pp.92–101, Pls. 40–45, Photos 91–101, but note that Photo 92 is inverted and mislabelled; Díez, 1984, pp.34–36) confirm that the area was first developed as a church by abbot Modestus (see Corbo, 1981–2, pp.98–100, Pl. 40, 45) and that prior to the 7th century it was not contained within any ecclesiastical structure. Nevertheless, it would seem that the actual rock was largely covered over, except at the top. The crevice at the top of the Rock of Calvary is mentioned by pilgrims only from the early 11th century onwards (Wilkinson, 1988, pp.102, 128, 172, 212, 220, 229, 259, 286, 324), which may imply that part of the top was also under cover. Certainly, some part of the Rock could be seen (cf. Eucherius, *Letter to Faustus* 6). The Piacenza Pilgrim of A.D. 570 writes that one could see the place where Christ was crucified (the Rock of Calvary) and the actual rock upon which Christ's blood fell, though he does not say precisely where this living rock was visible. He records that there was a crevice at the bottom of the Rock of Calvary, but he is silent about any corresponding crevice at the top.This would tend to support the thesis that the top of the Rock was partially obscured, despite the evidence of the early 5th century mosaic in the church of Santa Pudenziana which depicts a golden crucifix upon a rocky knoll. One might note, however, that in this representation the rock shown is quite unlike the actual Rock of Calvary in being round at its summit rather than flat. Certain Byzantine coins show a cross standing above one to four steps (*DACL*, col.3096), while Byzantine glass pilgrim flasks clearly depict two or three steps on either side (Barag, 1970). It is precisely because a cross stood on the site that Egeria referred to locations as *ante crucem* and *post crucem*. It appears represented on coins of Theodosius II and Eudocia from the year 420 and also on a recently discovered terracotta ampulla now in the museum of the Studium Biblicum Franciscanum (Corbo, 1988, pp.420–22, Fig. 5), which may date from the 5th century. It is found in stylised form on the 6th century pilgrim flasks of Bobbio and Monza (Grabar, 1958, e.g. Nos. 4, 8–11). Steps leading up to the summit are mentioned by the 6th century pilgrim Theodosius (*Itin.* 7a) and the Piacenza Pilgrim (*Itin.* 19), although they both fail to mention the existence of a cross. The account of Theophanes (*Chron.* 86:28), which preserves a story that Theodosius II donated a gold, bejewelled crucifix for the Rock of Calvary, is of a late date (9th century) and probably legendary (see Taylor, 1993).

Corbo (1988, p.415) may be correct in identifying the assemblage of features discovered on the north side of the Rock of Calvary during the recent Greek Orthodox excavations as forming the top part of a flight of steps which went up the north side of the Rock, though how early this flight of steps should

Figure 46. The north-western edge of the summit of the Rock of Calvary, towards the south-east, after the Greek Orthodox excavations of 1988. (photograph: S.Gibson).

be dated is a moot point. Whitish and brown plaster adheres to the surface on the northern and western sides of the Rock (Fig.46). The 19th-century Greek Orthodox altar has cut into the plaster which runs further along the western side. In the brown plaster there is a depression about 25 cm. square which appears to have held a colonnette or bannister. Adjacent to the north-western side of the Rock there are the remains of the floor or platform which Corbo considers the top of the stairs. This floor is covered by small pieces of rust coloured stone and a chancel-post is embedded in the side. There is a small gap between the side of the Rock and this platform, wide enough to hold a slab of marble. While the platform is clearly ancient, the re-used Byzantine chancel screen post argues against it belonging to the earliest stage of construction around the Rock. It is also unlikely that the post was placed there in a position where it could be seen. A square upper level was constructed at the time of abbot Modestus, but even this date may be too early. If Caliph Hakim systematically destroyed most of the Christian buildings in the area of Constantine's complex, then it is unlikely that he left this part untouched. The 'Church of Golgotha' built by Modestus (see below) was too high and beautiful for him to have ignored it. The pilasters of Modestus's church appear to have been left, but the silver screen around the Rock, and much of its marble, would have been taken away. If we imagine that there was, after Hakim, considerable Byzantine debris on the site, then the use of an old chancel screen post in reconstruction is understandable. Abbot Daniel (12, Wilkinson, 1988, p.129) attests that after Monomachus' restoration work the floor of the top part of the Calvary church was laid with lovely marble slabs. Theoderic (12/19, Wilkinson, 1988, p.285) wrote that the top of the Rock of Calvary was 'mounted on a big step, made of excellent Parian marble on the left'. 'On the left' is precisely where the architectural features are found; so it would appear that what we have are the remnants of what lay underneath the marble slabs placed by Monomachus: supportive foundations not meant to be visible, which lay adjacent to the top of the flight of steps.

The Eastern Side of the Rock of Calvary

As we have just seen, there is no archaeological evidence for any room 'behind' the Rock which might confirm the Constantinian reconstructions by Coüasnon (1972, pp. 50–52; Pls. 8 and 11) and Wilk-

inson (1971; 1981, p.45; 1977, p.174). The excavations, however, have not been published in a comprehensive report, although Corbo has presented most of the evidence, and it may therefore be useful to look at certain details here (and see Fig. 41).

To begin with, we can be certain that wall 3[41] (Fig. 43:14; Corbo, 1981–2, Pl. 40, 41: Photo 91, 92) is Hadrianic, as Díez (1984, p.34, 36) has suggested and not Constantinian, as Corbo (1981–2, p.101) proposes. The finely-finished stones and dry construction point to a 2nd-century date. Moreover, wall 3 is not, as Corbo mistakenly assumes, entirely parallel to the Constantinian wall 5 (Corbo, 1981–2, Photos 91, 92, 95, 96, 98, 99). At its southern extremity, which meets the fill under Crusader wall 10 (Corbo, 1981–2, Photos 91, 92, 95), wall 3 is over 2 m. distant from wall 5, while four metres north it is only 1.90 m. distant.

Wall 5 must be Constantinian (contra Díez, 1984, p.34 who thinks the bottom part is Hadrianic and the upper part Medieval) because it forms the main south-western wall of the Martyrium (see above, p.76), and to have the foundations of a Hadrianic wall there for the taking would be too coincidental. Furthermore, its upper part is constructed in exactly the same way as other Constantinian walls in the church: re-used stones, some with heavy bosses, are used together with new stones and the courses are bound together with mortar. There are two walls running perpendicular to wall 5: walls 6 (Corbo, 1981–2, Photos 97, 98, 99) and 7 (Corbo, 1981–1, Photos 97, 101), which have been mentioned above (p.76) as forming stylobate walls of the Constantinian basilica (Corbo, 1981–2, p.226). The lower part of wall 5, under a pronounced shoulder, is made up of rougher stones up to a height of 4 m. above bedrock. While the construction of this part of the wall cannot be said to be typically Constantinian, it adjoins walls 6 and 7 too neatly to have been constructed at an earlier time. It is not like any other Hadrianic walls and, unlike wall 3, it is clearly designed to be below ground level. It has a thick layer of mortar upon bedrock at its base for added strength. The lower part of wall 5 is therefore simply a sub-structural wall constructed in a particularly rough manner.

It is likely that this lower part of wall 5 was built some years before the upper part and the adjoining walls 6 and 7, because in the area immediately to the east of the rock, between walls 3 and 5, an oven with the small wall 4 was discovered (Katsimbinis, 1977, p.206, Fig. 19, 20; Corbo, 1981–2, p.101, Photos 91, 92, 95; Díez, 1984, p.34, Fig. 53). This oven rests on fill which dates from after the first part of the 3rd century, since a coin of Elagabalus was discovered below it (Katsimbinis, 1977, Fig. 23; Díez, 1984, Fig. 54). More significantly, this fill also contained a libation altar (see above, p.67) and other pagan artifacts such as a clay fish (Katsimbinis, 1977, Fig. 27) and the head of a female figurine (Katsimbinis, 1977, Fig. 28), showing that the fill dates from after the destruction of the pagan cult and not before. As Corbo has observed, the oven and its supporting wall 4 were built in the space between wall 3 and 5 after the construction of both these as wall 4 uses them as support. The oven and wall 4 antedate both the fill and the walls (Corbo, 1981–2, p.101). Burnt animal bones and ash, along with a few tesserae, were found within the oven (Katsimbinis, 1977, p.206; Díez, 1984, p.34), which means that the Constantinian builders used it during the course of the construction of the complex. The oven cannot date from Hadrianic times (contra Díez, 1984, p.34) and it is not a sacrificial altar; it is an ordinary cooking oven, a *tabūn*. Corbo (1981–2, p.101) implies that it was used for some kind of building process by noting that another oven has been found in the vicinity which may have been used for bronze working, but the animal remains in this oven clearly point to a culinary use. The oven must have been used before the upper part of wall 5 was constructed, which would have made the area less accessible.

The employment of this area to the east of the Rock as a camp during the building of the Constantinian complex would account for what Díez identifies as a beaten earth floor relating to the oven (in Katsimbinis, 1977, p.207), which probably resulted from earth being compacted over the course of a year or more. The later identification by Díez (1984, p.36) of three successive earth floors is, however, questionable.

