EXCAVATIONS AT CAESAREA MARITIMA 1975, 1976, 1979 — FINAL REPORT
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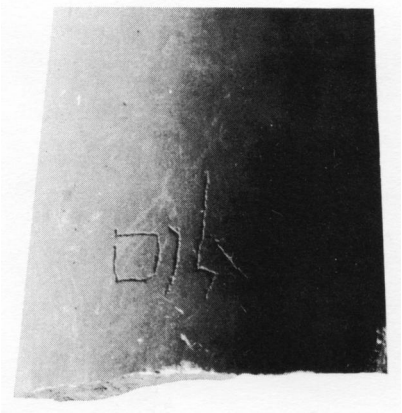
LEE I. LEVINE, EHUD NETZER

EXCAVATIONS AT CAESAREA MARITIMA

1975, 1976, 1979 — FINAL REPORT



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ABBREVIATIONS

AA	Archäologischer Anzeiger
AASOR	Annual of the American Schools of Oriental Research
ADAJ	Annual of the Department of Antiquities of Jordan
AJA	American Journal of Archeology
ANRW	Aufstieg und Niedergang der römischen Welt
B	Babylonian Talmud
BA	Biblical Archaeologist
BAR	The Biblical Archaeology Review
BASOR	Bulletin of the American Schools of Oriental Research
BBSAJ	Bulletin of the British School of Archaeology in Jerusalem
BIES	Bulletin of the Israel Exploration Society (Hebrew)
BJPES	Bulletin of the Jewish Palestine Exploration Society (Hebrew)
BMC	British Museum Catalogue
CCSL	Corpus Christianorum Series Latina
EAEHL	Encyclopedia of Archaeological Excavations in the Holy Land
IEJ	Israel Exploration Journal
J	Palestinian (Jerusalem) Talmud
JESHO	Journal of the Economic and Social History of the Orient
JNES	Journal of Near Eastern Studies
JPOS	Journal of the Palestine Oriental Society
JQR	Jewish Quarterly Review
LCL	Loeb Classical Library
M	Mishna
MDAI-Kairo	Mitteilungen des Deutschen Archäologischen Instituts Abteilung Kairo
PEFA	Palestine Exploration Fund Annual
PEFQSt	Palestine Exploration Fund, Quarterly Statement
PEQ	Palestine Exploration Quarterly
PPTS	Palestine Pilgrims Text Society
QDAP	Quarterly of the Department of Antiquities of Palestine
RB	Revue Biblique
SBL	Society of Biblical Literature
T	Tosefta
ZDMG	Zeitschrift der deutschen Morgenländischen Gesellschaft
ZDPV	Zeitschrift des deutschen Palästina-Vereins

INTRODUCTION

During the last quarter of a century Caesarea Maritima has been the focus of almost continuous archaeological activity. Israeli, Italian, and American teams have conducted on-and off-shore excavations at various points in the city. The excavations carried out between 1975 and 1979 under the auspices of the Institute of Archaeology of the Hebrew University of Jerusalem concentrated primarily on several locations in an area within the Crusader city. A site adjacent to the shoreline, midway between the north and south walls of Crusader Caesarea, was selected as our main excavation area. Medieval Caesarea was built on what had been the center of the Roman-Byzantine city. The harbor, at least one major temple (later a church), and other important buildings from the Herodian period and thereafter had once been located in the immediate vicinity.

We commenced fieldwork in May 1975 with a number of trial probes in the northern part of the Crusader city to determine the most promising site for future work. This season was directed by D. Bahat of the Department of Antiquities and L. Levine of the Hebrew University with the assistance of R. Sivan and A. Bardugo. Following the delineation of an area close to the sea (Plan 1), a month-long excavation was carried out in October 1975, as well as an architectural survey of the Crusader city wall and several probes to try to determine its date. The work during this and the following season was directed by L. Levine and E. Netzer, both of the Institute of Archaeology. Area supervisors in October 1975 were A. Bardugo, E. Braun, E. Lass, M. Magen, and D. Stacey.

In April 1976 work focused on the main area previously excavated, as well as on the promontory west of the theater and south of the Crusader city (Ill. 2). Z. Ma'oz and D. Stacey served as area supervisors.

The final excavations in 1979 were carried out at two additional sites, one whose aim was to enlarge the main excavation area and the other at a point close by, to the east, also within the Crusader city. This season was directed by E. Netzer; area supervisors were D. Adan-Bayewitz and N. Amit. Other areas to the south of the main one were also excavated in 1979, and will be published separately.

E. Netzer served as architect of the expedition. In 1975-1976 G. Solar participated as co-architect and was responsible for surveying and preparation of the drawings. In 1979 surveying was carried out by E. Netzer, who also prepared the final drawings for this volume. J. Dzodin was the photographer in October 1975 and in 1979. Other photographs were taken by Z. Radovan and Z. Ma'oz.

The study of the pottery from these excavations was at first under the supervision of R. Sivan. Assisting her were N. Amit, A. Bardugo, and S. Harel. At a later stage this work was taken over by a second group, whose members wrote the various chapters in this volume: D. Adan-Bayewitz, M. Adato, R. Bar-Nathan, and N. Brosh. D. Netzer and Y. Tamir assisted in the pottery restoration. S. Halbreich, E. Huber, and M. Sarig were responsible for the drawings.

Our present publication is a report of these four seasons. The grid on which measurements were taken was based on the eastern Crusader wall, which stands on an almost straight line (although not on a precise north-south axis; Plan 2). Elevations were taken from sea level. The trenches in our main area were each 10 x 10 m. and subdivided into four sections by 2 m. balks. The finds themselves derive mainly from the 750 year span which includes the Byzantine and Crusader periods (*c.* 500-1250 C.E.). Remains from the Herodian to the early Byzantine eras were far more meager, consisting largely of pottery fills and remnants of walls.

The chapters in this volume are not arranged by area or season. Rather, each aims to summarize the relevant work in a specific field. A concluding chapter summarizes and integrates the various finds in an attempt to relate them to what is known about the history of the city in general.

Our volume makes no claim to be a complete study of these excavations. Had time and budget permitted, we would have expanded the chapter on pottery to include other periods and we would have undertaken a more extensive analysis of what has been presented. A chapter on ancient glass would have been desirable, as well as a detailed architectural study of the Crusader wall. Finally, we were unable to continue

our work on the southern promontory in order to determine the exact plan and date of this "palace" complex, which we suspect may have been the site of Herod's Caesarea palace; thus, no firm conclusion is at present warranted. Had we waited until all of our goals were achieved, this monograph might never have been published. Therefore, whatever its limitations, it is hoped that the material presented here will constitute a modest contribution to the ever-growing corpus of information about the largest metropolis and capital city of Palestine in late antiquity.

Our thanks are due to the National Parks Authority and the Caesarea Development Corporation for their help and sponsorship of these excavations. We are likewise grateful to J. Aviram, former Director of the Institute of Archaeology and Director of the Israel Exploration Society, as well as M. Bar-On, the current director of the Institute of Archaeology, for their encouragement and support in seeing this project through to completion. Our thanks also to Daniella Saltzman, Claire Pfann, and Hani Davis, who helped in editing the manuscript and seeing it through publication.

L. Levine, E. Netzer
The Hebrew University
Jerusalem

January, 1986

CHAPTER ONE

ARCHAEOLOGICAL EXPLORATION OF CAESAREA: PAST AND PRESENT

L. I. Levine

Only within the last decades has Caesarea begun to attract the serious attention of archaeologists. Since the mid-1950s, five different excavation teams have worked in various parts of the city. The cumulative results of this activity are most impressive and will be summarized below. Before this period of intensive work, most information regarding ancient Caesarea derived from chance finds or from descriptions of surface remains by the many visitors and travelers who frequented the city during the 18th and 19th centuries and recorded their observations. These descriptions have more than a passing interest. Owing to the large-scale despoliation that has taken place during the last few centuries, when quantities of architectural pieces were taken to Akko, Jaffa, and as far as Alexandria in order to grace private homes and mosques, much has been irretrievably lost. The Bosniak settlement in Caesarea, in existence from 1884 to 1948, also altered many features of the Crusader city. Finally, the search for remains of ancient Caesarea has been enormously facilitated by the many references to and descriptions of the city and its buildings found in ancient sources.

ANCIENT AND MEDIEVAL SOURCES

The most important literary sources for the physical appearance of the city are, of course, the writings of

Ill. 1. The main excavation area on the background of Caesarea's harbor.

Josephus Flavius. In both *War* and *Antiquities*[1] he describes in great detail the building of Caesarea by Herod, noting in particular the port, which he considered to be the most magnificent achievement of the king's building program in the city. The stone blocks used for the harbor installations were enormous, 50 ft. (14 m.) long, 18 ft. (5.7 m.) wide[2] and 9 ft. (2.9 m.) high. The two moles encompassed an area of about 40 acres (160 dunams), the northern one projecting westward from the shoreline for 250 m. The southern one, which then turned northward to enclose the harbor on the west, totalled 600 m.[3] The harbor was entered from the northwest; statues and columns graced the entranceway. Towers dotted these moles, the largest of which was called Drusus, after Augustus' son.[4] The moles themselves served as more than mere breakwaters. They also contained a promenade, vaults for storage, and lodgings for sailors. A magnificent temple to Roma and Augustus overlooked this port area.

Josephus also notes the construction of a theater, an amphitheater, agoras, and a magnificent palace. Herod's institution of quinquennial games in honor of Caesar,[5] as in Jerusalem,[6] suggests the existence of some sort of race-course as well, an assumption borne out by the mention of a stadium in the city during the prefecture of Pontius Pilate.[7] An impressive drainage system was also installed, enabling the tides to periodically flush out the city's waste. Josephus also mentions the existence of brothels.[8] A large synagogue was bordered, and perhaps surrounded, by land owned by non-Jews.[9]

References to Caesarean buildings in other ancient sources are less abundant. Philo speaks of an Augusteum,[10] while Acts notes both a palace of Herod being used as a praetorium by the governor,[11] and a prison which may have existed elsewhere.[12] Malalas reports that the Caesarea synagogue, scene of numerous confrontations between Jews and non-Jews in the 1st century,[13] was converted into an odeum by Vespasian following the war of 66-70.[14] He also mentions the bath-houses of the city[15] and its hippodrome.[16] The anonymous 4th-century *Expositio Totius Mundi et Gentium* notes the existence of a tetrapylon.[17]

Rabbinic literature of the period corroborates much of this data while providing additional information. Mention is made of the following structures in Caesarea: a tetrapylon, eastern stoa, a wine-press,[18] theaters,[19] baths,[20] the port,[21] a circus,[22] an odeum,[23] the city walls,[24] a large dome-like structure spanning a thoroughfare,[25] and what appears to be the main synagogue of the city.[26] The pillars of Caesa-

1. *War*, I, 21, 5-8, 408-415; *Antiquities*, XV, 9, 6, 331-341; XVI, 5, 1, 136-141.
2. The account in *War*, I, 21, 6, 411 says 10 ft. wide.
3. Figures furnished by A. Negev, *EAEHL*, I (Jerusalem, 1975), p. 274; cf. C.T. Fritsch and I. Ben-Dor, "The Link Expedition to Israel, 1960," *BA* 24 (1961), 55. Somewhat different measurements are given by E. Linder, "Underwater Archaeology–A New Dimension in the Study of Israel in Antiquity," *Qadmoniot* IV (1971), 49 (Hebrew)—540 m. for the southern-western mole and 270 m. for the northern one. Recently, Hohlfelder has offered the measurements of 480 m. and 280 m. respectively; R. L. Hohlfelder *et al.*, "Sebastos, Herod's Harbor at Caesarea Maritima," *BA* 46 (1983), 137, 140.
4. On this and other architectural patterns among Herodian construction, see E. Netzer, "Herod's Building Projects: State Necessity or Personal Need?" in: *The Jerusalem Cathedra* 1, ed. L.I. Levine (Jerusalem, 1981), pp. 48-61.
5. *Antiquities*, XVI, 5, 1, 136-141. Cf. M. Lämmer, "Die Kaiserspiele von Caesarea im Dienste der Politik des Königs Herodes," *Kölner Beiträge zur Sport-Wissenschaft* 3 (= *Jahrbuch der Deutschen Sporthochschule* [Köln, 1974]), 95-164.
6. *Antiquities*, XV, 8, 1, 267-276.
7. *War*, II, 9, 3, 172; *Antiquities*, XVIII, 3, 1, 57.
8. *Antiquities*, XIX, 9, 1, 357.
9. *War*, II, 14, 4-5, 284-292.
10. Philo, *Embassy to Gaius*, 305.
11. Acts 23:35.
12. Acts 24:27.
13. See above, n. 9.
14. Malalas, *Chronographia*, X, 338, *Corpus Scriptorum Historiae Byzantinae*, ed. B.G. Niebuhrii (Bonn, 1831), p. 261. Cf. also L.I. Levine, *Roman Caesarea, An Archaeological-Topographical Study, Qedem* 2 (Jerusalem, 1975), pp. 25-26.
15. *Chronographia*, XI, 367, *ibid.*, p. 281.
16. *Chronographia*, XV, 93, *ibid.*, p. 382. Cf. also *Chronicon Paschale*, 327, *PG* XCII, pp. 840-841.
17. *Expositio totius mundi et gentium*, 26, ed. and trans. J. Rougé, *Sources chrétiennes* 124 (Paris, 1966), p. 160. References to Caesarea in other pagan sources tell us little about the city's buildings; see M. Stern, *Greek and Latin Authors on Jews and Judaism*, II (Jerusalem, 1980), pp. 496, 577, 604.
18. *T Ohalot* 18, 13, ed. Zuckermandel, p. 617.
19. *Lamentations Rabba*, Prologue 17, ed. Buber, p. 7b; *J Ta'anit* 1, 4, 64b. Cf. Levine (above, n. 14), p. 25, nn. 168-169.
20. Cf., for example, *Genesis Rabba* 63, 8, eds. Theodor-Albeck, p. 687; *J Kelaim* 9, 3, 32a; *Ecclesiastes Rabba* 1, 23, and S. Liebermann, "Notes on Chapter I of Midrash Koheleth Rabba," *Studies in Mysticism and Religion: Presented to G.G. Scholem*, eds. E.E. Urbach, *et al.* (Jerusalem, 1967), p. 172 (Hebrew).
21. *J Gittin* 1, 1, 43b.
22. See above, n. 18.
23. *B Shabbat* 116a, 152a, and R.T. Herford, *Christianity in the Talmud and Midrash* (London, 1903), pp. 164-167.
24. *T Shevi'it* 4, 2, ed. Lieberman, p. 181.
25. *J Nazir* 7, 1, 56a.
26. Cf. Levine (above, n. 14), pp. 43-45.

rea are mentioned,[27] as well as a necropolis to the east of the city.[28]

Early Christian literature also contributes to our knowledge of the city. Eusebius speaks of a theater, stadium, and circus;[29] the famous library of Origen and Procopius flourished there through much of late antiquity.[30] The sad state of disrepair into which the port and aqueducts had fallen by the 6th century is recorded by Procopius of Gaza and his student Choricius.[31]

In an account of the acta and miracles of St. Anastasius the Persian, dating from the 630s, a number of specific buildings in the city are noted.[32] Anastasius visited Caesarea in 627 C.E. and was arrested; he was interrogated by the Persian governor in the local praetorium and imprisoned in the local jail, the *kastron* (fort) at Caesarea. Later he was taken back to Persia where he was executed in 628. When Anastasius' remains were returned to Caesarea in 631, they first lay "in the all-sacred church of the Mother of God called the younger." A chapel to Anastasius was built near the tetrapylon in the center of the city. Nearby was a *Campus Martius*. This account also makes reference to a church of St. Euphemia, a most holy church of Christ, and a building named after Cornelius the Martyr.

In late antiquity and throughout the Middle Ages, Caesarea was frequently mentioned by pilgrims and other travelers. The earliest Christian memory of the city speaks of Cornelius and his baptism (Acts 10). The Pilgrim from Bordeaux (333 C.E.) notes Cornelius' bath, probably referring to the place where he was baptized (Acts 10:47-48).[33] Later on, in the 4th century, St. Paula claims to have seen the house or church of Cornelius as well as that of Philip and the four virgins (Acts 21:8-9).[34] Jerome likewise mentions Cornelius' house in Caesarea.[35] Theodosius, who visited the city in 530, notes a tradition that Cornelius was martyred there. He makes reference to his tomb as well as to those of two martyrs from the time of the Diocletian persecutions, Pamphilius and Procopius.[36] A church of Procopius was destroyed by the Samaritans in 484 C.E. but restored by the Emperor Zeno.[37]

During the Middle Ages Muslim travelers also referred to the city. Among the most famous was Mukaddasi (985 C.E.), who observed:

> There is no city more beautiful, nor any better filled with good things: plenty has its well-spring here, and useful products are on every hand. Its lands are excellent, and its fruits delicious... the drinking water of the inhabitants is drawn from wells and cisterns.[38]

Mukaddasi's testimony must be taken with more than a grain of salt. He generally tends to use polite language and to exaggerate the virtues of the towns and villages he describes. Another reference to Caesarea is to be found in the writings of the Persian traveler Nâsir-I-Khusrau (1147 C.E.):

> Caesarea is a fine city, with running waters and palm-gardens, and orange and citron trees. Its walls are strong, and it has an iron gate. There are fountains that gush out within the city; also a beautiful Friday Mosque, so situated that in its court you may sit and enjoy the view of all that is passing on the sea. There is preserved here a vase made of marble, that is like to Chinese porcelain, and it is of a size to contain a hundred Manns weight of water (or about thirty-four gallons).[39]

In 1173, the Jewish traveler Benjamin of Tudela passed through the city. He mistakenly identified it with biblical Gat, but says that it is "fair and beautiful, and lies by the sea," with 200 Jews and 200 Samaritans living there.[40]

During the Crusader period, Christian visitors continued to frequent the city, and — given the fertile imagination of medieval pilgrims — further identifications with New Testament traditions were made. One account speaks of a chapel of St. Cornelius, then purported to have been the archbishop of the city

27. *J Avodah Zara* 3, 1, 42c.
28. *M Ohalot* 18, 9, ed. Albeck, p. 187, and S. Lieberman, *Tosefet Rishonim* (4 vols.; Jerusalem, 1937-1939), III, pp. 157-158 (Hebrew).
29. Eusebius, *Martyrs of Palestine*, III, 2 (Syriac version).
30. Cf. R. Cadiou, "La bibliothèque de Césarée et la formation des chaînes," *Revue des Sciences Religieuses* 16 (1936), 474-483.
31. Procopius of Gaza, *Panegyricus in Imperatorem Anastasium*, 19, *PG*, LXXXVII, Part 3, 2817; Choricius of Gaza, *Opera-Bibliotheca Scriptorum*, 45, eds. R. Foerster and E. Richsteig (Lipsiae, 1929), p. 61.
32. W.E. Kaegi, "Seventh-Century Sources on Caesarea," *IEJ* 28 (1978), 177-181.
33. J. Wilkinson, *Egeria's Travels* (London, 1971), p. 153; idem, *Jerusalem Pilgrims Before the Crusades* (Jerusalem, 1977), p. 153.
34. Peregrinatio Sanitae Paulae (404 C.E.), *Itinera Hierosolymitana et Descriptiones Terrae Sanctae*, ed. T. Tobler (Geneva, 1887), I, p. 31. See also *Itinerarium Antonini Placentini,* 46, *CCSL* 175 (1965), 174.
35. *Epistle* 108, 8.
36. Eusebius, *Martyrs of Palestine*, I, 1-2; II, 14.
37. *Chronographia*, XLV, 93-94 (above, n. 14), pp. 382-383; *Chronicon Paschale* (above, n. 16).
38. Mukaddasi, "Description of Syria, Including Palestine," *PPTS* 3:3 (1896), 55.
39. Nâsir-I-Khusrau, "Diary of a Journey Through Syria and Palestine," *PPTS* 4:1 (1893), 20.
40. *The Itinerary of Benjamin of Tudela*, ed. M.N. Adler (London, 1907), p. 20.

after Peter. Some of the large stones, still to be found in the hippodrome, were identified with Jesus: a large marble block which was part of the ancient obelisk was referred to as the table of Jesus; two *metae* (conoid stones from the hippodrome's *spina*) were referred to as the candlesticks of Jesus.[41] Jacques de Vitry's description of the city in 1180 C.E. notes that while its harbor was inconvenient, the city abounded in gardens, pastures, and running water.[42]

The later Middle Ages witnessed a general decline in the coastal cities of Palestine in favor of the hill country. A few cities (Jaffa, Ascalon, Haifa) continued to flourish, but these were the exceptions. Others, including Caesarea, were sparsely populated and unattractive, as attested by a number of later travelers.[43]

DESCRIPTIONS OF CAESAREA FROM THE 18TH AND 19TH CENTURIES

The first relatively extensive description of Caesarea from modern times is that of R. Pococke,[44] who notes the semicircular enceinte and the high- and low-level aqueducts. He locates the port to the south of the Crusader city, a view which has found adherents in the 20th century as well (see below). On the three mounds facing this inlet were the temple of Augustus and Roma (in the middle), the forum (to the north), and the theater (to the south). Pococke suggests that farther south, where the theater has in fact been excavated, was the location of the amphitheater. He identifies the reef projecting into the sea west of the theater as a remnant of the southern mole, more specifically, as the remains of the Drusus tower. Finally, Pococke dates the Crusader city walls to the time of Louis IX, and includes in this construction the small port and the castle to the west of this enceinte.

A far more elaborate survey of Caesarea — and of Palestine in general — was written by M.V. Guérin on the basis of three visits to the area in 1852, 1854, and 1863.[45] He, too, notes the semicircular enceinte and the two aqueducts which appeared to him to date from the time of Herod. Guérin devotes considerable space to an analysis of the Crusader city remains, noting the towers and gates of the surrounding wall. Interestingly, he queries whether this wall was originally Crusader or whether it might not indeed be Muslim in origin. In contrast to Pococke, he suggests that the Crusader fortress of the projecting reef was built on an earlier Muslim fort. In fact, he identifies this northern inlet with the harbor of Roman Caesarea and suggests that both the Drusus tower and Strato's Tower were located there. Having painstakingly described the stone blocks and reused columns of this Crusader fortress, Guérin erroneously identifies the row of half-sunken columns to the north as the northern mole of the Roman harbor. Moreover, he claims to have detected vestiges of the promenade described by Josephus, although no traces of the system of vaults were found. Noting the abundant architectural remains strewn over the area, he pays special attention to the remains of a Crusader church, suggesting that this mound was the *temenos* of the city, the site, in successive ages, of Herod's temple to Augustus, a Byzantine church, a mosque, and, finally, the Crusader church. On the mounds immediately south of the Crusader city, Guérin locates the theater and, farther south, the remains of a large fortress and tower. Very perceptive are his remarks concerning the hippodrome area, whose remaining appurtenances he describes rather carefully: granite and marble stones, mosaic floors, obelisk, and *spina*. He correctly identifies three large conical stones as *metae*, originally situated at the end of the *spina*.

The most comprehensive survey ever made of Caesarea was carried out by the Palestine Exploration Fund under the direction of Lieutenants C.R. Conder and H.H. Kitchener in 1873.[46] Their publication, *The Survey of Western Palestine*, remains one of the most important overall descriptions of the city to date. It describes in exacting detail the courses of the two Caesarea aqueducts, the high-level one bringing fresh water from the mountains to the northeast, and the low-level duct from the dammed Zerqa River (Naḥal Taninim) to the north. Identifying the semicircular wall as a Roman structure, the *Survey* posits that the remains in the southwestern corner of the city were those of the ancient theater, a suggestion fully corroborated almost a century later by the Italian excavation team. Along the shore, just west of the theater,

41. "The City of Jerusalem," *PPTS* 6:2 (1896), 32.
42. Jacques de Vitry, "The History of Jerusalem," *PPTS* 11:2 (1896), 5.
43. Cf., for example, some of the testimony gathered by M. Ish-Shalom, *Christian Travels in the Holy Land* (Tel-Aviv, 1965), 334, 393 (Hebrew).
44. R. Pococke, *A Description of the East and Some Other Countries* (2 vols.; London, 1743-1745).
45. M.V. Guérin. *Description géographique, historique et archéologique de la Palestine* (3 vols.; Paris, 1868-1880), II, 2, pp. 321-339.
46. C.R. Conder and H.H. Kitchener, *The Survey of Western Palestine, Memoirs*, II (London, 1882), pp. 13-29.

the *Survey* notes remains of towers, jetties, walls, and drains. Along the wall, towards the eastern boundary of Caesarea, the hippodrome is mentioned, along with the large number of stone blocks which had once adorned it. Remains of the harbor mole and temple podium are carefully recorded, as are those of the walls of the Crusader city. The masonry, gates, moat, and counterscarp associated with this wall are meticulously noted, and the glacis of the Crusader wall is judged to be later than the original construction, added perhaps in the 1251 restoration of the city under Louis IX. The wall itself, Conder and Kitchener suggest, was probably built by Gautier d'Avesnes in 1218.

Throughout the late 19th century, inscriptions were continuously coming to light and usually published in one of the periodicals devoted to Palestinian archaeology: *Revue Biblique, Palestine Exploration Fund Quarterly Statement*, or the *Zeitschrift des Deutschen Palästina-Vereins*. Among these inscriptions, two are especially noteworthy. One is a 6th-century Greek dedicatory inscription speaking of a basilica, pavement, mosaics, and the steps of a Hadrianeum.[47] The second, in Latin, mentions one Marcus Flavius Agrippa and the various offices he held in the municipality.[48]

MODERN STUDIES: HISTORICAL AND ARCHAEOLOGICAL

With the onset of the 20th century the genre of the sources of information regarding Caesarea changes. Travelogues or detailed surveys of the site are replaced by other kinds of studies. Interest in ancient cities begins to attract scholars; indeed, during the first decades of the century a spate of books appears dealing with the cities of the Phoenicia-Palestine coast — Sidon, Tyre, Jaffa, and Gaza.[49] In addition, this same period merited a series of studies on regions and cities of ancient Palestine based almost exclusively on the writings of Josephus.[50] These various lines of inquiry were integrated in Haefeli's study of Caesarea.[51] After briefly treating the history of Strato's Tower in a prefatory chapter, he divides the main body of the work into two sections: a physical description of the city, followed by a history down through the war against Rome. In his treatment of the city, Haefeli discusses the port (which he locates to the south), the temple of Augustus, the royal palace, other civic buildings, the theater and stadium, and the sewage system. In addition, he also devotes attention to the population of the city and its territory as well as to the dedicatory festival organized by Herod. With minimal recourse to parallels from the Greco-Roman world at large, Haefeli offers an exhaustive and meticulous reading of Josephus in relation to the early history of the city.

Several decades later a much shorter survey appeared, focusing more sharply, however, on the topography of the city. Aided by recently taken aerial photographs, Reifenberg successfully reaffirms the existence of a number of Caesarea structures previously noted by others.[52] He also suggests a number of new identifications on the basis of these photographs: the amphitheater in the northeastern part of the city, and a residential suburb and a large public building to the south. Reifenberg treats several geomorphic problems (the nature of the sand dunes and the changing shoreline) and offers a relatively extensive discussion of the water system.

One further study appeared during this period, devoted exclusively to a particular feature of the Caesarean hippodrome. In an article appearing in 1931,[53] Jeremias discusses the evidence for the existence of a *taraxippos* in ancient hippodromes. Literally a "scarer of horses," the *taraxippos* was a stone monument in which a god or daimon was supposed to reside. Exposed to this during a race, the frightened horse would run faster. The stone itself, perhaps in the form of an altar or a funerary monument, stood near the turn of the race course. Jeremias then reviews the literary references to Caesarea's hippodrome, describes in detail the different parts of the structure still to be seen in the city, and suggests that

47. This inscription was originally published by R.P. Germer-Durand, "Mélanges–III: Inscriptions romaines et byzantines de Palestine," *RB* 4 (1895), 75-76, and F.T. Ellis and A.S. Murray, "Inscription Found at Caesarea," *PEFQSt* 29 (1896), 87-88. The reading was later emended by W. Moulton, "Gleanings in Archaeology and Epigraphy: A Caesarean Inscription," *AASOR* 1 (1919-1920), 86-90.
48. K. Zangemeister, "Inschrift der Vespasianischen Colonie Caesarea in Palästina," *ZDPV* 13 (1890), 25-30.
49. Cf., for example, F.O. Eiselen, *Sidon: A Study in Oriental History* (New York, 1907); W.B. Fleming, *The History of Tyre* (New York, 1915).
50. W. Oehlers, "Die Oftschaften und Grenzen Galiläas nach Josephus," *ZDPV* 28 (1905), 1-26, 49-74; E. Nestles, "Judäa bei Josephus," *ZDPV* 34 (1911), 65-118; L. Haefeli, *Samaria und Peräa bei Josephus* (Freiburg, 1913).
51. L. Haefeli, *Cäsarea am Meer* (Münster, 1923).
52. A. Reifenberg, "Caesarea: A Study in the Decline of a Town," *IEJ* 1 (1950-1951), 20-32.
53. J. Jeremias, "Der Taraxippos im Hippodrom von Caesarea Palaestinae," *ZDPV* 54 (1931), 279-289.

one of the stone blocks in the hippodrome was part of an ancient *taraxippos.*[54]

From an archaeological point of view, however, further data were needed. A positive development of the 20th century was the attempt to assure more careful supervision of the sites themselves and the recording of accidental discoveries. With the establishment of the Department of Antiquities by the British mandatory government, a vehicle was created to regulate, preserve, and foster systematic excavations. Nevertheless, Caesarea was not very successful during this period as a drawing card for archaeologists whose interest, for the most part, lay in the more ancient, biblical sites. The avoidance of ascertaining the material culture of late antiquity may also have been influenced by the scope of any proposed dig in the city, as against other sites considerably smaller in area. Nevertheless, the supervisors of Caesarea for the Department of Antiquities were conscientious and kept abreast of discoveries, meticulously recording the finds there. Moreover, with the expansion of the neighboring kibbutz, S'dot Yam, in the 1940s, much new material was brought to light.