The Constantinian builders modified the form of the upper part of wall 3 in a curious way. It would appear that they began to dismantle the wall, as they did most other Hadrianic walls, but then stopped at an elevation of 752.62. The reason they stopped, we suggest, is that they realised that the wall actually supported the Rock of Calvary, which had a great cavity in the centre, running vertically down the eastern side to its base. Wall 3 is built on fill (see Corbo, 1981–2, Pl. 41), which means that even at the very bottom of the area, no solid rock could be found to support the eastern side of the rock. The Rock of Calvary was almost hollow. There can be no doubt that it was for this reason that the rock was left unused in the middle of the quarry. When the Constantinian builders realised this fact, they patched up what they had recently torn down, re-using the Hadrianic stones. However, they did not build up the wall in the same fashion as before, but built wall 8 close to the rock (Corbo, 1981–2, Photos, 93, 94), creating a smooth, perhaps polygonal (Katsimbinis, 1977, p.205; Corbo, 1981–2, p.99), surface against which they would place the silver screen, which is reported to have encircled

the Rock (Breviarius 2, Wilkinson, 1977, p.59). The remains of the Constantinian wall 8 may be seen to the left of the entrance of the artificial cave (Katsimbinis, 1977, Fig. 5, 15, 16, 17, 18; Corbo, 1981–2, Pl. 41, 45; Díez, 1984, Fig. 56). It appears to us that this wall has been itself broken through at a later date.

Corbo (1981–2, p.97) did not at first suggest a date for the construction of the cave, the so-called 'cave of Adam', leaving it as an obscure area, but more recently he suggested that it was used in the Venus cult (Corbo, 1988, pp.417–8). However, this seems doubtful, especially given the fact that the cave was broken into through the Constantinian walls which hugged the Rock. The present cave cannot date from the Hadrianic period as Díez (1984, p.34) and Corbo suggest because it was very probably covered over by wall 3, which faced this part of the Rock up to the level of the Hadrianic platform around the area of the cult statue of Venus (see above and Taylor, 1989, pp.224–228). It is unlikely that the cave is Constantinian as it was covered over by wall 8 and is not mentioned in any early pilgrim texts, or in any of the earliest versions of the Adam legend associated with the site. The cave is clearly artificial (Corbo, 1981–2, p.96). It was cut into the Rock, probably making use of the existing cavity. The back of the cavity as well as the sides were then faced with dry walling made out of small stones (Katsimbinis, 1977, Fig. 17, 18) and an artificial floor was constructed. There is no trace of wall plaster or of Christian graffiti (Corbo, 1981–2, p.97). The floor level of the cave is 752.92 m., which is slightly below the level of the Byzantine floor of the adjacent courtyard (Corbo, 1981–2, p.97).

It appears likely that, during the ransacking of the church complex by the Persians in 614, the silver screen around the Rock was looted. The Constantinian blocking was first broken through during the restoration work undertaken by Modestus, who built the first 'Church of Golgotha'. The architects of this time were familiar with growing speculation about the burial of Adam at the site (see Wilson, 1906, p.159–166; Taylor, 1989, pp.205–229) and felt confident that this was the place. They broke through wall 8, leaving a jagged edge on the left of the entrance that can still be seen today (see Díez, Fig. 56). They burrowed below the level of the floor to uncover the bottom of wall 8, looking for the bottom of the cave, which they failed to find because it was not a cave at all. Therefore, they quarried out the upper area of the cavity they had exposed and faced the interior with stones to obscure irregularities and re-inforce the walls. An accompanying niche was also cut in the Rock.

This suggested sequence of operations would explain all the various features of the cave's construction. There may have been a few steps leading down to the cave from ground level. It is difficult to tell where an entrance to this area may have been located. The space behind the Rock at this time was only 2.5–3 m. broad and 6–7 m. long and cannot, therefore, have been used as a place of assembly. The first possible reference to the cave comes in the account by Adomnan (*De Loc. Sanct.* 1:5.2, Wilkinson, 1977, p.97) where it is mentioned that there was an altar in a cave under the place of the Lord's cross where the sacrifice was offered for the souls of certain privileged persons. The cave, measuring 2 m. high and 1.5 m. wide, is sufficiently large for a priest to perform the rites. No one else need have been present there. Adomnan expressly states that the bodies of the dead were laid in front of the door of the church until the ceremony was finished, not inside. Mention of the door by Adomnan would rule out the possibility that the church built by Modestus was open on four sides, as suggested by Corbo (1981–2, p.99), but does not help to establish the location of the entrance of this church. The four 7th-century pilasters (Corbo's A, C, D, E: 1981–2, Pl. 40) are situated so close to the Rock that there is very little space except to the west where the lower cleft in the Rock is exhibited. We have seen above how there was an upper level between the church and the basilica, which means that from the 7th century onwards the area behind the Rock was covered over, creating for the first time a sort of room to the east of the Rock. It would seem probable that the entrance to this narrow room was from the south and that Adomnan considered it part of the 'Church of Golgotha'.

The small size of this church in horizontal dimensions (there are only 3.5–4.5 metres between the pilasters), was compensated for by its height. The existing vaulted ceiling is almost 4 m. above the top of the Rock; high enough, in Arculf's time, to accommodate both a large bronze wheel for lamps and a great silver cross (Adomnan, *De Loc. Sanct.* 1:5.1). It stood about 9–10 metres above the floor of the courtyard, and the impression of height, which the narrow structure may have given a 7th century pilgrim, must be the reason why it was described by Adomnan (*De Loc. Sanct.* 1:5.1) as a *pergrandis ecclesia*. Steps led up the northern side of the Rock to the summit (see Corbo, 1981–2, Pl. 40). This church was expanded westwards by the Crusaders to reach its present form.

The Finding of the Cross

In the surviving literary corpus of the church, the first person to mention the wood of Christ's cross is Cyril of Jerusalem (*Cat* 10:19, *PG* 33, 23–30), over twenty years after its supposed discovery, which he does not refer to. The Bordeaux Pilgrim in A.D.333 saw no wood, and Eusebius omits any reference to

the cross in his account of the excavations under Hadrian's temple and his description of the Christian structures that rose up in its place (cf. *Vita Const.* 3:25ff.). Many scholars have doubted whether the wood alleged to be from Christ's cross was really found at the time of Constantine. Drake's recent re-examination of the legend has now proved that these doubts are unjustified (Drake, 1985). Eusebius' silence on the matter of the wood may be explained by theological factors (Walker, 1990, pp.252–60). Indeed, Cyril implies that the wood had been on display for some time before c. 348 by relating that it had already been taken all over the world by the faithful:

> The holy wood of the cross, shown among us today . . . has already filled the entire world by means of those who in faith have been taking bits from it.
> *Cat.* 10:19, cf. 4:10

In a letter possibly written by Cyril (*Ad Const.* 3, *PG* 33, 1168–9) it is said that the wood of the cross was found during the reign of Constantine. Eusebius says that wood was around at the building site (*Vita Const.* 3:27) and there is a chance that a piece of this wood was heralded as deriving from the cross, a belief which Eusebius held in scant regard. However, it would not have been wise for Eusebius to have been publicly sceptical. It would appear that the emperor Constantine himself believed that wood from the cross was found at the site. The basilica was constructed, not to honour the tomb, but to honour the 'saving sign' of the cross (*Laud. Const.* 9:16; cf. *Vita Const.* 3:30–2; see Drake, 1985). As Drake has recently suggested, it seems very likely that the dome, described by Eusebius as the main part of the basilica, was designed to enshrine the place, somewhere beneath the apse or altar, where the wood of the cross was discovered.The *Chronicon Paschale* (*PG* 92.713) refers to the basilica as the 'Church of the Holy Cross'.

The finding of the wood of the cross caused a sensation, and soon after its discovery people appear to have broken bits from it for various purposes. In the latter part of the 4th century, it was fashionable to wear lockets containing fragments of the wood (Gregory of Nyssa, *Vita St. Macr. PG* 46, 989; John Chrysostom, *Contra Jud. et Gent. PG* 47, 826, *Quod Christ. sit Deus* 9–10, *PG* 48, 826–7). An inscription dated 359 found at Tixter, near Setif, in Algeria, mentions DE LIGNO CRUCIS (Wilkinson, 1981, p.240). The pilgrim Egeria describes seeing the 'holy wood of the cross' and the title taken out of a gold and silver reliquary box (*Itin.* 36:5 – 37:2, *CSL* 175, p.80–1). This wood cannot have been a large piece as it was placed on a table before the bishop, who sat with his hands resting on either end of it. Egeria later mentions that there was a feast day for the finding of the cross, which was the same date as the feast of the consecration of the Martyrium and the Anastasis, but she does not give any details of the manner or place of the discovery.

Ambrose of Milan in A.D. 395 was the first to mention Helena as the agent of the discovery (*In Ob. Theod.* 46–48; *PL* 16, 1464) and this was soon confirmed as a popular belief in the 5th century church histories. Helena's role may well be legendary. The first known story which accounts for the existence of the wood requires us to believe that it was identified as the true cross because it was lying in between two other crosses and had an inscription (John Chrysostom, *Hom. in Joh.* 75:1, *PG* 59, 461). Thereafter a legend was established that the authenticity of the cross was confirmed by its efficacious cure of a sick woman (Rufinus, *Hist. Eccles.* 10:7–8; Socrates, *Hist. Eccles.* 1:7; Sozomen, *Hist. Eccles.* 2:1; Theodoret, *Hist. Eccles.* 1:17). The sick woman was replaced by a corpse in some traditions (Paulinus of Nola, *Ep.* 31:3, *PL* 61, 325f.; Sulpicus Severus, *Hist. Sacra* 2:34, *PL* 20, 146–8). None of these provides us with a precise location for the discovery of the cross (see also Alexander the Monk, *De Inventione Sanctae Crucis*, *PG* 87, 4038–63).

Early pilgrim accounts demonstrate some unanimity in placing the location of the discovery within the Constantinian basilica, the Martyrium. Form A of the Breviarius, c.500 A.D., records that upon entering the basilica 'to the west is the great apse where the three crosses were found', while form B places the discovery nowhere in particular save that it took place within this structure: *Postea intrans in basilica ibi inuente tres cruces absconditas* (*CSL* 175, p.109). Theodosius (*De Situ* 7, *CSL* 175, p.118), dated to A.D. 518, reports that it was fifteen paces from 'Calvary', the Rock, to the place where the cross was found, which he calls 'Golgotha' (a contracted way of saying 'the Great Church called the Martyrium on Golgotha Behind the Cross' as Egeria called it: *Itin.* 27:3, cf. 25:1,6; 25:8–10; 30:1; 37:1; 48:1). Fifteen paces would also get him to the area of the apse. The Piacenza Pilgrim (*Itin.* 20, *CSL* 175, p.139), dated A.D. 570, places the discovery *fifty* paces away from the 'Rock of Golgotha', in other words to the middle of the basilica, though he may have used a circuitous route. Antiochus the Monk (*Ep. ad Eustathium*, *PG* 89, 1428) refers to the basilica as 'the House of the Holy Cross'. Epiphanius the Monk (*Hag.* 1) wrote that the three crosses were found in 'St. Constantine', yet another name for the basilica. The same is confirmed by Adomnan (*De Loc. Sanct.* 1, 6–7, *CSL* 175, p.190–1) and in the plans published by Arculf, which show three crosses in the basilica. Here the location is named as *Constantiniana basilica, hoc est martyrium, in quo loco crux dominica cum binis latronum crucibus sub terra reperta est* (cf. Wilkinson, 1977, p.197, Pls. 5,6). These crosses in the plans may indicate three crucifixes, for in c.780 Hugeburc (*The Life of St. Willibald* 97:12–15, trans. in Wilkinson, 1977, p.129) recorded that the crosses were now outside the church near the eastern side, rather than indoors. The belief that the cross was discovered somewhere under the basilica is mentioned by Theophanes Isaurus, A.D. 814–5 (*Chron.* 18, *PG* 107, 315), in the record of the journey to the holy places by Bernard the Monk, c.870 (*Travels* 314, transl. in Wilkinson, p.142), and later by Saewulf (see below). In the letter of the emperor Leo to Omar, King of the Saracens, the three crosses were reported to have been found in a trench where the Constantinian excavators were digging (*PG* 107, 315). After the destruction of the basilica by Caliph Hakim, the restorers discovered the large subterranean cave now composed of the Chapel of St. Vartan and the Cave of the Invention of the Cross. At some stage, its southern part was blocked off and developed into the Cave of the Invention of the Cross. The cross, it was believed, was found here.

There is no literary evidence that illuminates the fifty-one years (so William of Tyre, *Chronicon* I:6) between the restoration of the church complex by Constantine Monomachus in 1048 and the beginning of the Crusader renovations, so the fact that Monomachus was responsible for the excavation of the cave cannot either be confirmed or denied on the basis of literary sources. Saewulf (1102) provides an all too obscure report which concentrates on the splendour that was past rather than what existed in his day, saying 'there is the place where the Holy Cross with the other crosses was found, and where in honour of Queen Helena a great church was built, but it was completely destroyed by the pagans' (10; transl. by Wilkinson, 1988, p.102). Daniel the Abbot appears to have written that while there was once 'a very large square (?) church', undoubtedly the basilica, 'now there is only a small church' (15; transl. in Wilkinson, 1988, p.131) which is a clear reference to the small cave chapel of c.1107. Perhaps a better indication that Daniel is speaking of the cave is provided by the fact that he measured 25 *sazhens*, (one Russian *sazhen* is approximately 152 cm. according to W. Ryan, in Wilkinson, 1988, p.122), or approximately 38 metres, from 'Christ's prison' to the place where the cross was found (13, Wilkinson, 1988, p.129–30) and the room identified as 'Christ's prison' and the Cave of the Invention of the Cross are 40 metres apart, measured in a straight line. Coming so soon after the beginning of Crusader restorations, his reference to the cave may indicate either that it was one of the very first places that the Crusaders worked on, or, more likely, that it was in existence already before their restorations began. After the Crusader restorations, the Cave of the Invention of the Cross was annexed to a sizeable church, the Chapel of St. Helena, a *magna ecclesia*, according to the account of *De Situ Urbis Jerusalem* (4; cf. Wilkinson, 1988. p.178), dated to 1114. The first specific mention of the cave is found in John of Würzburg's *Descriptio Terrae Sanctae* of 1165 (13/152; Wilkinson, 1988, p.263), which is confirmed by Theodoric in 1172 (*Libellus de Locis Sanctis* 18/10; Wilkinson, 1988, p.284).

In conclusion, the literary references pertaining to this area can accommodate the view that it was Monomachus who created the Cave of the Invention of the Cross, and the archaeological remains discussed above (on pp. 23–24) confirm this conclusion. There is no evidence at all to suggest that the Cave of the Invention of the Cross was actually where the cross believed to be that of Christ was discovered.

Notes

1. 'A true stratigraphy of occupation levels does not exist, but only a stratigraphical resemblance caused by levels of fill, which are almost always disturbed.'
2. Photographs of this excavation were given by C. Coüasnon to A.G. Walls in 1971.
3. Plans of the excavated area have appeared in: Broshi, 1977A, Fig. 2; *idem*, 1977B, p.30; Broshi and Barkay, 1985, Figs. 2, 5, 6 and sections (see also *Eretz Israel* 18, 1985, Figs. 2, 5–8); Helms, 1980, Fig. 7 (based on Walls and Broshi, 1977A); Corbo, 1981–2, Pls. 3, 57; Díez, 1984, Fig. 7. A general outline of the excavated area appeared in Coüasnon, 1974, Pl. VIII.
4. The quarrying of *meleke* and *mizzi ḥilu* types of limestone during the Iron Age appears to have been particularly characteristic of Jerusalem. At other sites in Palestine, stones were mainly cut out of the softer *nari* limestone. *Nari* quarries dating from the Iron Age have been found at Megiddo, Samaria and Ramat Rahel (Shiloh and Horowitz, 1975, pp.39–44). It is quite significant that while all but one of the Iron Age proto-Aeolic capitals found in Palestine are made of *nari* limestone, the exception is a *mizzi ḥilu* capital found in Jerusalem (Shiloh and Horowitz, 1975, p.39). See also note 7.
5. See note 27 below for a discussion of datum points and elevations used in measuring the relative heights of walls and rock levels in the Church of the Holy Sepulchre.
6. In Schick's plan of the church (1885, Pl. VII), a rock scarp is shown extending from the western side of the Cave of the Invention of the Cross towards the north below the two altars of the Chapel of St. Helena. It is not clear whether this scarp was seen by Schick or is a hypothetical line. Corbo (1981–2, pp.111–2) mentions a medium height rock shelf in front of the two altars.
7. The *meleke* ('royal' stone) is a close-grained, homogeneous type of white limestone (Avnimelech, 1966, p.28; Shadmon, 1972, p.34). It can be cut into large blocks, which makes it a popular building stone. The *meleke* is relatively soft when quarried but hardens on exposure to the air and acquires an external yellowish or greyish tint. In terms of hardness, it can be classified between the softer *ka'kuleh* and the harder *mizzi ḥilu* limestones.
8. Wall 1 was described by Helms (1971) as the 'spine wall'. Walls 1, 2, 3 and 7 were labelled by Corbo (1981–2, Pl. 57) as walls C, B, A and F respectively and by Díez (1984, Plan 48) as walls D. F, E and G respectively.
9. It should be noted that the alignment of wall 7 was incorrectly drawn in the plan published by Corbo (1981–2, Pl. 57).
10. These stamped roof tiles were mentioned by Helms (1971) but their present location is unknown. Corbo reports that Bishop Kapikian assured him that he had four legionary stamps. Broshi and Barkay (1985, p.123, Pl. 16:C-D) published two of these on tiles apparently unearthed alongside wall 7. Both belong to Barag's classification type IIg6 and therefore come from the 3rd century A.D. Corbo (1981–2, photo 203) published another stamp of a different type, which reads LEGXFR. Part of the lower horizontal and the downward stroke of the F is visible, but only a small part of the R. It is a square stamp which appears to be of the type IIg4 (cf. Barag, 1967, pp.253, 262, 265): the letters F and R are long, narrow and closely spaced; the F has a small 'tail' which flows back towards the X; the X meets the G at the top and the general shape of the letters corresponds with Barag's example. This type is probably of the second century (Barag, 1967, p. 265).
11. The width of Wall 4 varies. A thickness of 2.75 m. and 3.00 m. was recorded by Corbo (1981–2, p.111) and Díez (1984, p.33) respectively. The width of 2.82 m. was ascertained by S. Gibson at the level of the new doorway, during measurements taken in August 1976.
12. The western extension of wall 4, visible in the Chapel of St. Helena, also has an upper part set back by some 23 cm.
13. Additional column drums can be seen built into the western extension of wall 4 in the Chapel of St. Helena.
14. The measurements given by Broshi and Barkay (1985, p.125) do not refer to the dimension of the stone but to the size of the ship drawing.
15. The drawing is said to have been executed in ink in Broshi and Barkay (1985, p.125) but this is a mistake made during the translation of their text from Hebrew into English.
16. Black and white photographs of the 1971 ship drawing were published by Bennett (1974, Fig. 1) and Helms (1980, Fig. 1:top). A sketch of the 1971 ship has appeared in Bennett (1974, Fig. 2) and revised sketches, based on the 1971 photographs, have appeared in Helms (1980, Fig. 4: A–B). Black and white photographs of the present ship drawing were published by Broshi (1977A, Fig. 1:A; 1977, p.32; 1978, p.29), Broshi and Barkay (1985, Pl. 17:C and in *Eretz Israel* 18, 1985, Pl.6:2) and Díez (1984, Ill. 49). Colour photographs of the post-1975 ship have appeared in Broshi (1977C, p.42), Cole (1983, No. 109), and Bahat (1990, p.70). Sketches of the post-1975 ship have appeared in Testa (1976, opp. p.224, in colour), Broshi (1977A, Fig. 1:B), Broshi and Barkay (1985, Fig. 7 and *Eretz Israel* 18, 1985, Fig. 9) and Bahat (1984–5, Fig. 2).
17. As stated in the Preface, this view had also been advanced by S. Gibson until 1987.
18. In a letter to J. Taylor dated 5 March, 1988, Fr. P. Corbo wrote: 'Sono stato proprio io a fare pulire la