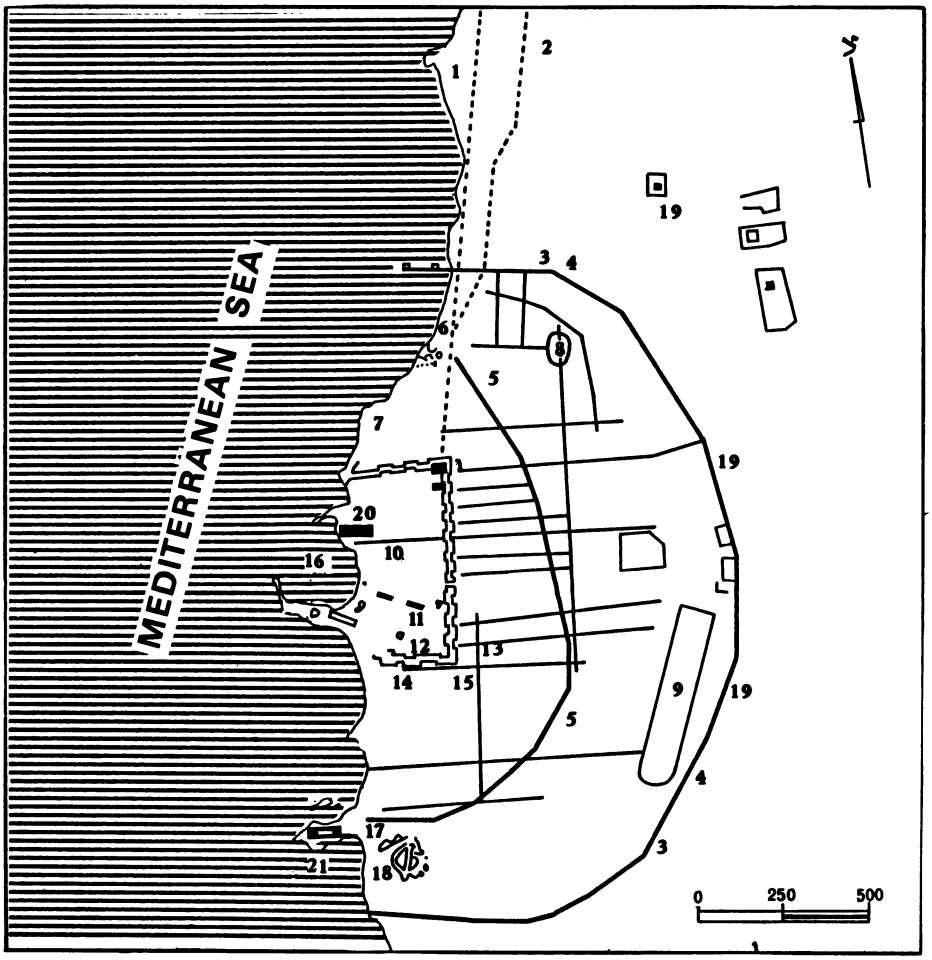
Unfortunately very little of this material has been published, though there have been several notable exceptions. In 1924, the British School of Archaeology at Jerusalem reported the discovery of a Roman mausoleum and two 2nd-century sarcophagi at Beit Ḥanina, several kilometers northeast of the city.[55] One sarcophagus depicts a combat scene between Greeks and Amazons, along with a pair of griffins. The second was decorated with garlands and cupid-like figures standing on pedestals, the upper portions of male and female figures, an eagle, and a theater mask. Another publication from this period focused on a number of inscriptions from an ancient synagogue located north of the Crusader city.[56] Part of a mosaic floor was first detected in 1932, but it was only in 1945 that this floor and its inscriptions were systematically uncovered, recorded, and analyzed. The language was Greek, with the exception of the Hebrew word "shalom," and the contents included a biblical quotation and several dedicatory inscriptions.

With the founding of the State of Israel in 1948, a more concentrated effort was made to follow up the finds that were reported. In 1951, a member of kibbutz S'dot Yam accidentally discovered a statue while plowing a field. This, in turn, led the Department of Antiquities to undertake the first full-scale excavation at Caesarea, under the direction of S. Yeivin,[57] which resulted in the discovery of an impressive Byzantine street complex, with stores, a monumental staircase, inscriptions, and two seated statues flanking the street. The statues themselves were Roman in origin, and one may have been of the emperor Hadrian, perhaps taken from the city's Hadrianeum.[58]

Several years later, excavations were undertaken with the purpose of fully uncovering the synagogue complex and the surrounding area. Much interesting material was brought to light, though regrettably no complete report has ever appeared, and our only sources of information are the brief notes published in several journals.[59] Other buildings found in the area, some of which date from the Hellenistic period, are the earliest structures ever uncovered at Caesarea and constitute the only remains of Strato's Tower. In addition to these 3rd- and 2nd-century B.C.E. buildings, the port of Strato's Tower may have been located in this area.[60]

In 1955 a church was discovered just outside the city wall, towards the northeast. Since no traces of columns or column bases were found, it has been suggested that this is either an unroofed church

54. For a critique of this suggestion, see J.H. Humphrey, "Prolegomena to the Study of the Hippodrome at Caesarea Maritima," *BASOR* 213 (1974), 23-27.
55. P.L.O. Guy, "Note on a Sculptured Marble Sarcophagus from Caesarea," *BBSAJ* 5 (1924), 55-56, pl. 14; 6 (1924), pls. 5-6; C. Watzinger, *Denkmäler Palästinas: Eine Einführung in die Archäologie des Heiligen Landes* (2 vols.; Leipzig, 1933-1935), II, 102-103.
56. M. Schwabe, "The Caesarea Synagogue and Its Inscriptions," in: *Alexander Marx Jubilee Volume*, ed. S. Lieberman (New York, 1950), pp. 433-449 (Hebrew).
57. S. Yeivin, "Excavations at Caesarea Maritima," *Archeology* 8 (1955), 123ff.
58. M. Avi-Yonah, "The Caesarea Porphyry Statue," *IEJ* 20 (1970), 207-208.
59. M. Avi-Yonah, "Notes and News–Caesarea," *IEJ* 6 (1956), 260-262; idem, "Chronique Archéologique–Césarée," *RB* 64 (1957), 243-246; idem, "The Synagogue of Caesarea (Preliminary Report)," *Louis Rabinowitz Bulletin for the Study of Ancient Synagogues* 3 (1960), 44-48; idem, "A List of Priestly Courses from Caesarea," *IEJ* 12 (1962), 137-139; idem, "The Caesarea Inscription of the Twenty-four Priestly Courses," in: *The Teacher's Yoke: Studies in Memory of Henry Trontham*, eds. E.J. Vardaman and J.L. Grant (Waco, 1964), 46-57; idem and A. Negev, "Notes and News–Caesarea," *IEJ* 13 (1963), 146-148; idem, "Chronique Archéologique–Césarée," *RB* 70 (1963), 582-585. Cf. also *EAEHL* (above, n. 3), I, pp. 277-279.
60. *EAEHL* (above, n. 3), I, p. 273.



1. High-level aqueduct
2. Low-level aqueduct
3. Byzantine city-wall
4. Exploratory trenches attesting to the Byzantine wall
5. Herodian city-wall
6. One polygonal and two circular towers (a northern gate?)
7. Hellenistic remains and a Byzantine synagogue
8. Amphitheater (?)
9. Hippodrome
10. Crusader city
11. Podium of Herodian temple to Augustus and Roma
12. Byzantine church
13. Byzantine street-complex
14. Mithraeum
15. Byzantine archive (library?)
16. Port
17. Byzantine fortress
18. Theater
19. Necropolis
20. Main excavation area, 1975-9
21. Promontory Palace

Plan 1. A general plan of Caesarea.

(*basilica discoperta*) or its atrium. An assortment of birds is depicted on the mosaic pavement, and wild animals chasing tame ones adorn its border. The building dates from the 6th or 7th century.[61]

A new era in the study of the physical remains of Caesarea was inaugurated in 1959 with the first planned systematic excavation. By 1960 three different excavation teams were at work in the field. The

61. A. Ovadiah, *Corpus of the Byzantine Churches in the Holy Land* (Bonn, 1970), pp. 44-45 and bibliography cited therein.

most ambitious undertaking was that mounted by the *Missione Archeologica Italiana*, which worked in the city from 1959 to 1963.[62] Attracted by the prospect of discovering the Herodian theater at Caesarea, a missing link in the history of ancient theaters, the Italians realized part of their goal, and discovered much else besides. The theater itself had always been easily identifiable owing to the semicircular shape of the sand dunes. It is located in the southern part of the city, some 600 m. south of the port and 100 m. inland from the coast. Built of limestone, the theater was relatively small by Roman standards. With a radius of 90 m., the theater could hold some 3,500-4,000 spectators, as compared with 5,000 at Beth She'an or 6,000 at Philadelphia-Ammon.

The theater, located on a small hilltop facing west, was designed so as to take advantage of the magnificent view of the sea as well as the westerly winds which could be acoustically beneficial. The lower part of the theater was built into the western slope of the hill, so that only the upper part (now largely destroyed) required vaults and extensive construction.

The stage of the theater (*proscaenium*) was some 7 m. wide and about 1 meter high. Its facade was decorated with square and circular niches and was faced with colored marble. A large area under the stage was used by actors and for storage of theatrical equipment. The theater itself was enclosed on the west by a scene building with its large ornate wall (*scaenae frons*), which probably reached the height of the *cavea* and, as per Roman practice, had a large semicircular exedra in the center flanked by smaller square ones. Statues undoubtedly ornamented this wall. The earlier Herodian stage was presumably built in a more Hellenistic tradition: a central square niche flanked by circular ones.

Most of the buildings excavated dated from the 2nd-4th centuries and reflected a long and continuous process of rebuilding and restoration. In the 2nd century the stage wall was rebuilt in a new style, seats were renovated, and new vaulted entrances were constructed. Many ornamental pieces were added in the 3rd century, when the *scaenae* and *porticus post scaenae* were restored and new statues were introduced. A major change occurred in the 4th century, with the conversion of the orchestra into a *colimbetra*, a pool-like enclosure for water games and exhibitions.

The most impressive aspect of the theater discoveries was the painted orchestra floor—30 m. in diameter—which boasted no less than fourteen different layers, the earliest of which dated to the Herodian era. Another noteworthy and quite unexpected find was an inscription carved on a stone block that had been reused as a theater stair; the inscription not only names Pilate himself, but refers to him as a praefect and mentions a Tibereium in the city.[63]

Although concentrating their efforts on the excavation of the theater, the Italian mission worked in several other areas as well. They verified for the first time the existence of the semicircular enceinte, but dated it to the Byzantine period. Moreover, north of the Crusader city and just behind the ancient synagogue, they uncovered the northern section of a heretofore unknown wall with accompanying towers. This wall dates from the Herodian period and was apparently part of the 1st-century defenses. Remains of an impressive Byzantine building north of the city and just east of the aqueducts were brought to light and identified as a Christian chapel. In addition, many of the coins, inscriptions, and statues discovered in the course of this expedition were published in their final report.

Concurrent with the Italian effort, another group was in the field with very different objectives. In 1960 a Hebrew University team, under the direction of A. Negev, tackled the problem of the Crusader city.[64] The debris and soil accumulation were removed from around the Crusader fortifications, revealing for the first time in 700 years the impressiveness of the wall with its towers, moat, and counterscarp. It was concluded that the wall was built in two stages. The first phase was considered early Crusader, i.e., pre-1251. Under Louis IX, the wall was strengthened by a glacis, and a moat, counterscarp and elaborate 'indirect' entrance on the eastern side were introduced.

The excavators worked in the southern third of the area within the walls of the Crusader city. The

62. A. Frova, ed., *Scavi di Caesarea Maritima* (Rome, 1966), and the numerous articles resulting from these excavations conveniently listed in the bibliographies of Levine (above, n. 14) and J. Ringel, *Césarée de Palestine: Etude historique et archéologique* (Paris, 1975).

63. Cf. H. Volkman, "Die Pilatusinschrift von Caesarea Maritima," *Gymnasium* 75 (1968). Of late, see the study by H. Plommer, "Scythopolis, Caesarea and Vitruvius: Sounding-Vessels in Ancient Theatres," *Levant* 15 (1983), 132-140.

64. A. Negev, "The Palimpset of Caesarea Maritima: Excavations and Reconstructions, Part II: Excavations, Herodian and Byzantine," *The Illustrated London News*, vol. 243 (Nov. 2, 1963), 728-731; idem, "Early Roman Caesarea," *Mada* 11 (1966), 136-144 (Hebrew). Cf. also Negev's communication published in A. Schalit, *König Herodes, der Mann und sein Werk* (Berlin, 1969), pp. 334-338 and Negev (above, n. 3), pp. 273-274, 279-285.

remains of an unfinished tri-apsal Crusader church were cleared, as well as streets, passageways, and walls built in Crusader times from the remains of Roman structures. As noted, it had often been assumed that the mound on which the remains of the Crusader church stood was the site of the great temple erected by Herod. These excavations confirmed this assumption, proving the mound to be artificial. On its northwestern side extensive foundations were discovered with niches and aediculae of different sizes; on the southern side was a series of vaults. The architectural style and the early Roman pottery attest to Herodian construction. The vaults themselves may have been part of the storage and lodging complex associated with the harbor, as described by Josephus.[65]

Exploration of the region just west of this mound led to the discovery of remains of walls and floors dating to the Arab and Byzantine periods. The discovery of a wall extending westward from the mound and identified as a pier, together with indications that this area had once been under water, suggest that this area had once formed part of the harbor installations, perhaps part of the inner anchorage mentioned by Josephus.[66] Only under Byzantine rule had the port silted up sufficiently to allow for construction and settlement.

Two other points of interest were explored by Negev. Just south of the Crusader city an impressive Byzantine complex was discovered, replete with a series of halls and courts and numerous mosaic pavements. A large apse and cupola were located at the western end of this area. On the basis of a quotation from the New Testament (Romans 13:3), as well as a statue of Jesus Criophorus (the Good Shepherd), it was suggested that this building may have housed the famous library of the Christian community of the city at the time of Origen and Eusebius. Finally, a section of some 300 m. was cleared from the high-level aqueduct, fully exposing the arches which carried the water channels to the city. In the process, a number of inscriptions were uncovered, all in Latin and all dating from the Hadrianic period.[67]

The third team which worked in Caesarea during the summer of 1960 was under American sponsorship. The Link Marine Expedition inaugurated a new era in the exploration of the coastal cities by conducting an underwater survey of the harbor.[68] The expedition charted the circular breakwater, verifying the magnitude of the stone blocks used by Herod. Traces of debris, perhaps from a 2nd-century earthquake, were also noted. Interestingly, one of the objects found by the expedition was a small medallion depicting a port whose entrance was flanked by towers and statues. Two vessels also appear, as do the letters "KA," referring perhaps to the name Caesarea. This medallion may thus offer the only extant visual depiction of the ancient harbor of the city.[69] Link's attention was also drawn to the reef just west of the theater; by means of a high-powered hose, he managed to expose a small part of an impressive mosaic. This effort was never pursued, however; the mosaic was covered over, and no report of the find was ever published.

The intensive archaeological activity in Caesarea during the early 1960s subsided and was renewed in the 1970s with the organization of the Joint Archaeological Expedition to Caesarea Maritima, a consortium of American institutions under the sponsorship of the American Schools of Oriental Research and directed by R. Bull.[70] This excavation team is unique not only as regards the techniques and methods employed, but also in the scope and ambition of its project. In contrast to earlier efforts, which focused on a particular structure over a period of several seasons, this team pursued the methodical excavation of numerous important sections of Caesarea and the concurrent reconstruction of the plan of the entire city.

Activity was conducted simultaneously in a number of areas. At first efforts were concentrated in the area of the Byzantine street uncovered by Yeivin in 1951. Excavation of this street was extended to the south, where a plaza was discovered. To the north, where it was hoped that the main intersection of the city would be uncovered, relatively little was turned up. Work also commenced in the hippodrome area to the east; surprisingly, the earliest verifiable date of

65. *Antiquities*, XV, 9, 6, 337.
66. *Antiquities*, XV, 9, 6, 332.
67. A. Negev, "The High-Level Aqueduct at Caesarea," *IEJ* 14 (1964), 237-249.
68. Fritsch and Ben-Dor (above, n. 3), 50-59.
69. B. Oestreicher, "A Contemporary Picture of Caesarea's Ancient Harbor," *Israel Numismatic Bulletin* 2 (1962), 44-47.
70. Preliminary notes reporting results of various seasons have been published by R. Bull, *IEJ* 23 (1973), 260-262; 24 (1974), 280-282; idem and L. Toombs, *IEJ* 22 (1972), 178-180; *RB* 80 (1973), 582-585; 82 (1975), 278-280; and more recently the report of R.C. Wiemken and K.G. Holum, "The Joint Expedition of Caesarea Maritima: Eighth Season, 1979," *BASOR* 244 (1981), 27-52; R. Bull, "Caesarea Maritima: The Search for Herod's City," *BAR* 8, 3 (1982), 24-41.

the structure goes back to only the late 3rd century. The large and impressive Byzantine building first exposed by the Italians was carefully measured, and further excavations were carried out there. In addition, probes were conducted along the Herodian wall and the aqueducts, and the area just north of the Crusader city, where remains of Strato's Tower may have been found, was explored more seriously.

By far the most impressive results of this expedition were in the area just south of the Crusader city. The first in a series of twenty vaults was discovered, and if indeed the entire area to the theater contains such vaults, there may have been as many as eighty in all! Each vault measures 29.5 x 5 x 4.5 m. and is perpendicular to the coast. Since the vaults appear to be Herodian in origin, their discovery raises far-reaching questions as to the location of the harbor, the dimensions of Caesarea's maritime activity, and the overall physical appearance of the city along the shoreline. Moreover, in the northernmost vault (the only one fully excavated to date) a 3rd-century Mithraeum was discovered, the first completely preserved pagan temple in Caesarea. The benches, altar, wall paintings (albeit quite faded), and a medallion confirm this identification.[71]

Just east of these vaults a large Byzantine building was identified. Since one of the four inscriptions found in it mentions archivists and a financial secretary, this building may have served as an archive or administration building of the city. A large apse facing west is located immediately north of the Mithraeum vault. It was once covered with a colorful mosaic and appears to have been destroyed in the early 7th century, perhaps during the Persian conquest of 614. East of this apse is a mosaic floor with female figures representing the Seasons.

In this area a number of Byzantine streets were found. Several of them run east-west — about 90 m. apart—toward the coast, thereby dividing the vaulted area into sections. Three north-south streets were discovered so far, each 80 m. from the next. One of these streets was clearly a main cardo of the city, for it is almost 15 m. wide and is divided into three parts by two rows of columns. The street itself is 4 m. wide and is paved in stone in a herring bone pattern. The sidewalks, each 5.35 m. wide, were paved with mosaics.

While these large-scale operations have dominated the Caesarea scene for the past fifteen years, a number of more limited studies were made which merit our attention, several focusing on the city aqueduct which, as noted, was uncovered just north of the city in 1961. Prior and subsequent to this clearing, a number of inscriptions relating to its construction were discovered.[72] Altogether ten inscriptions are known. The nine in Latin date to the time of Hadrian, and the single one in Greek to the time of the governor Flavius Florentius (385 C.E.). The sources of the aqueduct were also studied. There is general agreement today that the high-level aqueduct was built in two stages, under Herod and Hadrian. The Herodian aqueduct brought water from the Shumi springs some 7 km. northeast of the city, just north of present-day Binyamina. The Hadrianic section drew its water from springs 7.5 km. further northeast. The low-level aqueduct, constructed in the early Byzantine period, brought water from the Kabbara marshes, some 5 km. north of the city.[73]

Other studies covered a wide range of topics. Systematic underwater exploration of Caesarea's port began in 1976.[74] In 1979, Haifa University, in cooperation with several American institutes, established the Caesarea Ancient Harbour Excavation Project, currently under the direction of A. Raban, E. Linder, and R.L. Hohlfelder. The results of the first seasons have largely substantiated Josephus' account of the Caesarea port. The Herodian harbor utilized the most current building techniques then known, and in some ways anticipated by decades, and even centuries, the harbor at Rome itself and those of North Africa. Remains of a promenade around the harbor on the inner part of the breakwater and of an

71. R. Bull, "A Mithraic Medallion from Caesarea," *IEJ* 24 (1974), 187-190; idem, "The Mithraeum at Caesarea Maritima," *SBL* 1 (1975), 215-221; L.M. Hopfe and G. Lease, "The Caesarea Mithraeum: A Preliminary Announcement," *BA* 38 (1975), 2-10.

72. H. Hamburger, "A New Inscription from the Caesarea Aqueduct," *IEJ* 9 (1959), 188-190; J. Olami and J. Ringel, "Two Inscriptions of the Tenth Legion Fretensis from the High-Level Aqueduct of Caesarea," *IEJ* 25 (1975), 148-150.

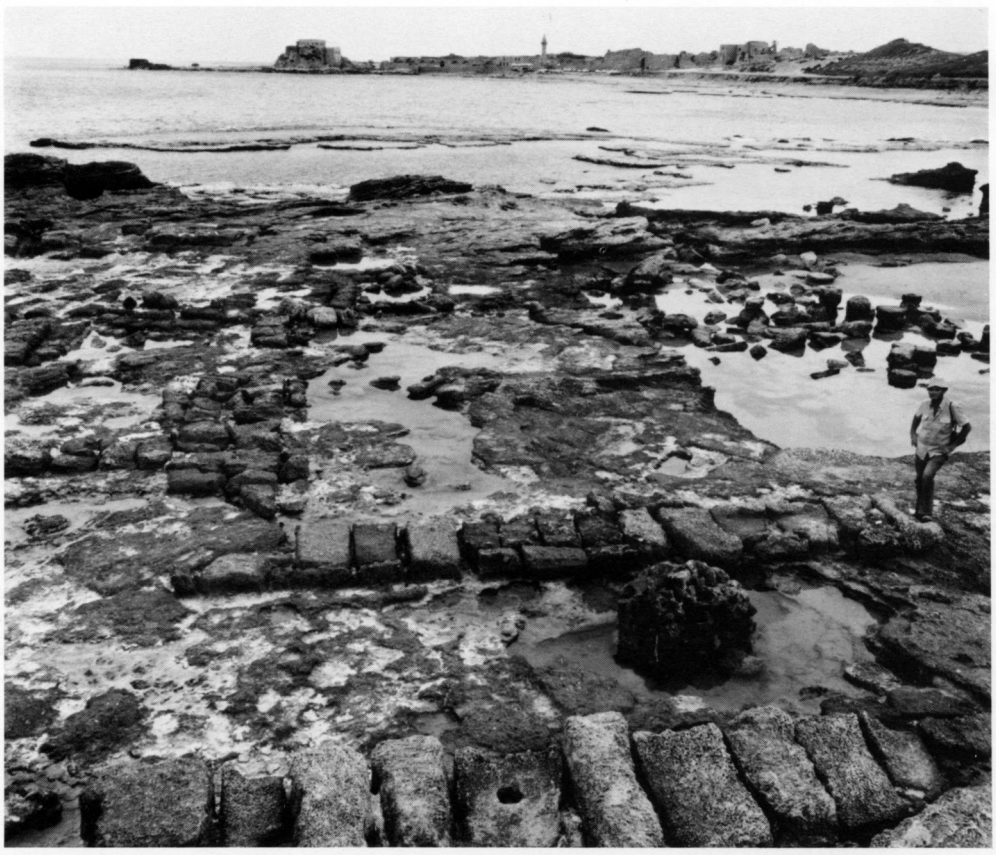
73. J. Olami and Y. Peleg, "The Water Supply System of Caesarea Maritima," *IEJ* 27 (1977), 127-137.

74. A. Raban, "Césarée Maritime–1976," *RB* 85 (1978), 412-415; idem, "The Ancient Harbor of Caesarea Maritima," *Archaeology* 34 (1981), 56-60; idem, "Josephus and the Herodian Harbour of Caesarea," in: *Josephus Flavius: Historian of Eretz-Israel in the Hellenistic-Roman Period*, ed. U. Rappaport (Jerusalem, 1982), pp. 165-184 (Hebrew), as well as Hohlfelder *et al.* (above, n. 3), 133-143; R.L. Hohlfelder, "Caesarea Beneath the Sea," *BAR* 8, 3 (1982), 42-47; A. Raban, R.L. Hohlfelder, "The Ancient Harbors of Caesarea Maritima," *Archeology* 34 (1981), 56-60; L. Vann, "Herod's Harbor Construction Recovered Underwater," *BAR* 9, 3 (1983), 10-14.

entrance tower were found. The measurements given by Josephus have also been verified. He speaks of a southern breakwater 200 feet (63 m.) wide;[75] measurements at several places vary between 195 and 243 feet (60 and 75 m.). Josephus mentions huge blocks used in the foundation of the moles;[76] blocks even larger than those he described have been discovered. He also notes an inner anchorage;[77] a large system of anchorages and moorings has been traced.

For over more than a decade additional probes and studies have enhanced our knowledge of Caesarea. The "suburb" theory first propounded by Reifenberg was tested to the south of the city by various teams on several occasions and was found wanting.[78] The rectangular insulae were, instead, gardens and small fields utilized by the residents of the city. Humphrey has systematically described the hippodrome area and its remains in the city's eastern port, indicating that the recent probes which point to a 3rd-century date for the structure dovetail with what is known about the introduction of such buildings into the Roman East.[79] The statues found in the Byzantine street complex excavated by Yeivin have been studied,[80] as has the Tyche of the city.[81] Many inscriptions have been published,[82] and the gems have been stud-

75. *War*, I, 21, 6, 412.
76. *Antiquities*, XV, 9, 6, 334.
77. *Antiquities*, XV, 9, 6, 332.
78. Y. Kedar and Y. Ziv, "The Water Supply of Ancient Caesarea," *BIES* 28 (1964), 122-131 (Hebrew); Y. Porat, "The Gardens of Caesarea," *Qadmoniot* VIII (1975), 90-93 (Hebrew). Kedar and Ziv also suggested that the semicircular ridge around the city was not a wall, but in fact part of the water supply system. The idea has won little support and its coup de grâce has been supplied by recent excavations.
79. See above, n. 54.
80. Avi-Yonah (above, n. 58), 203-208; P.R. Diplock, "The Date of Askalon's Sculptured Panels and An Identification of the Caesarea Statues," *PEQ* 103 (1971), 13-16; idem, "Further Comment on 'An Identification of the Caesarea Statues'," *PEQ* 105 (1973), 165-166.
81. H. Seyrig, "La Tyché de Césarée de Palestine," *Syria* 49 (1972), 112-115.
82. In addition to nn. 56, 60 and 62, see also the numerous inscriptions published by B. Lifshitz as listed in the bibliography of Levine (above, n. 14), pp. 53-54 or Ringel (above, n. 62), pp. 181-182. See especially Lifshitz' own summary, "Césarée de Palestine, son histoire et ses institutions," *ANRW* 8.2, pp. 490-518.



Ill. 2. The remains of the promontory palace, with the Crusader fortress in the background.

ied.[83] The reef west of the theater was measured by the architect A. Flinder and identified as the site of a piscina from the Roman period[84] and a mosaic floor belonging perhaps to a wealthy 5th-century landowner.[85] The question of the location of Strato's Tower has been raised, and several alternate suggestions have been made.[86] In the mid-1970s, a number of books appeared which treated the archaeological finds of Caesarea in general: the writer's *Roman Caesarea* and J. Ringel's *Césarée de Palestine,*[87] and recently, a summary of the stratigraphy of Caesarea has been offered by Toombs.[88]

Several other works, while not strictly archaeological in nature, ought to be mentioned in this context. In 1957, as part of a series on Palestinian coins, L. Kadman published a book on the municipal coins of Caesarea.[89] Although many of the coins are in poor condition and the photographs and identifications are of somewhat limited value, the book nevertheless presents an important corpus of coins which are of enormous interest to archaeologist and historian alike. The history of Caesarea has been treated in three different works, each of which appeared in 1975. L. Levine's *Caesarea under Roman Rule* deals with the history of the city from its inception down to the Byzantine period.[90] The American Joint Expedition to Caesarea published a series of articles on 1st-century Jewish, Christian, and Crusader Caesarea, as the first volume of a projected series.[91] Ringel's *Césarée de Palestine* includes an historical overview of the city as well, and Bietenhard has published a monograph on Jewish and Christian Caesarea in antiquity.[92]

This, then, was the state of archaeological activity in Caesarea when the Caesarea Development Corporation, in conjunction with the National Parks Authority, approached the Institute of Archaeology of the Hebrew University to arrange for the exploration of the northern section of the Crusader city, where no archaeological investigation had previously taken place. Three seasons of fieldwork ensued whose results are presented in the following report.

83. A. Hamburger, "Gems from Caesarea Maritima," *'Atiqot* 8 (1968), 1-38. Cf. also idem, "A Graeco-Roman Amulet from Caesarea," *IEJ* 9 (1959), 43-45.
84. A. Flinder, "A Piscina at Caesarea–A Preliminary Survey," *IEJ* 26 (1976), 77-80.
85. A. Siegelman, "A Mosaic Floor at Caesarea Maritima," *IEJ* 24 (1974), 216-221.
86. D. Roller, "The Problem of the Location of Straton's Tower," *BASOR* 252 (1983), 61-68.
87. See Levine (above, n. 14) and Ringel (above, n. 62). A more popular survey of Caesarean remains has appeared in *BAR* 8, 3 (May/June 1982), and includes articles by R.J. Bull, "Caesarea Maritima–The Search for Herod's City" and R.L. Hohlfelder, "Caesarea Beneath the Sea." Cf. also P.I. Fransen, "Césarée Maritime au temps de S. Paul," *Le Monde de la Bible* 12 (1980), 5-13.
88. L.E. Toombs, "The Stratigraphy of Caesarea Maritima," in: *Archaeology in the Levant: Essays for Kathleen Kenyon*, eds. R. Moorey, P. Parr (Warminster, 1978), pp. 223-232.
89. L. Kadman, *The Coins of Caesarea Maritima, Corpus Nummorum Palaestinensium* II (Jerusalem, 1957). For other numismatic studies, cf. H. Hamburger, "Minute Coins from Caesarea," *'Atiqot* 1 (1955), 115-138; idem, "Coins from Caesarea and the History of the City," *BJPES* 15 (1950), 78-82 (Hebrew); idem, "The Coin Issues of the Roman Administration from the Mint of Caesarea Maritima," *IEJ* 20 (1970), 81-91; S. Levy, "A Hoard of Abbasid Coins from Caesarea," *Eretz Israel* 7 (1964), 47-68 (Hebrew); L. Levine, "Some Observations on the Coins of Caesarea Maritima," *IEJ* 22 (1972), 131-140.
90. Idem, *Caesarea under Roman Rule* (Leiden, 1975).
91. C.T. Fritsch, ed., *The Joint Expedition to Caesarea Maritima–Vol. I: Studies in the History of Caesarea Maritima* (Missoula, 1975).
92. H. Bietenhard, *Caesarea, Origenes und die Juden* (Stuttgart, 1974). See also the recent, somewhat speculative article by H.K. Beebe, "Caesarea Maritima: Its Strategic and Political Significance to Rome," *JNES* 42 (1983), 195-207.

Plan 2.
The area within the Crusader walls,
with the grid used during the excavations.

CHAPTER TWO

THE MAIN EXCAVATION AREA: DESCRIPTION AND STRATIGRAPHY

E. Netzer

The main area of excavation, situated along the coast at the center of the Crusader city (Plan 3), was investigated in four stages: a minor campaign in May 1975, a major one in October 1975, another minor season in April 1976, and a final minor season in July 1979.[1] This description of the remains will follow the 10 x 10 m. squares of the basic grid.

SQUARES D-E/8

(D/8 supervised by E. Lass; E/8 supervised by E. Braun)

A sounding was dug in this area in May 1975. Although the squares to the west were at the time based on a 10 m. grid, it was decided to adjust the boundaries here to the north and south in order to accommodate the preliminary sounding. As a result, the final excavated area (excluding balks) was 18 x 8m.