barca/cioe il disegno/servendomi della competenza del P. Testa, il quale aveva imparato la tecnica ripulitura da specialisti italiani nella ripulatura del Martyrium di Konon accanto all Grotta dell'Annunzianta a Nazaret'.

19. 'We ourselves chemically cleaned the design'.
20. 'Pig fat'
21. A mast could easily be unstepped and separated from a ship. This made it necessary that it was clearly specified as a piece of equipment that should not normally be removed from the vessel, as can be seen in the legal lists appearing in both Roman and rabbinic sources: cited by Sperber, 1986, pp.18–20, note 2.
22. The external edge of this overhanging gallery may have been the *nsr* mentioned in the Jerusalem Talmud (*j. Shabb*. 11.5, 13b, 15–19) as the place on a ship used as a latrine. Sperber (1986, p.73: 2.5; 154) suggests that the word refers to a location along the side-planking, but this seems unlikely for reasons of hygiene and ritual purity.
23. Long mooring lines would stay taut at all states of the tide.
24. For general information regarding the ancient harbour installations at Caesarea, see Levine, 1975, p.16. For the recent archaeological work there see Raban and Hohlfelder, 1981, pp.56–60.
25. The *Isis Geminiana* ship mentioned by Helms (1980, p.105) is not a good parallel, firstly because it represents a sprit-rig vessel and not a merchantman and, secondly, because it appears on a fresco which has largely been restored (Basch, 1987, p.468, Fig. 1048). Furthermore, it should be added that this vessel is shown being loaded with goods and is not an unloading scene as Helms has suggested (cf. Rostovtzeff, 1957, Pl. XXVI:2).
26. Smooth-faced *mizzi* stones of this type can also be seen re-used in a number of other Constantinian walls in the church, notably: wall N, which is the stylobate for a row of columns separating the nave from the first southern aisle of the basilica (Corbo, 1981–2, Photo 100); wall M at the west end of the first southern aisle of the basilica (Corbo, 1981–2, Photo 98); wall M4 in the southern transept No. 47 (Corbo, 1981–2, Photo 29) and walls M2 and M5, which belonged to a structure associated with cisterns A and B, below the pavement of the southern atrium (Corbo, 1981–2, Photo 10).
27. All the spot heights given by Corbo (1981–2) refer to the 0.00 m. datum located on the paving of the raised level immediately east of the Edicule, which is the equivalent of Vincent's elevation 753.52 above sea level at the same point (see Vincent and Abel, 1914, Pl.XIII:ii) (see Fig. 2). It should be noted that the spot heights which appear on the original plans and sections made by A. G. Walls for the excavations in the Chapel of St. Vartan refer to a different 0.00 m. datum point, which is the equivalent of Corbo's +2.00 m. point (see Fig. 14). In the present volume, all the plans and sections of the Chapel of St. Vartan have been adjusted accordingly. The elevations referred to in the text adhere to the Corbo 0.00 m. datum = Vincent 753.52 elevation.
28. Schick's drawings (Nos. 11–13, PEF Archives/Schick/197/1–3 and see also documentation in Schick/20/1–3) were not published at the time of the discovery of the cave because of their 'incomplete state' (Schick, 1889A, p.68, note 1). New tracings of Schick's drawings were prepared by S. Gibson in June 1988, and are published here with the kind permission of the Palestine Exploration Fund.
29. A large and detailed plan of the cave was prepared by Schick in August 1871 (PEF archives, 208/1–4). It has never been published even though it is undoubtedly the best detailed plan of the cave in existence.
30. Cyril of Jerusalem, *Cat*. 14:9:
' "A shelter of rock" (Song of Songs 2:10) he called the shelter which was then in front of the entrance of the saving tomb. This had been cut out from the rock, as it is the custom to do in front of the tombs. For now it is no longer to be seen, since the protection was obliterated for the present decoration. For, before the preparation of the tomb by the royal munificence, the shelter was in front of the rock.'
31. The blocking stone is mentioned in a number of sources dating from the mid-4th to 9th centuries A.D., but nowhere is it stated that it was circular (see Cyril, *Cat*. 10:19, 13:39; Jerome *Ep*. 108:9:2; Breviarius, Form A, 3; Piacenza Pilgrim, *Itin*. 18; Adomnan, *De Loc. Sanct*. 1:3.1; Bernard the Monk, *Itin*. 11; Jacinthus the Presbyter, *Itin*. 9; Photius, *Question 107 to Amphilochius* 1:6, transl in Wilkinson, 1977, p.146). The blocking stone is referred to as rectangular in shape even in publications of the 17th and 18th centuries (Doubdan, 1666, drawing between pp. 62–3; Wells, 1708, p.125).
32. This would mean that it had approximately the same form and dimensions as the present-day Tomb of Jesus (cf. Eusebius, *Theophania* 3:61, where it is said that the Tomb of Christ was designed for one person only).
33. Clermont-Ganneau has suggested that the lower level *kokh* F in the 'Tomb of Joseph of Arimathea' must have been cut from an adjoining *kokhim* cave further to the south-east. This, however, is unlikely. The two rock-cut areas F and G are clearly bone-collecting repositories.
34. For a discussion of what was above ground, and the location of the Capitolium, see below.
35. A rare album of drawings and photographs illustrating the Russian Archimandrite Antonin Kapoustin's explorations from 1883 entitled *Excavations Near the Church of the Holy Sepulchre, Jerusalem*, published by the Russian Orthodox Palestine Society, exists in the archives of the Palestine Exploration Fund in London.
36. See also Wilkinson's remarks in a book review published in *PEQ* 116 (1984), p.151.
37. It seems reasonable to assume that a military establishment of this sort must have had some form of boundary separating the area of the camp from the civilian areas around it. Such a boundary line could have been a narrow enclosure wall of stones, a fence made of wood, or a low earth embankment. None of these would leave any significant archaeological traces.

38. This information was received from Dr. Claudine Dauphin, to whom we are very grateful. The two 7th-century texts have now been published, see Flusin, 1992. In the same publication, Mango (1992, pp.2–3) says that the Capitoline temple must have been on the site of the Jewish sanctuary but does not indicate where he thinks the equestrian statues were located.
39. Freeman-Grenville mistakenly understands the contents of a small oven (fragments of calcined bones, ash and some tesserae) from this excavation to have been found within the libation altar and therefore assumes that the latter was an altar of sacrifice. For the oven and its contents see Katsimbinis, 1977, p.206 and Díez, 1984, p.34. Díez believes the oven itself may have been used for sacrifices, but see our discussion below.
40. 'It testifies against you, this holy Golgotha, that rises to a height, and that is still visible, and shows still how the rocks were broken because of Christ.'
41. The numbering system here is our own. The following table gives the correspondences between our classifications and those of others.