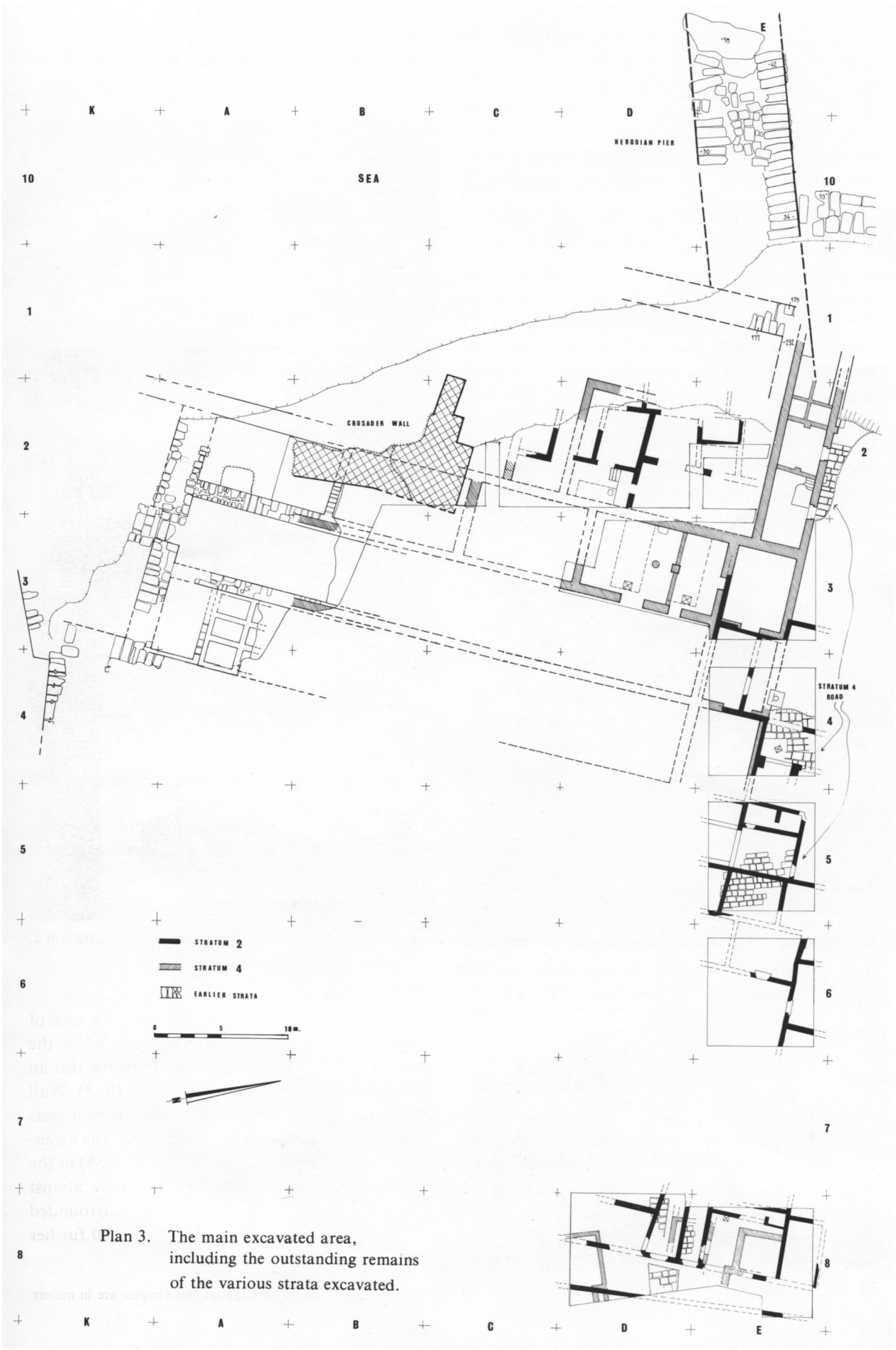
Stratum 1 (Plan 4a)

Characteristic of this stratum were several rough lime plaster floors. Some of the walls from Stratum 2 were still in use in this period. At the northern end of Square E/8 a floor was uncovered just below the surface (L. 48 at +6.60[2]), and slightly below this an earlier floor appeared (L. 49 at +6.35; Ill. 3). Wall W14, only partially exposed in the northern balk, was probably associated with the upper floor. The extensive remains of another floor (L. 58 at +6.35) in the southern central part of Square E/8 were almost certainly accommodated to the walls that surrounded courtyard L. 124 of Stratum 2. Wall W100 further

Ill. 3. Stratum 1 floor of Locus L49, facing north.

Ill. 4. A general view of Squares D-E/8, in Stratum 2, facing south.

1. See Introduction, p. 1.
2. All elevation figures throughout this chapter are in meters.

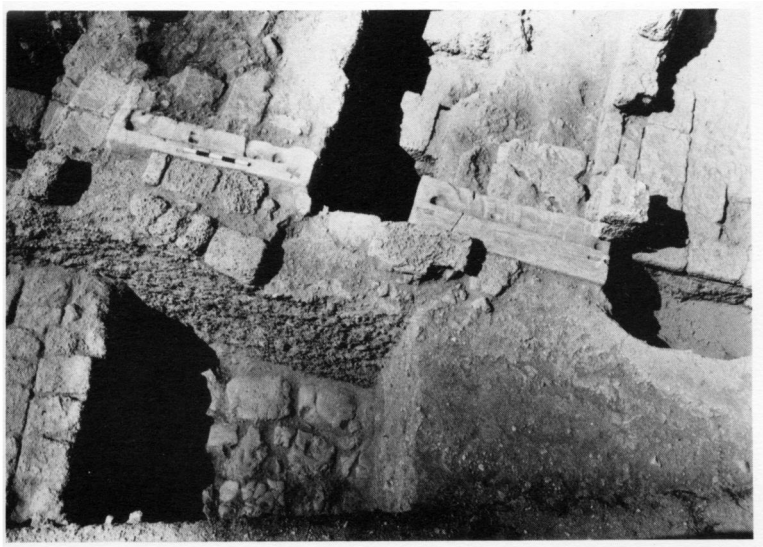


Plan 3. The main excavated area, including the outstanding remains of the various strata excavated.

subdivided this courtyard floor, which had already been subdivided by the narrow wall W102 in phase 2a (Ill. 9). In the eastern part of Square E/8 were remains of a plaster floor (L. 52 at +6.65) adjacent to the western side of wall W33. This surface probably belonged to a street that existed here in Stratum 2.

Stratum 2 (Plans 4b, c, 5a)

A street about 3 m. wide was exposed along the eastern side of Squares D-E/8. To the west of this street were parts of two adjacent dwellings (Ill. 4). Their entrances were situated in the corners of these dwellings, on either side of their common wall W104, and both led first into a corridor. The doors were relatively wide (about 1.0-1.1 m.), and in both cases the thresholds had been carved in one piece from reused marble columns. The holes in which the door-posts pivoted and the slots for bolts securing the doors were preserved; long use had gouged grooves into the marble (Ill. 5).



Ill. 5. Marble thresholds of the entrances to adjacent dwelling houses in Squares D-E/8, facing west. In the foreground, paved floors of Strata 3 and 4.

The Northern Building

Three distinct phases (a-c) were observed in this house. The relationship between phase 2a and phase 2b is well defined, whereas their relationship to phase 2c is somewhat unclear.

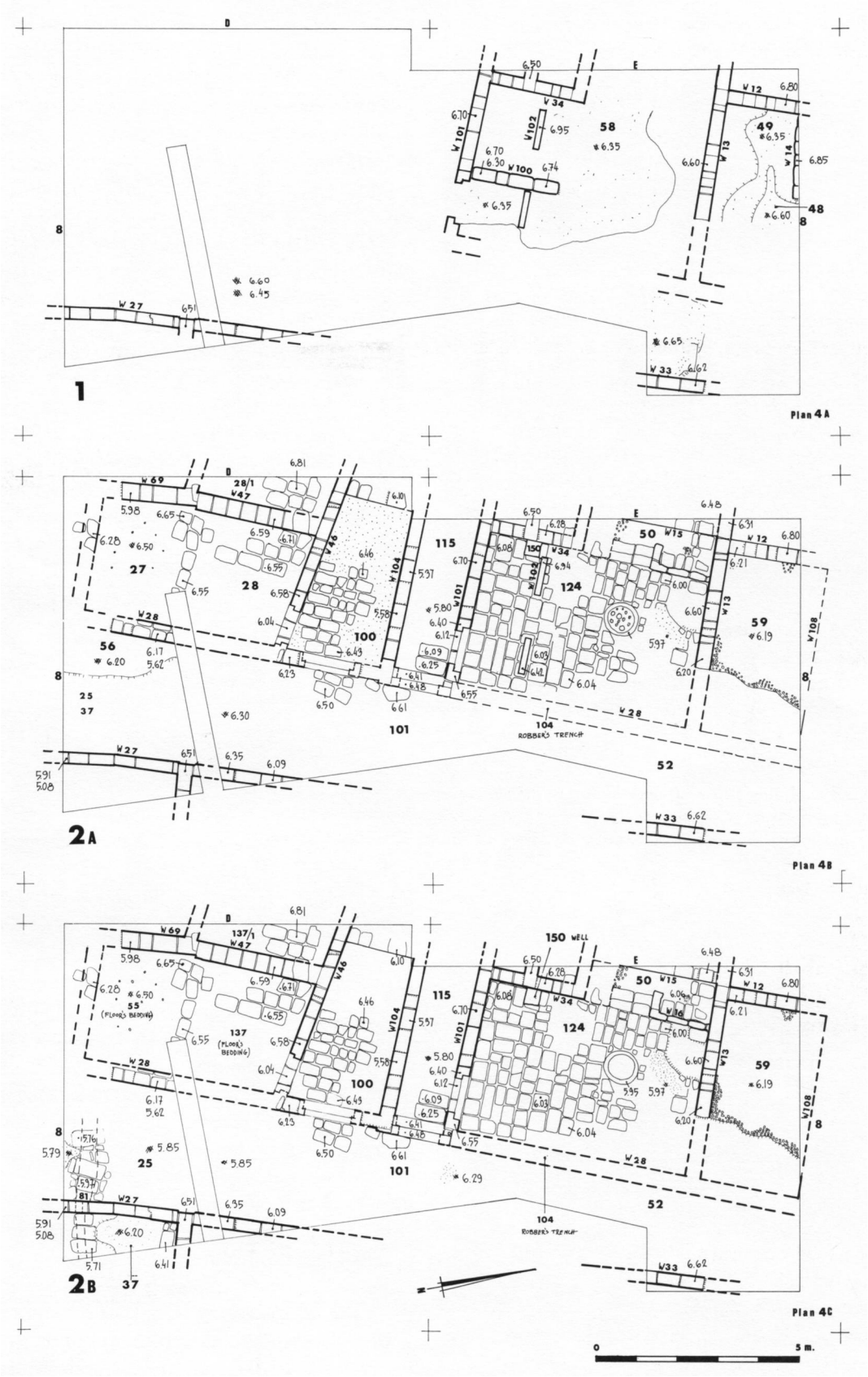
Locus 115 is the corridor that leads from the main street (L. 101). The entrance was 1.2 m. wide and at least 4 m. long; the western extremity was not unearthed. The beaten earth floor was about 50 cm.

Ill. 6. Room L59, courtyard L124, and corridor L50, facing south. Note entrance to well L 150 in upper right corner.

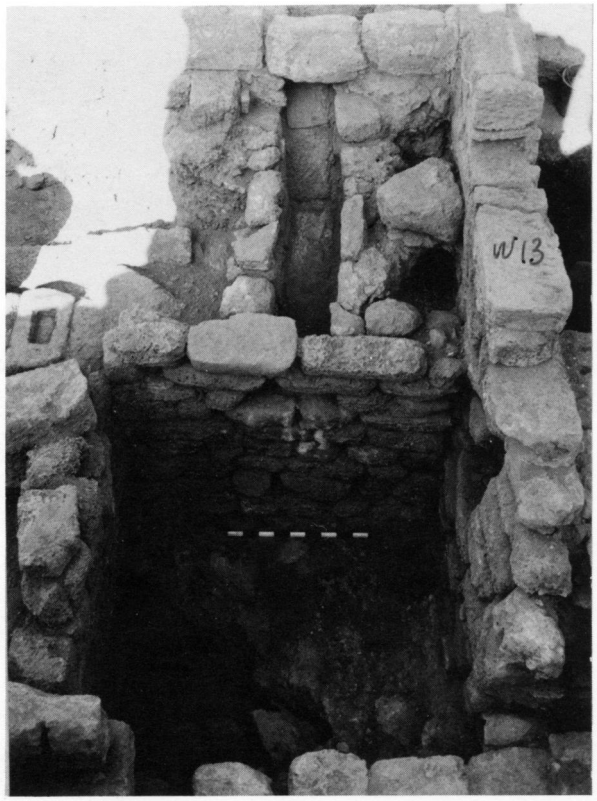
lower than the street and reached by stone steps. No change in level was observed between phases 2a and 2b.

Locus 124, a rectangular courtyard entered from corridor L. 115, measures 5.6 x 3.7 m. It lies adjacent

Ill. 7. Looking east, through room L50, into courtyard L124. Note the channel (covered with stone slabs) which begins in room L50 and ends in cistern L162.



Plan 4. Plans of Squares D-E/8: a. Stratum 1; b. Stratum 2a; c. Stratum 2b.



Ill. 8. Cistern L162 below courtyard L124, with the channel approaching from room L50, facing west.

Ill. 10. A sounding below street L93 and room L59, facing north. The small structure below room L59, partially covered by capstones, is visible to the left. →

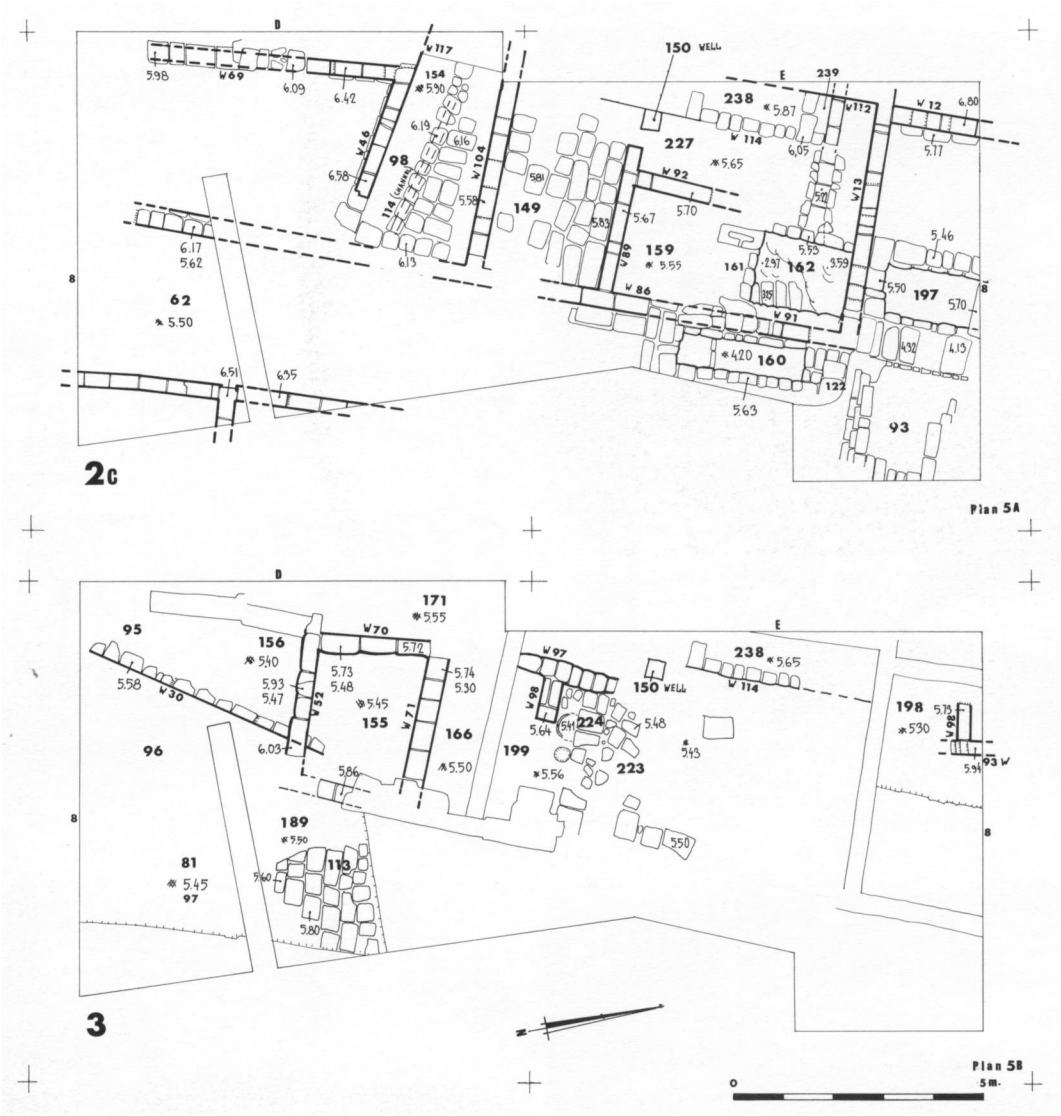
Ill. 9. Later walls in courtyard L124, facing southwest. In the center, wall W100 of Stratum 1 and wall W102 of Stratum 2.

to the street and was probably the central courtyard of the building (Ill. 6). Although the southern wall and parts of the northern and western walls of the courtyard were preserved, the eastern wall and that part of the northern wall adjacent to it were robbed to below floor level. The walls are typical of Stratum 2: relatively narrow (up to 35 cm. wide) and built of dressed sandstone ashlars, each course only one stone wide. Courtyard L. 124 was paved with rectangular stone ashlars, most of which were preserved. Into the floor was set a stone mortar, 85 cm. across and 20 cm. deep, which was cancelled and paved over, though originally it must have been functional, either here or somewhere else (Ills. 6-7).