	Corbo	Katsimbinis	Díez
wall 1	g	-	-
wall 2	f	-	-
wall 3	GH	b	c
wall 4	b	-	D
wall 5	M	a	B
wall 6	N	-	-
wall 7	L	-	-
wall 8	-	-	-
wall 9	-	c	A
wall 10	K	-	-
cave	3e	-	CIII
oven	a	-	-

Abbreviations

BA	*The Biblical Archaeologist*
BAIAS	*The Bulletin of the Anglo-Israel Archaeological Society*
BAR	*Biblical Archaeology Review*
BAR	British Archaeological Reports
BASOR	*Bulletin of the American Schools of Oriental Research*
CIG	*Corpus Inscriptionum Graecarum*
CIL	*Corpus Inscriptionum Latinarum*
CSEL	*Corpus Scriptorum Ecclesiasticorum Latinorum*, Vienna, 1866 seq.
CSL	Corpus Christianorum, *Series Latina, Turnhout, 1953 seq.*
DACL	F.Cabrol and H. Leclercq (eds.), *Dictionnaire d'Archéologie Chrétienne et de Liturgie*, 15 vols., Paris, 1907–53.
EI	*Eretz-Israel: Archaeological, Historical and Geographical Studies*
GCS	*Die griechischen christlichen Schriftsteller der ersten drei Jahrhunderte*, Leipzig/Berlin: J.C.Hindrichs'sche Buchhandlung, 1897 seq.
IEJ	*Israel Exploration Journal*
IJNAUE	*The International Journal of Nautical Archaeology and Underwater Exploration*
ILS	*Inscriptiones Latinae Selectae*, ed. H. Dessau, Berlin, 1892–1916
JPOS	*Journal of the Palestine Oriental Society*
JRAS	*Journal of the Royal Asiatic Society*
LA	*Studium Biblicum Franciscanum Liber Annuus*
PEFQSt	*Palestine Exploration Fund Quarterly Statement*
PEQ	*Palestine Exploration Quarterly*
PG	*Patrologia Graeca*, ed. J. P. Migne, Paris, 1857 seq.
PL	*Patrologia Latina*, ed. J. P. Migne, Paris, 1844 seq.
PO	*Patrologia Orientalis*, ed. R.Griffin and F. Nau, Paris, 1907 seq.
QDAP	*Quarterly of the Department of Antiquities in Palestine*
RAC	*Rivista di Archaeologia Cristiana*
RB	*Revue Biblique*
SEG	*Supplementum Epigraphicum Graecum*, Leiden, 1923 seq.
TLL	*Thesaurus Linguae Latinae*, Tübingen, 1909–1934.
ZDPV	*Zeitschrift des Deutschen Palästina-Vereins*
ZNTW	*Zeitschrift für die neutestamentliche Wissenschaft und die Kunde der Alten Kirche*

Bibliography

Ancient Sources (see chronology on p. xx)

Adomnan, *De Locis Sanctis* (*CSL* 175, ed. L. Bieler).
Armenian Lectionary (ed. A. Renoux, *Le Codex Arménien de Jérusalem 121*, *PO* 35–6, 1969–71).
Bordeaux Pilgrim, *Itinerarium Burdigalense* (*CSL* 175, ed. P. Geyer and O. Cuntz, 1965, pp. 1–26).
Breviarius de Hierosolyma (*CSL* 175/6, ed. R. Weber).
Cyril of Jerusalem, *Catecheses* (*PG* 33, ed. A.A. Toutée and P. Maran).
Daniel the Abbot, (ed. M. A. Venevitinov, *Zhitie i knozhenie Danila rus'kyya zemli igumena 1106–1108*, Palestinskiy pravoslavnyy sbornik, 3 (I, 3), 9 (III, 3), St. Petersburg, 1883–5.
Egeria, *Itinerarium* (*CSL* 175, ed. A.Franceschini and R.Weber, 1965, pp. 29–90).
Epiphanius the Monk, *Hagiopolita* (ed. H.Donner, 'Die Palästinabeschreibung des Epiphanius Monachus *Hagiopolita*', *ZDPV* 87, 1971, pp. 66–82).
Eusebius, *Historia Ecclesiastica* (*GCS* II.1.2, ed. E.Schwartz and T.Mommsen, 1903, 1908).
Eusebius, *Onomasticon* (*GCS* III.2, ed. E. Klostermann, 1904, repr. 1966).
Eusebius, *Vita Constantini* (*PG* 20: *GCS* VII, ed. I. A. Heikel, 1902).
Hugeburc, *Vita Willibaldi* (ed. O. Holder-Egger, *Monumenta Germaniae Historica* 15/1, Hanover, 1887).
Jacinthus the Presbyter, *Descriptio Terrae Sanctae: Fragment* (ed. Z. Garcia Villada, *Estudios Ecclesiasticos* 4, 1925, pp. 322–4).
Jerome, *Epistulae* (*CSEL* 54–6, ed. I.A.Hilberg, 1910–18).
Jerome, *Commentarium in Matthaiam* (*PL* 26; *CSL* 77, ed. D. Hurst and M. Adriaen).
Jerome, *Commentarium in Esaiam* (*CSL* 73, ed. M. Adriaen).
John of Würzburg, *Descriptio Terrae Sanctae* (ed. T.Tobler, *Descriptiones Terrae Sanctae ex saec. VIII, IX, XII et XV*, Leipzig, 1874, pp. 108–92).
Melito of Sardis, *Paschal Homily* (Hall, 1979).
Piacenza Pilgrim, *Itinerarium* (*CSL* 175, ed. P. Geyer).
Rufinus, *Historia Ecclesiastica* (*PL* 21, ed. D. Vallarsi; *GCS*, ed. T. Mommsen, 1908).
Saewulf, *Relatio de peregrinatione* (ed. M. d'Avezac, *Relation des voyages de Saewulf à Jerusalem et en Terre Sainte pendant les années 1102 et 1103*, Paris, 1839).
Socrates, *Historia Ecclesiastica* (*PG*, ed. H. Valesius and W. Reading).
Sophronius, *Anacreontica* (ed. M. Gigante, *Opuscula, Testi per esercitazioni accademiche* 10/12, Rome, 1957).
Sozomen, *Historia Ecclesiastica* (*GCS*, ed. J. Bidez and G.C. Hansen, 1960).
Theoderic, *Libellus de Locis Sanctis* (ed. T. Tobler, *Theoderici Libellus de Locis Sanctis editus circa A.D. 1172*, St. Gallen/Paris, 1865, pp.1–112).
Theodosius, *De Situ Terrae Sanctae* (*CSL* 175, ed. P. Geyer, 1965, pp. 113–25).

Modern Sources

Avi-Yonah, M., 1954. *The Madaba Mosaic Map*, Jerusalem: Israel Exploration Society.
Avigad, N., 1983. *Discovering Jerusalem*, Nashville: Nelson.
Avnimelech, M., 1966. 'Influence of Geological Conditions on the Development of Jerusalem', *BASOR* 181, pp.24–31.
Bagatti, B., 1969. *Excavations in Nazareth*, Jerusalem: Franciscan Printing Press.
Bahat, D., 1973. *Carta's Historical Atlas of Jerusalem*, Jerusalem: Carta.
Bahat, D., 1984–5. 'New Discoveries in Jerusalem', *BAIAS* 4, pp.50–53.
Bahat, D., 1986. 'Does the Holy Sepulchre Church Mark the Burial of Jesus?', *BAR* 12, pp.26–45.
Bahat, D., 1990. *The Illustrated Atlas of Jerusalem*, London and New York: Simon and Schuster.
Barag, D., 1967. 'Brick Stamp Impressions of the Legio X Fretensis', *Bonner Jahrbücher* 167, pp.244–268.
Barag, D., 1970. 'Glass Pilgrim Vessels from Jerusalem', *Journal of Glass Studies* 12
Barkay, G., and Kloner, A., 1976. 'Burial Caves North of Damascus Gate, Jerusalem', *IEJ* (Notes and News) 26, pp.55–7.
Barkay, G., 1985–6. 'Jerusalem of Old Testament Times – New Discoveries and New Approaches', *BAIAS* 5, pp.32–43.
Barkay, G., 1986A. *Ketef Hinnom – Treasure Facing Jerusalem's Walls*, Israel Museum Catalogue No. 274, Jerusalem.
Barkay, G., 1986B. 'Zedekiah's Cave: The Archaeological Perspective', *Ariel* 43, pp.102–105 (Hebrew).
Basch, L., 1987. *Le Musée imaginaire de la marine antique*, Athens: Institut Hellénique Pour La Préservation de la Tradition Nautique.
Baumstark, A., 1915. *Die modestianischen und die konstantinischen Bauten am Heiligen Grabe zu Jerusalem. Studien zur Geschichte und Kultur des Altertums*, 7/3–4, Paderborn: F. Schöningh.
Ben-Dov, M., 1983. *Jerusalem's Fortifications*, Tel Aviv: Zmora, Bitan (Hebrew).
Ben-Dov, M., 1985. *In the Shadow of the Temple: the Discovery of Ancient Jerusalem*, Jerusalem: Keter.
Ben-Dov, M., 1991. *Carta's Atlas of Jerusalem Down the Centuries*, Jerusalem: Carta (Hebrew).

Ben-Dov, M., n.d. *The Cave of Zedekiah: A Rare Archaeological Site in Jerusalem*, Jerusalem: The Company for the Development of East Jerusalem (Hebrew).
Bennett, C. M., 1974. 'The Jerusalem Ship', *IJNAUE* (Notes and News) 3.2, pp.307–309.
Benoit, P., 1961. *L'Épave du Grand Conglové à Marseille* (XIV[e] supplément à 'Gallia'), Paris.
Biddle, M., 1990. 'The Tomb of Christ', *Illustrated London News* (Christmas Issue), pp.83–86.
Biddle, M., 1991. Jerusalem: the Tomb of Christ', *Current Archaeology* 11, No.123, pp. 107–112.
Biddle, M., et al., n.d. 'The Gresham Jerusalem Project: Recording the Tomb of Jesus (the Edicule) in the Church of the Holy Sepulchre. Preliminary Report on Phase I'. Unpublished manuscript.
Bliss, F. J. and Dickie, A. C., 1898. *Excavations at Jerusalem, 1894–1897*, London: PEF.
Bray, W. and Trump, D., 1970. *The Penguin Dictionary of Archaeology*, Harmondsworth: Penguin.
Broshi, M., 1976A. 'New Evidence for the Expansion of Jerusalem During the Iron Age', *Proceedings of the Fourth Archaeological Conference in Israel* (Jerusalem, 17–18 March, 1976), p.28 (Hebrew).
Broshi, M., 1976B. 'Investigations in the Holy Sepulchre', *Hadashot Archeologiyot* 59–60, pp.30–31 (Hebrew).
Broshi, M., 1977A. 'The Jerusalem Ship Reconsidered', *IJNAUE* (Notes and News) 6.4, pp.349–352.
Broshi, M., 1977B. 'Recent Excavations in the Church of the Holy Sepulchre', *Qadmoniot* 10, pp.30–32 (Hebrew).
Broshi, M., 1977C. 'Evidence of Earliest Christian Pilgrimage to the Holy Land Comes to Light in the Holy Sepulchre Church', *BAR* 3, pp.42–44.
Broshi, M., 1978. 'Recent Excavations in the Holy Sepulchre Compound', *Ariel* 45–46, pp.28–32.
Broshi, M., Barkay, G. and Gibson, S., 1983. 'Two Iron Age Tombs below the Western City Wall, Jerusalem and the Talmudic Law of Purity', *Cathedra* 28, pp.17–28.
Broshi, M. and Barkay, G., 1985. 'Excavations in the Chapel of St. Vartan in the Holy Sepulchre', *IEJ* 35, pp.108–128. Hebrew version published in *Eretz Israel* 18 (Avigad volume), pp.8–20.
Broshi, M. and Gibson, S., forthcoming. 'Along Jerusalem's Western and Southern City Walls', in H.Geva (ed.), *Ancient Jerusalem Revealed*, Jerusalem: IES.
Canaan, T., 1927. *Mohammedan Saints and Sanctuaries in Palestine* (reprint): Jerusalem: Ariel.
Canaan, T., 1932. 'The Palestinian Arab House: Its Architecture and Folklore', *JPOS* 12, pp.223–247.
Casson, L., 1971. *Ships and Seamanship in the Ancient World*, New Jersey: Princeton University Press.
Casson, L., 1975. 'Ships on Coins', in Ben-Eli, A. L. (ed.): *Ships and Parts of Ships on Ancient Coins*, Vol. 1, Haifa: The National Maritime Museum.
Chapman, R. L., 1986. 'Excavation Techniques and Recording Systems: a Theoretical Study', *PEQ* 118, pp.5–26.
Clermont-Ganneau, C., 1877. *L'Authenticité du S.Sépulcre et le tombeau de Joŝeph d'Arimathie*, Paris: Leroux.
Clermont-Ganneau, C., 1884. 'The So-called Tomb of Joseph of Arimathea' in C. Warren and C. R. Conder, *The Survey of Western Palestine: Jerusalem*, London: PEF, pp.319–333.
Clermont-Ganneau, C., 1899. *Archaeological Researches in Palestine During the Years 1873–4*, Vol. 1, London: PEF.
Cohn, E. W., 1987. *New Ideas about Jerusalem's Topography*, Jerusalem: Franciscan Printing Press.
Cole, D. P., Bahat, D. and Shanks, H., 1983. *Jerusalem Archaeology Slide Set*, Washington: Biblical Archaeology Society, Slide no. 109.
Contenau, G., 1920. 'Mission archéologique à Sidon (1914)', *Syria* 1, pp.16–55, Pl. VI.
Corbo, V. C., 1965. 'Scavo della cappella dell'Invenzione della S. Croce e Nuovi reparti archeologici nella Basilica del S. Sepolcro a Gerusalemme', *LA* 15, pp.318–366.
Corbo, V. C., 1969. *La Basilica del S. Sepolcro*, Jerusalem: Franciscan Printing Press.
Corbo, V. C., 1981–2. *Il Santo Sepolcro di Gerusalemme. Aspetti archaeologici dalle origini al periode crociato*, 3 vols, Jerusalem: Franciscan Printing Press.
Corbo, V. C., 1984. 'A Proposito di Presunti Scavi Stratigrafici al S. Sepolcro', *LA* 34, pp.409–416.
Corbo, V. C., 1988. 'Il Santo Sepolcro di Gerusalemme: *Nova* et *Vetera*', *LA* 38, pp.409–416.
Coüasnon, C., 1974. *The Church of the Holy Sepulchre in Jerusalem* (The Schweich Lectures, 1972), London: British Academy.
Coüasnon, C., 1975. 'Le Tombeau du Christ à Jérusalem', *Les Dossiers de l'Archéologie* 10, pp.114–121.
Crowfoot, J. W., 1941. *Early Churches in Palestine* (The Schweich Lectures, 1937), London: British Academy.
Dalman, G., 1935. *Sacred Sites and Ways: Studies in the topography of the Gospels* (transl. by P. P. Levertoff of *Orte und Wege Jesu*, 3rd ed.), London: SPCK.
Damati, E., 1977. 'Ḥilkiya's Palace' in M. Broshi (ed.), *Between Hermon and Sinai – Memorial to Amnon*, p.93–113, Jerusalem (Hebrew).
Damati, E., 1982. 'The Palace of Ḥilkiya', *Qadmoniot* 15, pp.117–121 (Hebrew)
Dar, S., 1986. *Landscape and Pattern: An Archaeological Survey of Samaria, 800 BCE-636 CE*, Oxford: BAR.
Dar, S. and Minsker, Y., 1987. 'A Roman Temple at Har Senaim in the Hermon', *Eretz Israel* 19 (Avi-Yonah volume), pp.30–45 (Hebrew).
Dauphin, C. M. and Schonfield, J. J., 1983. 'Settlements of the Roman and Byzantine Periods on the Golan Heights', *IEJ* 33, pp.189–206.
Davies, J. G., 1957. 'Eusebius' Description of the Martyrium at Jerusalem,' *American Journal of Archaeology* 61, pp.171–173.
Davis, D. and Kloner, A., 1978. 'A Burial Cave of the Late Israelite Period on the Slopes of Mount Zion', *Qadmoniot* 41, pp.16–19 (Hebrew).