Two water installations were related to this courtyard, a well (L. 150) and a cistern (L. 162). The well was cut mainly through *kurkar* bedrock while its upper shaft was lined with stones. The entrance is 40 x 40 cm. (Ill. 6), and the shaft itself measures 95 x 95 cm. Many vessels were recovered from the lower part of the well. Cistern L. 162, located beneath the northeastern corner of the courtyard, measures 1.4 x 1.9 m.

across and 2-2.5 m. in depth (Ill. 8). Its bedrock floor was not leveled off. The cistern was probably covered with a barrel-vaulted ceiling that has since collapsed. A 30 cm. wide channel, covered with stone slabs, begins in room L. 50 and enters this cistern from the west (Ills. 7-8). Traces of plaster covering the capstones probably indicate later repairs. It would appear that there were other inlets to the cistern, one through a ceramic pipe in the cistern's northeastern corner. It is unclear whether the function of this cistern was to collect rainwater, or whether it served as part of a sewage system. No plaster was found on the walls, whose stones were thus heavily eroded.

In phase 2a there was no change in the courtyard floor, but a narrow wall (W102), only 15 cm. wide, was erected directly onto the paved floor with a relatively wide entrance through its center (Ill. 9). This



Plan 5. Plans of Squares D-E/8: a. Stratum 2c with cisterns of Stratum 2b; b. Stratum 3.

wall set off the southern end of the courtyard, which was probably roofed over.

Locus 59, which was almost entirely exposed, is a room, 4.5 x 2.5 m., north of the courtyard (Plans 4b-c; Ill. 6). The entrance from the courtyard must have been located either in the segment of wall W13 that was robbed or in the northern wall which remains in the balk. The floor was largely composed of fragments of a greenish marble about 5 cm. long. The eastern part of the floor is missing as a result of the looting of some of the capstones that covered a small structure (L. 197; Ill. 10) which lay below the floor (Plan 5a). As in room L. 115 and courtyard L. 124, the floor level in room L. 59 did not change from phase 2a to 2b.

Locus 50, a long narrow room west of the courtyard, was perhaps a corridor 80-90 cm. wide and about 3.1 m. long. Two pieces of marble column were used to make the threshold between this room and the courtyard (Ill. 7). The northern end (1.25 x 90 cm.) was divided from the rest of L. 50 by a small wall. Here began the channel leading into cistern L. 162 (Plan 5a). The floor of this small chamber, whose function is uncertain, was paved with pieces of marble slabs and rough tesserae between them (Ill. 7). Here, too, the floor level did not change from phase 2a to phase 2b.

The Northern Building — Phase 2c

In phase 2c the Northern Building was radically different from that of phases 2a and 2b, despite the fact

Ill. 11. Room L159 of phase 2c, facing east.

Ill. 13. Room L98 of phase 2c, looking east. →

Ill. 12. The water channel L114 below room L159 of phase 2c, with tentative earlier floor below.

that the basic plan was apparently retained. The best defined room of this phase is L. 159, which lay beneath corridor L. 115 and the southern part of courtyard L. 124 (Ill. 11). Its width was 3-4 m., but its length cannot be determined as its western end is in the balk. The room was paved with rectangular sandstone blocks and probably functioned as a courtyard, possibly an entrance court. A doorway probably existed here in phase 2c, below the marble threshold of phases 2b-a. Because of the construction of cistern L. 162 in phase 2b, the area to the north of room L. 159 is very disturbed. The clearest remains here consist of wall W92, which is perpendicular to wall W89 (the northern wall of room L. 159). East of wall

W92 lies the beaten earth floor of room L. 161, which is 2.2 m. wide. West of wall W92 were remnants of a lime-plaster floor that belonged to a long narrow room, L. 227, which was 1.2 m. wide. Room L. 227 was bounded in the west by wall W114, which lies below wall W16 of phase 2b. Below L. 50 (phase 2b) were found the remains of L. 238, another narrow room, with a lime-plaster floor and a small silo (L. 239) at its northern end. We have no definite evidence concerning the remains of phase 2c below room L. 59.

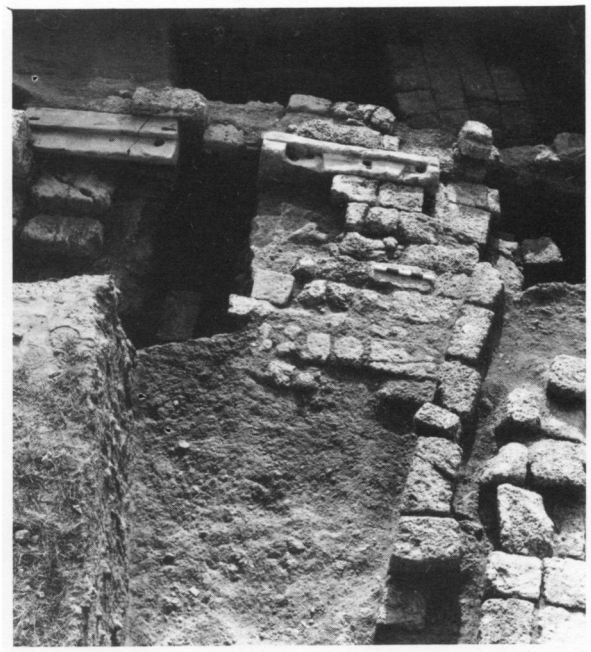
The Southern Building

This structure, unlike the Northern Building, is poorly preserved; it is therefore difficult to obtain a clear picture of it.

Loci 98 and 100 are the entrance corridor to the house. Its length is 4 m. and its width varies from 2.2

m. in the east to 1.8 m. in the west. No changes in the walls of this room were noted throughout Stratum 2. In phase 2c the room (L. 98) was paved with sandstone blocks at +6.16 (Ill. 13), some of which were the capstones of a channel (L. 141) just below the floor. This channel probably drained water from the house into the street. A lower beaten earth floor (L. 154 at+5.90; Ill. 12) was either an earlier floor of the same phase or represents leveling for the pavement.

In phase 2b the floor was raised and again paved (L. 100 at +6.46) with sandstone blocks (Ill. 14), but of better quality. At the same time, a marble threshold was integrated into wall W28 at the entrance to the house. The stone pavements would seem to imply that this entrance room (or court) was open to the sky, though theoretically the stone pavement (L. 100) could have belonged to phase 2b and the *kurkar*



Ill. 14. Room (L71+L100) of phases 2a-b, facing east.

Ill. 16. The section of the street in L25, at level +5.85 m, facing west.

Ill. 15. Rooms L71+L100 and L137 of the southern dwelling structure, facing west.

portion of the floor (L. 71) to phase 2a. There were no basic changes in this area in phase 2a.

Loci 137 and 55, the central courtyard of the Southern Building, lay to the south of the corridor described above. Its entrance was through the northern wall, just diagonal to the street door, and in this respect mirrors the doorway into the courtyard of the Northern Building (Plan 4c). Wall W69 probably bounded this courtyard to the west in the original 2c phase (Plan 5a). We found no floor from this period: it was either completely robbed or totally decayed. This area was slightly diminished in phase 2b by the building of a new wall W47, east of the line of wall W69. The width of the courtyard was now 2.9 m. instead of 3.3 m., and it was paved with sandstone blocks (at +6.55-+6.65) which were preserved only along its western side (Ill. 15). There were no basic changes in phase 2a. The plaster floor (L. 27 at +6.50), which may have replaced the missing sandstone blocks, probably belongs to this phase. The length of the courtyard in all its phases remains uncertain because the southern extremities are badly disturbed.

Only a small section of L. 137/1, a room west of the courtyard, was exposed. It was paved with sandstone blocks (at +6.80) and probably existed during phases 2a and 2b (Ill. 15).

Building L. 37 East of the Street

Only a very small portion of this building, situated east of the street, was uncovered in the southeastern corner of Square D/8 (Ill. 19). A beaten earth floor

Ill. 17. Cistern L160, facing west.

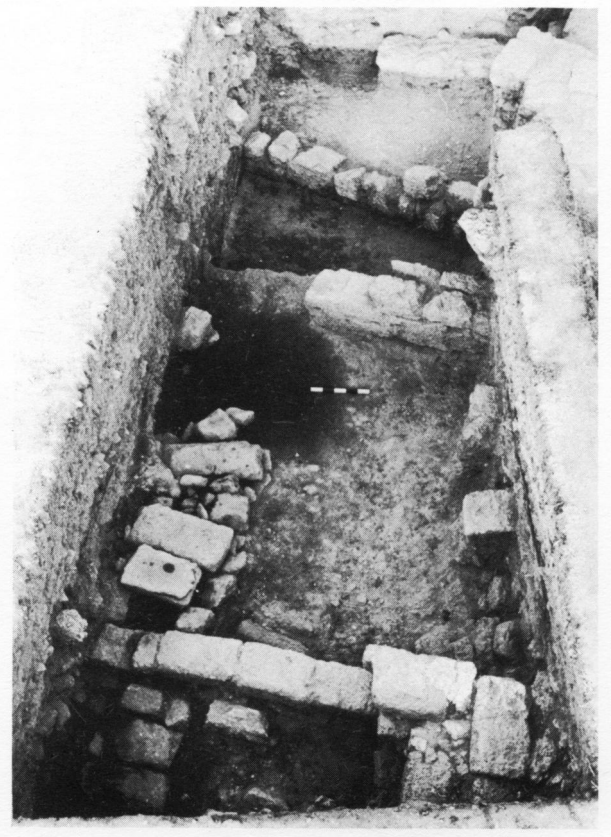
(L. 37) was exposed here at +6.20. Below the floor were found the capstones of a channel that continues under the adjacent street (L. 25). Different phases were not observed in the small section excavated.

The Street

Alongside the eastern wall of the northern and southern buildings ran a street that varied from 2.8–3.0 m. in width. It was surfaced with beaten chalk (Ill. 16) and, near the entrances to the buildings, with a few stone slabs (L. 101). At the southern end of the excavated area (in Square D/8), we noticed various street surfaces (L. 56 at +6.20; L. 25 at +5.85; L. 62 at +5.50) which may correspond to the different phases of the stratum, and a water channel associated with the building on the eastern side of the street (Ill. 19). Street levels farther north (in Square E/8) were unclear, probably due to destruction (or looting) of water installations L. 160 and L. 93.

Ill. 18. Cistern L93, facing east.

Cisterns L. 160 and L. 93 were exposed below street level. L. 160 is 2.5 x 0.6 m. and 1.5-2.0 m. deep (Ill. 17). L. 93, only partially exposed, measures 2.0 m.



Ill. 19. In the center, section of Stratum 3 street (facing west). Building L37 (in the foreground) and the covered channel belong to Stratum 2.

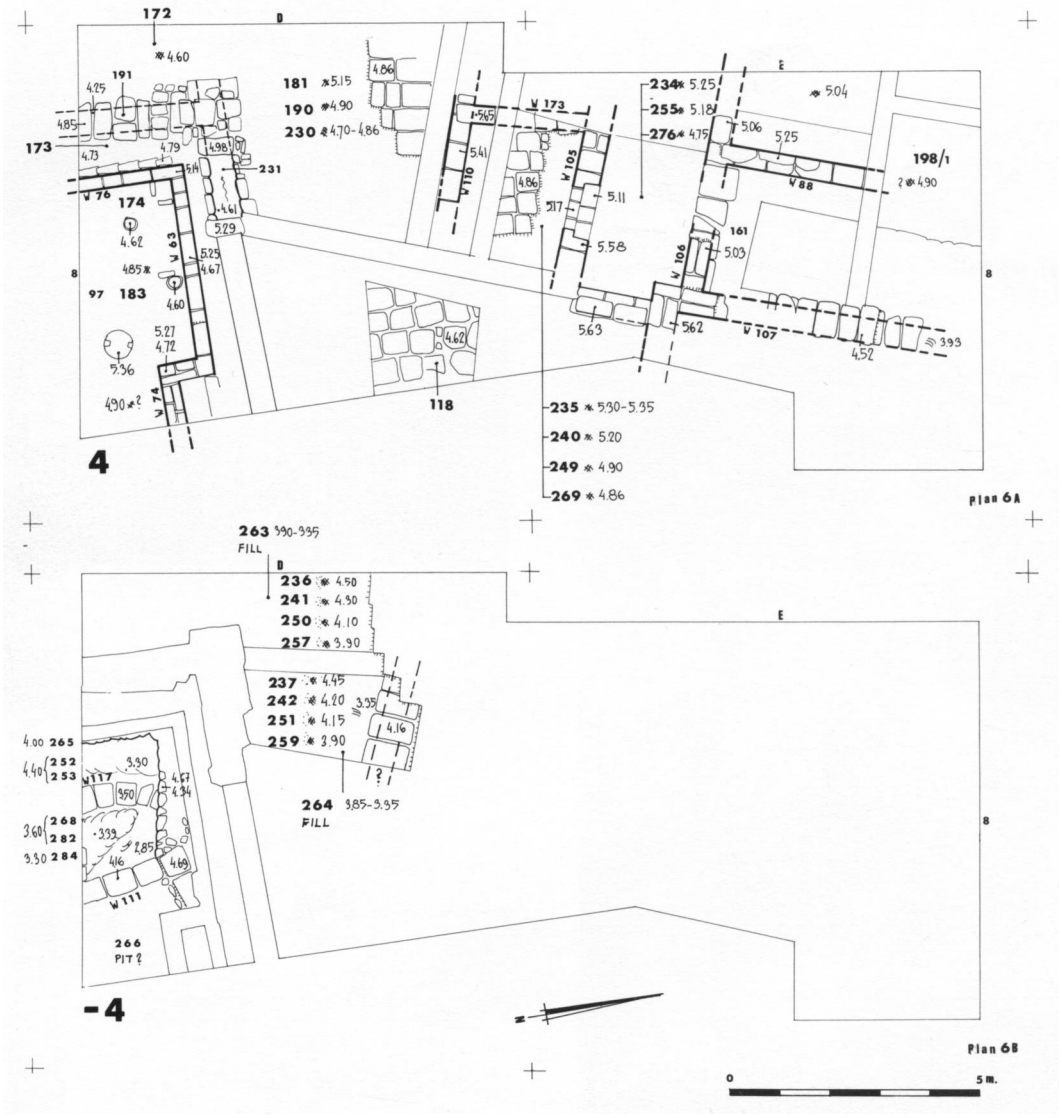
wide and about 2.5 m. deep; it was originally covered by a barrel-vaulted ceiling (Ill. 18). Although these two cisterns are below street level, we do not know whether the street continued above them or whether it turned eastwards before reaching them. There is also no evidence concerning their function and whether or not they were connected in some way with the northern building.