Díez Fernandez, F., 1984. 'La Recherche Archéologique (au Saint-Sépulcre)', *Le Monde de la Bible* 33, pp.28–36.
Dorrell, P.G., 1989. *Photography in Archaeology and Conservation*, Cambridge: Cambridge University Press.
Doubdan, M., 1666. *Le Voyage de la Terre Sainte*, Paris: F.Clousier.
Drake, H.A., 1985. 'Eusebius on the True Cross', *Journal of Ecclesiastical History* 36, pp.1–22.
Duckworth, H. T. F., 1922. *The Church of the Holy Sepulchre*, London: Hodder & Stoughton.
Feliks, J., 1963. *Agriculture in the Period of the Mishna and Talmud*, Jerusalem: Magness (Hebrew).
Fitzgerald, M., 1990. 'The Ship of Saint Paul: Comparative Archaeology', *BA* 53, pp.31–39.
Flusin, B., 1992. 'L'esplanade du Temple a l'arrivée des Arabes, d'après deux récits Byzantins', in J.Raby and J.Johns (eds.), *Bayt al-Maqdis: 'Abd al-Malik's Jerusalem*, Oxford: Oxford University Press.
Freeman-Grenville, G. S. P., 1987. 'The Basilica of the Holy Sepulchre, Jerusalem: History and Future', *JRAS* 2, pp.187–207.
Le Gall, J., 1955. 'Graffites navals du Palatin et de Pompéi', *Mémoires de la Société Nationale des Antiquaires de France*, Ser. 9, 3, pp.47–8.
Geva, H., 1984. 'The Camp of the Tenth Legion in Jerusalem: An Archaeological Reconsideration', *IEJ* 34, pp.239–254.
Gibson, S., 1987. 'The 1961–67 Excavations in the Armenian Garden, Jerusalem', *PEQ* 119, pp.81–96.
Gibson, S., 1992. 'The Tell Ṣandaḥannah Ship Graffito Reconsidered', *PEQ* 124, January-June, pp. 26–30.
Gibson, S., forthcoming. 'The Tell ej-Judeideh Excavations: A Reappraisal Based on Archival Records in the Palestine Exploration Fund', *Tel Aviv*.
Gibson, S. and Edelstein, G., 1985. 'Investigating Jerusalem's Rural Landscape', *Levant* 17, pp.139–155.
Grabar, A., 1958. *Les Ampoules de Terre Sainte (Monza – Bobbio)*, Paris.
de Groot, J., 1913. *Palestijnsche Masseben (Opgerichte Steenen)*, Groningen: Bij J.B.Walters.
Guarducci, M., 1958. *I Graffiti sotto la Confessione di San Pietro in Vaticano*, 3 vols, Vatican City.
Hahn, L., 1906. *Rom und Romanismus im Griechischen Osten, mit Besonderer Berücksichtigung der Sprache, bis auf die Zeit Hadrians*.
Hall, S. G., 1979. *Melito of Sardis: On Pascha*, Oxford.
Harvey, W., 1935. *Church of the Holy Sepulchre, Jerusalem: Structural Survey, Final Report*, London: Humphrey Milford.
Helms, S. W., 1971. I: 'Area Behind St. Gregor's Chapel in the Holy Sepulchre', II: 'The Spine Wall Complex', III: 'Graffito'. Unpublished manuscript.
Helms, S. W., 1980. 'The Jerusalem Ship, ISIS MYRIONYMOS and the True Cross', *IJNAUE* 9.2, pp.105–120.
Humphreys, S. C., 1974. 'The Jerusalem Ship', *IJNAUE* (Notes and News) 3.2, pp.309–310.
Hunt, E. D., 1984. *Holy Land Pilgrimage in the Later Roman Empire AD 312–460*, Oxford: Clarendon.
Isaac, B., 1990. *The Limits of Empire: The Roman Army in the East*, Oxford: Clarendon.
Jeffery, G., 1895. *The Buildings of the Holy Sepulchre, Jerusalem: Measured Plans and Sketches*, Florence: privately published.
Jeffery, G., 1910. 'The Church of the Holy Sepulchre. Jerusalem', *Journal of the Royal Institute of British Architects*, 17 (3rd series), pp. 709–798.
Jeffrey, G., 1919. *A Brief Description of the Holy Sepulchre, Jerusalem, and Other Christian Churches in the Holy City. With Some Account of the Medieval Copies of the Holy Sepulchre Surviving in Europe*, Cambridge: Cambridge University Press.
Johns, C. N., 1950. 'The Citadel, Jerusalem: A Survey of Work Since 1934', *QDAP* 14, pp. 121–190.
Kadman, L., 1956. *The Coins of Aelia Capitolina*, Jerusalem: Universitas.
Katsimbinis, C., 1977. 'The Uncovering of the Eastern Side of the Hill of Calvary and its Base: New Layout of the Area of the Canon's Refectory By the Greek Orthodox Patriarchate', *LA* 27, pp.197–208.
Kendall, W., 1962. 'Architectural Report', in D.N.Colt (ed.), *Excavations at Nessana ('Auja Hafir, Palestine)*, London: BSAJ.
Kenyon, K. M., 1974. *Digging up Jerusalem*, London: Benn.
Kloner, A., 1980. *The Necropolis of Jerusalem in the Second Temple Period*. Unpublished Ph.D. thesis for the Hebrew University, Jerusalem (Hebrew).
Kloner, A., 1985A. 'A Burial Monument of the Second Temple Period west of the Old City of Jerusalem', *EI* 18 (Avigad volume), pp.58–64 (Hebrew).
Kloner, A., 1985B. 'The Tomb in the Rotunda of the Church of the Holy Sepulchre', *Ariel* 42–42a, pp.118–121 (Hebrew).
Krencker, D. and Zschietzchmann, W., 1938. *Römische Tempel in Syrien*, Berlin and Lepzig: Walter de Gruyter.
Leigh, D., 1978. *First Aid for Finds: A Practical Guide for Archaeologists* (Rescue Publication No. 1), The British Archaeological Trust: Univ. of Southampton.
Levine, L. I., 1975. *Roman Caesarea: an Archaeological-Topographical Study* (Qedem 2), Jerusalem.
Lux, V., 1972. 'Vorläufiger Bericht über die Ausgrabung unter der Erlöserkirche im Muristan in der Altstadt von Jerusalem in den Jahren 1970 und 1971', *ZDPV* 88, pp.185–201.
Macalister, R.A.S., 1901. 'Notes on M.Clermont-Ganneau's 'Archaeological Researches in Palestine', Vol.I.', *PEFQSt*, pp.19–21.
Macalister, R. A. S. and Duncan, J. G., 1926. *Excavations on the Hill of Ophel, Jerusalem, 1923–1925* (PEF Annual IV), London: PEF.
Magen, M., 1984. 'Excavations at the Damascus Gate, 1979–1984', *Qadmoniot* 17, pp. 117–120 (Hebrew).
Magness, J., 1992. 'The Walls of Jerusalem in the Early Islamic Period', *BA* 54, pp. 208–217.

Maiuri, A., 1958. *Navalia Pompeiana: Rendiconti della Academia di Archeologia, Lettere e Belle Arti, Napoli*, Nuova Serie Vol. 33.
Mango, C., 1992. 'The Temple Mount A.D. 614–638', in J.Raby and J.Johns (eds.), *Bayt al-Maqdis: 'Abd al-Malik's Jerusalem*, Oxford: Oxford University Press.
Marangoni, L., 1937. *La Chiesa del Santo Sepolcro in Gerusalemme*, Jerusalem: Franciscan Printing Press.
Margalit, S., 1989. 'Aelia Capitolina', *Judaica* 1, pp.45–56.
Mazar, A., 1976. 'Iron Age Burial Caves North of the Damascus Gate, Jerusalem', *IEJ* 26, pp.1–8.
Meimaris, Y.E., 1986. *Sacred Names, Saints, Martyrs and Church Officials in the Greek Inscriptions and Papyri Pertaining to the Christian Church of Palestine*, Athens: Research Centre for Greek and Roman Antiquity, the National Hellenic Research Foundation.
Merrill, S., 1908. *Ancient Jerusalem*, New York: Revell Company.
Millar, F., 1990. 'The Roman *Coloniae* of the Near East: A Study of Cultural Relations', pp. 28–30, in H.Solin and M.Kajava (eds.) *Roman Eastern Policy and Other Studies in Roman History*, Helsinki.
Minsker, Y., 1977. 'Remarks on the Plan of Aelia Capitolina', in M. Broshi (ed.): *Between Hermon and Sinai – Memorial to Amnon*, Jerusalem, pp.125–135 (Hebrew).
Murphy-O'Connor, J., 1986. *The Holy Land: An Archaeological Guide From Earliest Times to 1700*, Oxford: Oxford University Press.
Nebe, G. -W., 1987. 'Die lateinisch-christliche Inschrift in der St. Vartan Kapelle der Grabeskirche in Jerusalem, ein neutestamentliches Zitat?', *ZNTW* 78, 1–2, pp.153–161.
Negev, A., 1964. 'Masons' Marks from the Nabataean Temple at Avdat', *EI* 7 (Mayer Volume), pp.29–32, Pls. 3–5 (Hebrew).
Neri, D., 1971. *Il S. Sepolcro: riprodotto in Occidente*, Jerusalem: Franciscan Printing Press.
Nylander, C., 1967. 'A Note on the Stonecutting and Masonry of Tel Arad', *IEJ* 17, pp.56–59.
Parrot, A., 1955. *Golgotha et Saint-Sépulchre*, Paris Delachaux et Niestlé (English version: 1957. *Golgotha and the Church of the Holy Sepulchre*, London: SCM).
Pedersen, K., 1984. 'Dir a-Sultan', pp. 155–63, in Y.Schiller (ed.), *Zev Vilnay's Jubilee Volume*, Jerusalem: Ariel (Hebrew).
Petrozzi, M. T., 1972. *Dal Calvario al Santo Sepolcro*, Jerusalem: Franciscan Printing Press.
Pliner, M., 1966. 'The Sailing Ship of Bet-Shearim', *Sefunim* (Bulletin of the Maritime Museum, Haifa) 1, pp.25–27, Pl. V.
Pocknee, C. E., 1971. 'The Archaeology of Baptism', *Theology* 74/613, pp.309–311.
Pomey, P., 1993. 'Le Navire de Cucuron: un Graffito Décoratif', *Archaeonautica* 11, pp.149–163.
Pringle, D. and Leach, P., 1983. 'Two Medieval Villages North of Jerusalem: Archaeological Investigations in Al-Jib and Ar-Ram', *Levant* 5, pp.141–177.
Raban, A., 1988. 'The Boat from Migdal Nunia and the Anchorages of the Sea of Galilee from the Time of Jesus', *IJNAUE* 17.4, pp.311–329.
Raban, A. and Hohlfelder, R. L., 1981. 'The Ancient Harbors of Caesarea-Maritima', *Archaeology* 34, pp.56–60.
Ragette, F., 1980. *Baalbek*, London: Chatto and Windus.
Rahmani, L. Y., 1967. 'Jason's Tomb', *IEJ* 17, pp.61–100, Fig. 5a.
Reich, R., 1987. 'Four Notes on Jerusalem', *IEJ* 37, pp.158–167.
Reich, R., Shukrun, E., Bilig, Y., 1991. 'Jerusalem – Mamillah Area', *Ḥadashot Arkheologiyot* 96, pp.20–21 (Hebrew).
Richmond, E.T., 1934. *The Sites of the Crucifixion and the Resurrection*. Privately published pamphlet.
Robert, L., 1937. *Études Anatoliennes: Recherches sur les Inscriptions Grecques de L'Asie Mineure*, Paris.
Rosen, B., 1986. 'An Incorrect Representation of a Sailing Boat in the Madaba Mosaic', *IEJ* 36, pp.97–98.
Rostovtzeff, M. I., 1957. *The Social and Economic History of the Roman Empire*, 2nd ed., Oxford: Clarendon.
de Sandoli, S., 1974. *Il Calvario e il S. Sepolcro, Cenni storici*, Jerusalem: Franciscan Printing Press.
Santamaria, C., 1984. 'Le pied de mât de l'épave 'E' du Cap Dramont (Sainte-Raphaël-Var), *Archaeonautica* 4, pp.107–114.
Savignac, M. -R. and Horsfield, G., 1935. 'Le Temple de Ramm', *RB* 44, p.245–278.
Schein, B. E., 1981. 'The Second Wall of Jerusalem', *BA* 44, pp.21–26.
Schick, C., 1885. 'Neu aufgedeckte Felsengräber bei der Grabeskirche in Jerusalem', *ZDPV* 8, pp.171–173, Pl. VII.
Schick, C., 1887. 'Notes from Jerusalem', *PEFQSt*, pp.154–155.
Schick, C., 1889A. 'Notes on the Plans and the Cave East of the Church of the Holy Sepulchre', *PEFQSt*, pp.67–68.
Schick, C., 1889B. 'Large Cistern under the New Greek Building South-East of the Church of the Holy Sepulchre', *PEFQSt*, pp.110–112, Section A–B.
Schick, C., 1898. 'The Site of the Church of the Holy Sepulchre at Jerusalem', *PEFQSt*, pp.145–154.
Schick, C., 1902. 'Notes to Accompany the Plan of Jeremiah's Grotto', *PEFQSt*, pp.38–42.
Shadmon, A., 1972. *Stone in Israel*, Jerusalem: Ministry of Development.
Shiloh, Y. and Horowitz, A., 1975. 'Ashlar Quarries of the Iron Age in the Hill Country of Israel', *BASOR* 217, pp.37–48.
Sperber, D., 1986. *Nautica Talmudica*, Ramat Gan: Bar-Ilan University Press.
Spyridon, S.N., 1938. 'Annals of Palestine, 1821–1841', *JPOS* 18, pp. 63–132.
Steffy, J.R. and Wachsmann, S., 1990. 'The Migdal Boat Mosaic', pp.115–118, in S.Wachsmann (ed.), *The Excavations of an Ancient Boat in the Sea of Galilee (Lake Kinneret)*, *'Atiqot* (English Series) 19.

Stoian, I., 1962. *Tomitana: Contributii Epigrafice la Istoria Cetatii Tomis* (Biblioteca de Arheologie VI), Romine: Institutul de Arheologie al Academiei.
Stuhlfauth, G., 1942. 'Dass Schiff als Symbol der Altchristlichen Kunst', *RAC* 19, p.111–141.
Taylor, J.E., 1989. 'A Critical Investigation of Archaeological Material Assigned to Palestinian Jewish-Christians of the Roman and Byzantine Periods'. Unpublished Ph.D. thesis submitted to the University of Edinburgh, August 1989.
Taylor, J.E., 1993. *Christians and the Holy Places*, Oxford: Clarendon.
Testa, E., 1976. 'Il Golgota, Porta della Quiete', in *Studia Hierosolymitana in Onore di P. B. Bagatti, I, Studi Archaeologici*, Jerusalem: Franciscan Printing Press, pp.197–244.
Thurneyssen, J., 1978. 'La Navigation de Saint Paul', *Dossiers de l'Archéologie* 29, pp.95–99.
Tleel, J. N., 1972–73. 'Document of Agreement between the Greek Orthodox Patriarchate of the Custody of the Holy Land and the Armenian Patriarchate, 17th June, 1964', *Triphyllo* 110–113, pp.33–40.
Tsafrir, Y., 1984. *Eretz Israel from the Destruction of the Second Temple to the Muslim Conquest*, Vol. II, Jerusalem: Yad Ben-Zvi (Hebrew).
Tushingham, A. D., 1985. *Excavations in Jerusalem 1961–1967*, Vol. I, Toronto: Royal Ontario Museum.
Tushingham, A. D., 1987. 'The Western Hill of Jerusalem: A Critique of the 'Maximalist' Position', *Levant* 19, pp.137–143.
Tushingham, A.D., 1988. 'The 1961–67 Excavations in the Armenian Garden, Jerusalem: a Response', *PEQ* 120, pp.142–45.
Ussishkin, D., 1970. 'The Necropolis from the Time of the Kingdom of Judah at Silwan, Jerusalem', *BA* 33, pp.34–38.
Viereck, H. D. L., 1975. *Die Römische Flotte*, Herford: Koehlers.
Vincent, L. -H. and Abel, F. M., 1914. *Jérusalem Nouvelle* (*Jérusalem: Recherches de topographie, d'archéologie et d'histoire* II), Paris: Gabalda.
De Vogüé, M., 1860. *Les Églises de Terre Sainte. Fragments d'un voyage en Orient*, Paris: Lib. de V. Didron.
Vriezen, K. J. H., 1977. 'Zweiter Vorläufiger Bericht über die Ausgrabung unter der Erlöserkirche im Muristan in der Altstadt von Jerusalem (1972–74)', *ZDPV* 93, pp.76–81.
Wachsmann, S., 1986–7. 'The Excavation of the Kinneret Boat', *BAIAS* 6, pp.50–52.
Wachsmann, S., 1988. 'The Galilee Boat: 2000-Year-Old Hull Recovered Intact', *BAR* 14, pp.18–33.
Wachsmann, S., Raveh, K., Cohen, O. and Steffy, J.R., 1988. *An Ancient Boat Discovered in the Sea of Galilee*, Jerusalem: Israel Department of Antiquities.
Walker, P.W.L., 1990. *Holy City, Holy Places?*, Oxford: Clarendon.
Ward-Perkins, J. and Claridge, A., 1976. *Pompeii, AD 79* (Royal Academy of Arts Catalogue), London: Westminster Press.
Wells, E., 1708. *An Historical Geography of the New Testament In Two Parts. Part I. The Journeyings of Our Lord and Saviour Jesus Christ*, London and Oxford: Botham and Stephens.
Wightman, G.J., 1990–91. 'Temple Fortresses in Jerusalem. Part II: The Hasmonaean Baris and Herodian Antonia', *BAIAS* 10, pp.7–35.
Wilkinson, J., 1972. 'The Tomb of Christ: An Outline of its Structural History', *Levant* 4, pp. 83–97.
Wilkinson, J., 1975. 'The Streets of Jerusalem', *Levant* 7, pp.118–136.
Wilkinson, J., 1977. *Jerusalem Pilgrims Before the Crusades*, Warminster: Aris and Phillips.
Wilkinson, J., 1978. *Jerusalem as Jesus Knew It: Archaeology as Evidence*, London: Thames and Hudson.
Wilkinson, J., 1981. *Egeria's Travels to the Holy Land*, rev. ed., Warminster: Aris and Phillips.
Wilkinson, J. with Hill, J. and Ryan, W. F., 1988. *Jerusalem Pilgrimage 1099–1185*, London: Hakluyt Society.
Williams, G., 1849. *The Holy City: Historical, Topographical, and Antiquarian Notices of Jerusalem*, 2 vols., Cambridge and London.
Wilson, C. W., 1866. *Ordnance Survey of Jerusalem*, Southampton: (Her Majesty's Treasury).
Wilson, C. W., 1906. *Golgotha and the Holy Sepulchre*, London: PEF.
Wistrand, E. K. H., 1952. *Konstantins Kirche am Heiligen Grab in Jerusalem nach den ältesten literarischen Zeugnissen* (*Acta Universitatis Gotoburgensis. Göteborgs hogskolas årsskrift* 58/1), Göteborg: Wettergrin & Kerber.
Yadin, Y., 1965. *Masada – First Season of Excavations, 1963-1964*, *Yediot* 29 (Hebrew).
Yadin, Y., 1971. *Masada – Herod's Fortress and the Zealots' Last Stand*, London: Sphere Books.
Zori, N., 1966. 'The House of Kyrios Leontis at Beth Shean', *IEJ* 16, pp.123–134.

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