Stratum 3 (Plan 5b)

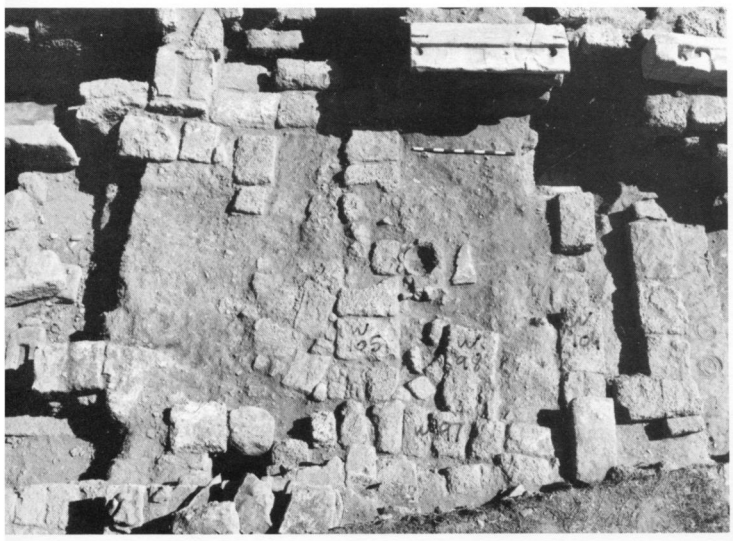
In contrast to the relatively well-preserved remains of Stratum 2, those of Stratum 3 are fragmentary and ill-defined, making interpretation difficult. Generally speaking, only one phase was observed, although in places a sub-phase could be distinguished. Despite the difficulty of interpreting the sketchy remains, it appears that the same basic north-south street flanked by buildings (at least on its western side) also existed during Stratum 3.

Buildings West of the Street

Only the fragments of a few walls were found, mostly in Square E/8, and it seems that much of Stratum 3 was destroyed in the course of building Stratum 2 and its cisterns. Among the meager remains was the juncture of walls W97 and W98, found beneath room L. 159. Room L. 224, adjacent to these walls, had a poor stone pavement into which the top of wall W105 from Stratum 4 was incorporated (Ill. 20). The remains of an oven were found against wall W98, and beside it was an installation consisting of the bottom of a jar encircled by small stones. South of wall W98 we found the remains of a beaten earth floor (L. 166 and L. 199 at +5.50), which belonged to a room that was probably bounded on its south by wall W71, on its west by wall W97, and on the east by a hypothetical wall that separated the building from the street (L. 113). To the north, below L. 238 of phase 2c, we exposed a *kurkar* floor (L. 248 at +5.65) belonging to Stratum 3 (Ill. 21).

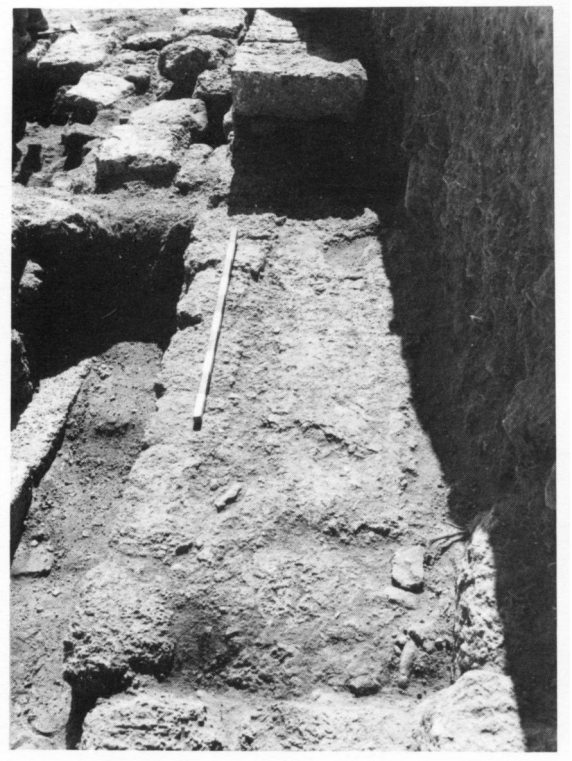


Plan 6. Plans of Squares D-E/8: a. Stratum 4; b. Strata earlier than Stratum 4.



Ill. 20. Remains of Stratum 3 under the northern dwelling structure of Stratum 2, facing east.

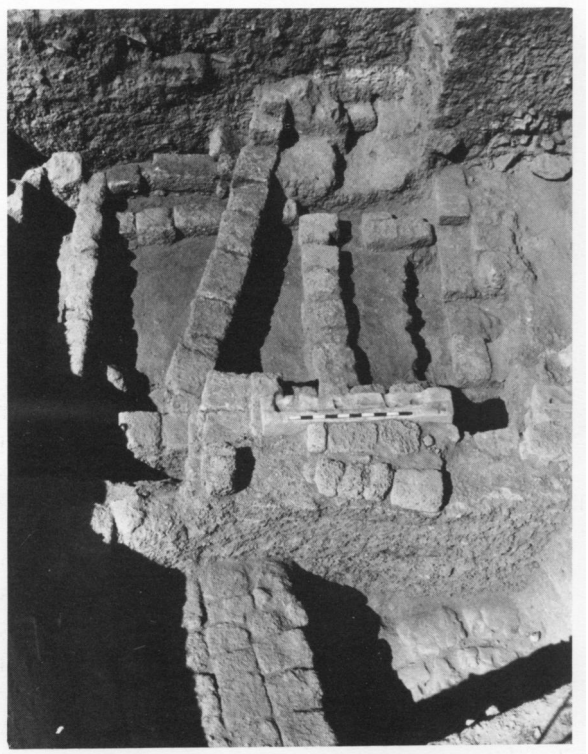
A clearer picture of Stratum 3 was obtained in Square D/8. Here we exposed the four walls of room L. 155 (2.7 x 2.2 m.), and faint traces of a floor appeared at +5.45. The walls were built directly onto a *kurkar* floor of Stratum 4 (Ill. 23). Remains from Stratum 3 were also observed to the south of room L. 155, notably a floor at +5.40 (L. 156). Here also were found the remains of wall W30, which was traced for a length of 5 m. At its northern end this wall runs beneath wall W52 and was thus probably built at a slightly earlier phase.



Ill. 21. Floor of room L248 (Stratum 3) under rooms L50 and L238 (Stratum 2), facing south.

The Street (Loci 81, 189, and 113)

Clear remains of a street were exposed about 40-50 cm. below the floor level of phase 2b. Part of it, L. 113, was paved with sandstone slabs sloping slightly from north to south. The layers of gravel and sherds covering the street are typical of the accumulations found on streets everywhere (Ills. 22, 24). South of the paved area and somewhat lower (at +5.45–+5.50), *kurkar* floor levels (L. 81 and L. 189) were uncovered. These may have constituted an earlier phase of the street, if not a bedding for slabs that were subsequently removed.

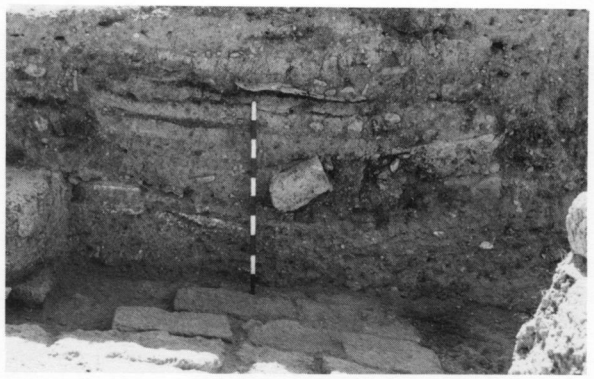


Ill. 22. Remains of walls of Stratum 3 in Squares D-E/8 under Stratum 2, facing west. In the foreground to the left are remains of the pavement of the street of Stratum 3 (L113), and to the right the pavement of the Stratum 4 road (L118).

Stratum 4 (Plan 6a)

The remains of Stratum 4 are somewhat more substantial than those of Stratum 3, and up to four

Ill. 23. Room L155, looking towards the northwest.



Ill. 24. Stone pavement of the Stratum 3 street (L113), facing south. Floor levels of Stratum 2 may be seen in the section, over *c.* 40 cm. of accumulation.

Ill. 25. Road of Stratum 4 in Square D/8, facing north. Note remains of the original stone pavement (L230) left of the scale. Water channel L191-L231 is adjacent to the corner of building L97 (lower right).

phases were observed in some places. Whereas in Strata 2 and 3 houses were the main elements in Squares D-E/8, in Stratum 4 the dominant feature was a road running east-west.

The Road

Loci 118, 230, and 269 are parts of a single pavement made of rectangular slabs carefully laid in 40-50 cm. wide rows, all oriented in the same direction. These slabs were carved from a hard limestone and have been worn smooth from use (Ills. 22, 25). The paved roadway was covered by one or two *kurkar* levels (L. 249 at +4.90 and L. 240 at +5.20 above L. 269; L. 490 at +1.90 and L. 181 at+5.15 above L. 230). Either the original pavement was damaged here after long use, or perhaps the general level of the city was slowly rising. At L. 230 the pavement was preserved only in the middle of the road. Further south the slabs are missing and were replaced with a series of *kurkar* floors, the lowest one at +4.70 (Ill. 25). In Square D/8

Ill. 26. Building L97, surrounded by water channel L191-L231 and road levels of Strata 4 and 5, facing north.

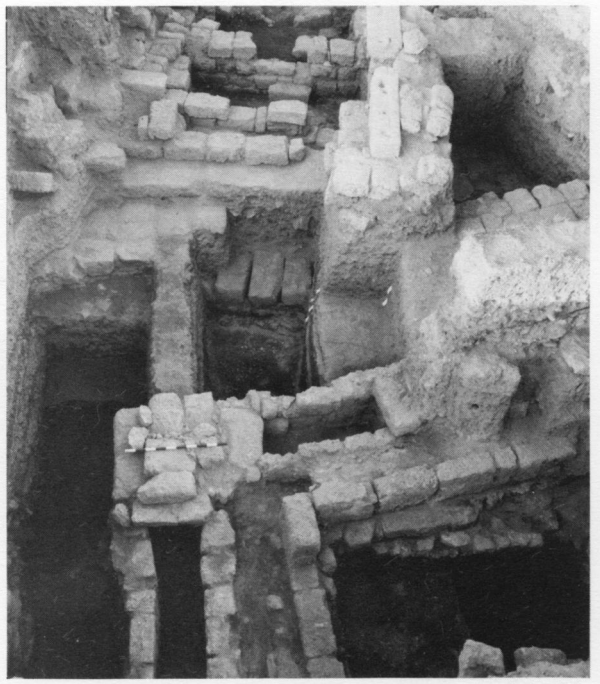
Ill. 27. A cooking pot set into the floor of building L97.

Ill. 28. Remains of buildings of Stratum 4 in Square E/8, with room L203 in the center, facing east.

Ill. 29. Room L234 (left) and room L235 (right) in phase 4a, facing east.

this thoroughfare appears to meet a secondary road (L. 172) coming from the south.

South of the road, north of and parallel to wall W63, was channel L. 231, 50 cm. wide and 50 cm. deep, covered with capstones. To the west a similar channel (L. 191) entered from the south and along wall W76, at a distance of 75 cm. Apparently these channels originally met in a "T" junction, but the westward continuation of L. 231 completely disappears 40 cm. beyond the junction. The channel probably belonged to the original phase of the road (or roads) and functioned throughout Stratum 4. Five earthenware pipes joined end to end horizontally were found along the western side of wall W76; their function is not clear (Ill. 25).



Ill. 30. Square D/8 at the end of the excavations, facing north.

Building L. 97

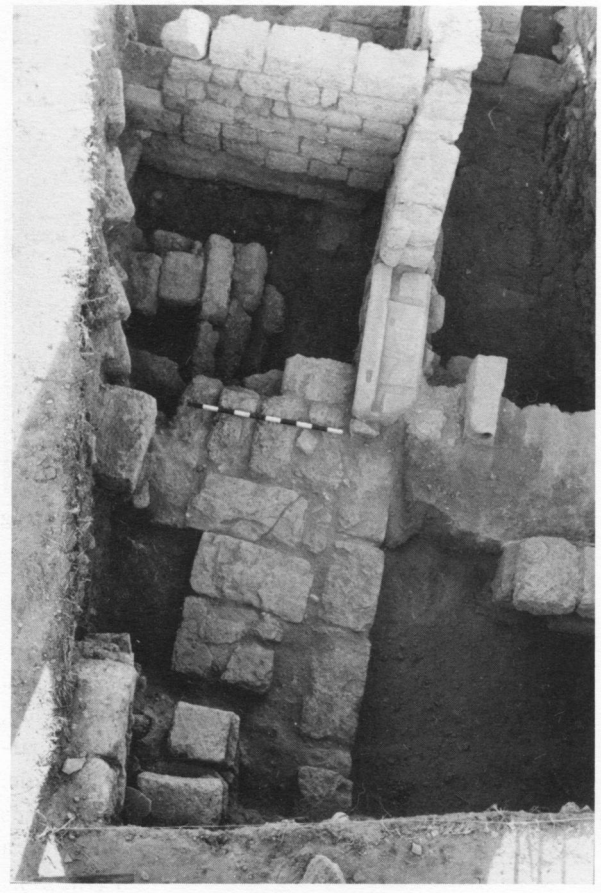
South of the road was the northern part of building L. 97 whose outer wall W63 was only 25 cm. wide, exceptionally narrow for Stratum 4. The room partially exposed was at least 5 m. long and 2.5 m. wide. Several installations found here suggest that this building was a workshop (Ill. 26); among these were a number of cooking pots set into the floor (Ill. 27).

Buildings North of the Road

The walls uncovered in the small areas excavated north of the road seem to belong to different stages,

Ill. 31. Remains earlier than building L97, facing west.

Ill. 33. Room L229 facing east, towards courtyard L44. →



Ill. 32. The northern part of courtyard L44 and the rooms to its north, facing west. Note barrel-vaulted cistern below floor level (above left end of meter stick).

some of which may simply be technical. The main structure appears to be room L. 161, enclosed by walls W107 (50 cm. thick), W88, and W106 (each 45 cm. thick); very little of the room remains due to the building operations in Strata 3 and 2. Room L. 276 (at +4.75), which was added on the south (Ill. 28), was bounded by wall W105 which seems to have had a doorway onto the road (Ill. 29). We cannot say whether this wall was built together with the road or at a later stage, when the paving was already out of use, because the paving slabs immediately in front of

wall W105 are missing, probably due to later disturbances. There were later floors above room L. 276 (L. 255 at +5.18; L. 234 at +5.25). Wall W110 was probably built in the last phase, and another room was added on to the south, L. 240 with a floor at +5.20 (and a later floor, L. 235 at +5.35), encroaching upon the road.

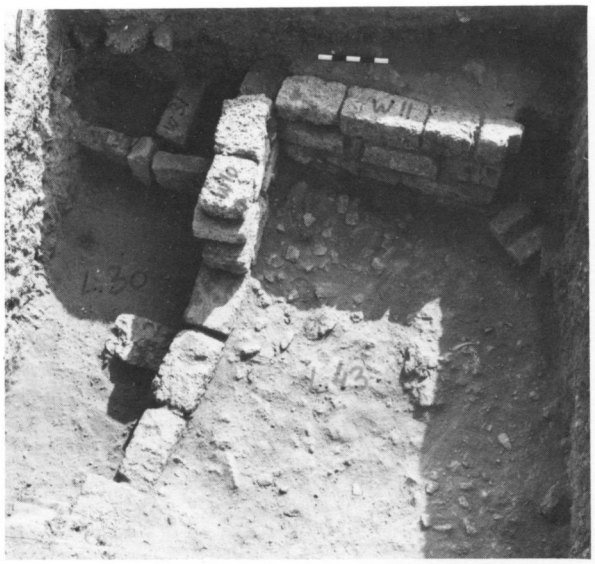
Earlier Strata (Plan 6b)

We excavated beneath Stratum 4 in several limited areas in Square D/8, below road level L. 230 and under the floor of building L. 97.

Earlier Street Levels

Four *kurkar* surfaces were found below the level of the paved road, the lowest one built on top of a fill laid directly on the natural *kurkar* bedrock. Their levels are as follows:

Western Section	Eastern Section
L. 236 at +4.55	L. 237 at +4.45
L. 241 at +4.30	L. 242 at +4.20
L. 250 at +4.10	L. 251 at +4.15
L. 257 at +3.90	L. 258 at +3.90



Ill. 34. Room L43 (in phase 2a?), facing east.

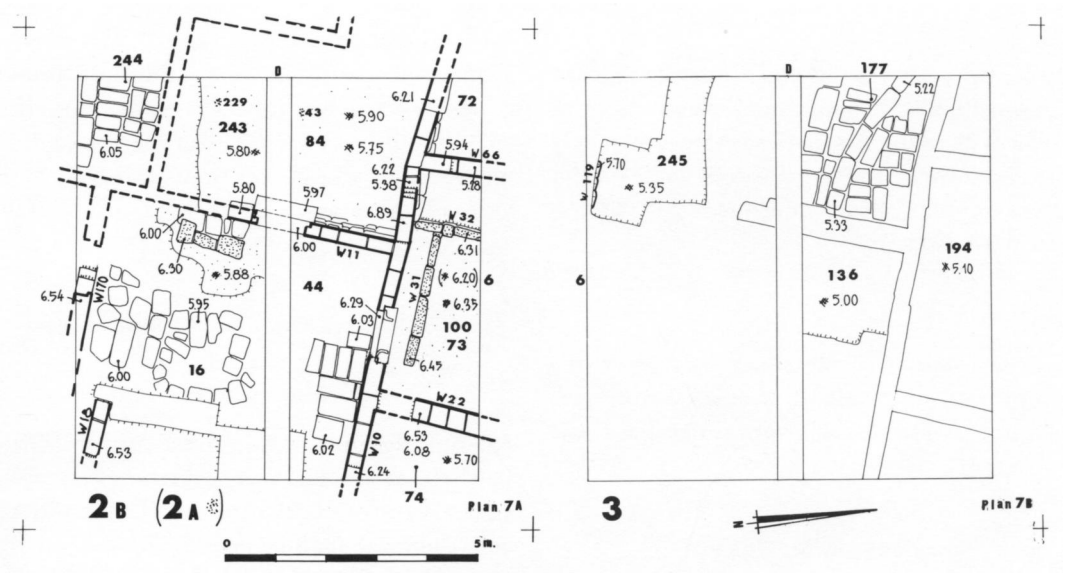
Below a section of floor L. 242 (the second level below the paved street) we uncovered part of a water channel 90 cm. wide, covered with rectangular stone plates and running from east to west. This channel cut through the two earlier levels and was dug partially into bedrock (Ill. 30). Since the composition of these *kurkar* surfaces and the accumulation between them is typical of streets or open public places, the Stratum 4 road was probably preceded by an earlier one with a similar orientation. We cannot at present relate the different street levels to any particular strata; this would require further excavation. However, the two uppermost surfaces below the paved road apparently belong to Stratum 5. The sherds in loci 263, 264, and 281 below the earliest street surface are typical of garbage dumps. This debris accumulated directly on bedrock at +3.30.

Ill. 35. To the left, rooms north of courtyard L44, facing east. To the right, room L84 in the foreground with the corner of room L44 behind.

Ill. 36. Stone pavement of Locus 177, facing east.

Remains below L. 97

Remnants of two walls and floors were found between building L. 97 and bedrock, which was reached at +2.80– +3.30. Wall W111 divides this area into two, and probably belongs to Stratum 5, together with L. 266 to its east (at +4.20) and L. 265 to its west (at +4.00). An earlier floor (L. 268) appears below L. 265 at +3.60 (Stratum 6?). Wall W117 lies below this, and its foundations are cut into bedrock (Ill. 31).



Plan 7. Plans of Square E/6: a. Stratum 2; b. Stratum 3.

SQUARE E/6

(Supervised by A. Bardugo)

Practically no remains of Stratum 1 were recovered here, possibly because of extensive robbing and other disturbances.

Stratum 2 (Plan 7a)

Remains of this stratum covered most of the square, though they generally suffered from later disturbances. These remains appear to belong to a dwelling unit separate from that in Squares D-E/8 or that in Square E/5.

Loci 16 and 44

An area 5.7 m. long and at least 4 m. wide, which lacks partition walls and is reached through two major doorways (on the west and north), gives the impression of being a central courtyard. Although the different parts of the floor exhibit a variety of methods of execution—fairly regular sandstone blocks, irregular blocks, plaster surface—this may simply represent the ultimate phase of the building. The pavement blocks at the northern end of L. 44, alongside W10 (Ill. 32), are probably remnants of the original floor, since they are the most regular. The area in the center (L. 16) was very disturbed. In the west, three stones parallel to W11 (Ill. 33) are a little higher (at +6.30) and possibly represent a later stage (phase 2a?). In the northwest corner, where the floor is missing, the top of a barrel-vaulted cistern was observed (Ill. 32), thus substantiating the argument that this area was an open courtyard.

Locus 244

In the southwest corner of the square a small part of a floor paved with fairly regular sandstone blocks was uncovered. The walls which bounded this floor on the north and east sides were robbed and could be projected by following the robber trenches.

Loci 84 and 243

The northern and eastern boundaries of this room, approximately 4.7 x 3.5 m. in size, are clear. On the south it would have been bordered by the projected wall mentioned above, and on the west it was probably bounded by rooms L. 68 and L. 66 in Square E/5 (see below). The entrance to this room from the courtyard had a threshold carved from a marble column. Two floors of decayed plaster were observed, the lower one (L. 84 and L. 243) at +5.75 (phase 2b?) and the upper one (L. 43 and L. 229) at +5.90 (phase 2a?; Ill. 34).

Locus 100

Only a narrow strip of the area to the north of wall W10 (i.e., north of loci 84 and 44) was excavated. The section bounded by wall W22 (see below) on the east and apparently by wall W66 on the west is part of a large room with an entrance from courtyard L. 44, whose threshold was also carved from a marble column (Ill. 32). A lime-plaster floor was preserved (at +6.20) over the eastern part of this large room. W31 and W32, the narrow walls built on top of this floor, corresponded with a floor 15 cm. higher; this seems to be a later installation, possibly a silo rather than division walls, belonging to phase 2a (L. 73 and Ill. 35).

Locus 74
Only the southwest corner of this room was exposed east of room L. 100. It had a thick plaster floor at +5.70. Wall W22 to the west is 45 cm. thick, relatively wide for this stratum, and has traces of white plaster with decorative impressions in a zigzag pattern preserved on both faces.

Locus 72
The northwest corner of the square was very disturbed, and no floor levels of Stratum 2 were preserved on either side of wall W66, which itself was heavily robbed.

Stratum 3 (Plan 7b)
Clear remains of this stratum were found in the few soundings made below the Stratum 2 floors.

Locus 177
Digging beneath the floor of Locus 84 in an area roughly 2 x 3 m., we reached a stone pavement at *c.* +5.20 that did not relate to walls W10 or W11. The pavement included a row of slabs laid lengthwise in a gentle curve, indicating that it might have been part of a street or courtyard (Ill. 36).

Loci 194 and 245
While digging into the robber trenches around room L. 244, we reached a beaten earth floor (L. 245 at +5.35) abutting wall W119 in the southern balk. A small section of a *kurkar* floor (L. 194 at +5.10) was exposed under room L. 100.

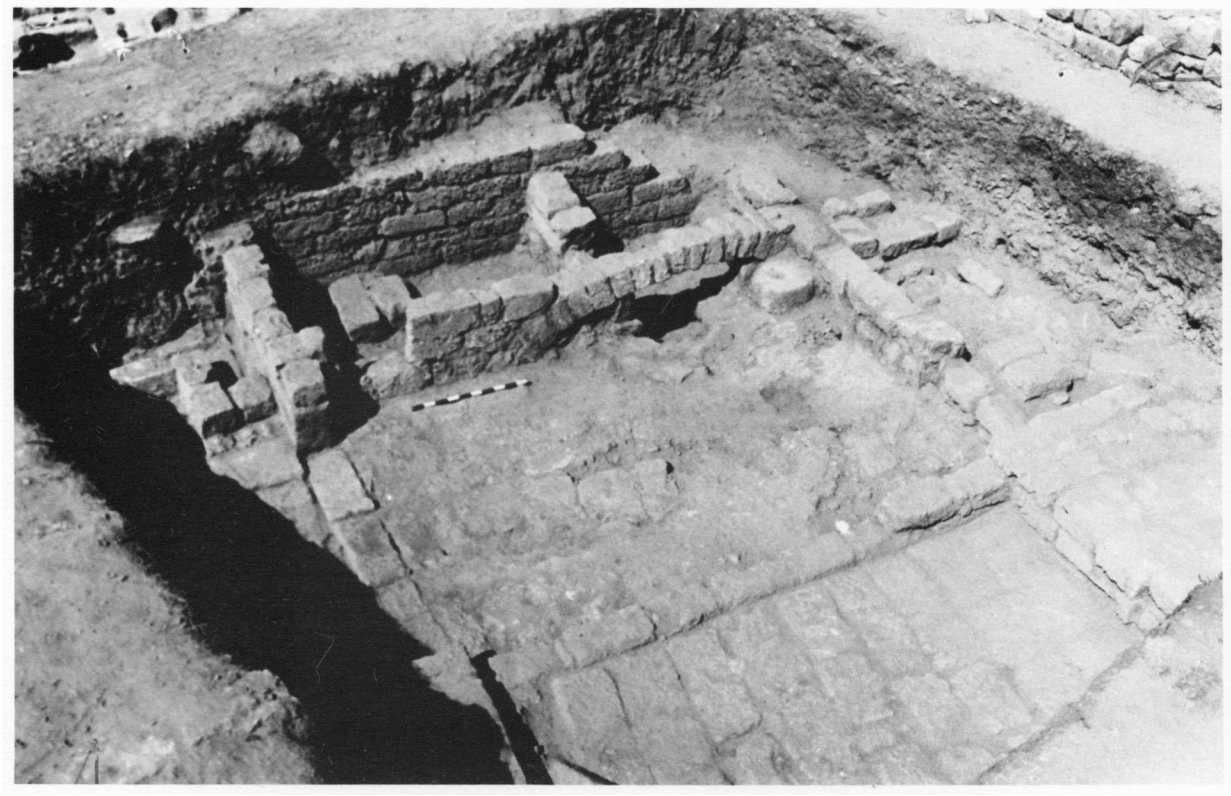
SQUARE E/5
(Supervised by A. Bardugo)

Stratum 1 (Plan 8a)

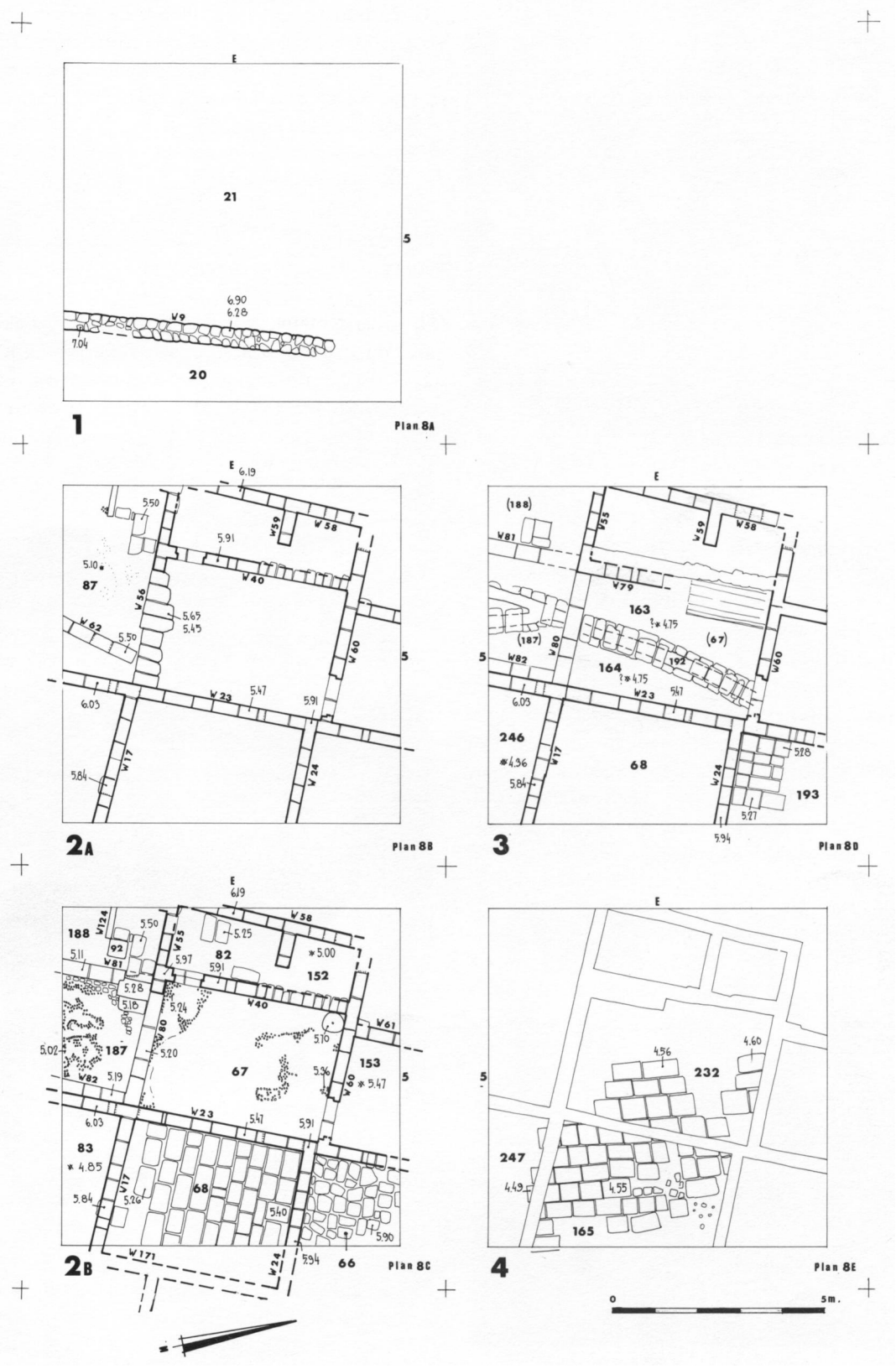
The only remains of Stratum 1 consist of fieldstone wall W9, 45 cm. wide, preserved over a length of 6.5 m. No floors or installations associated with this wall were found, though beneath it, at +6.15, there was a beaten earth floor (L. 20, L. 21) that perhaps belonged to an earlier phase of Stratum 1.

Stratum 2 (Plans 8b-c)

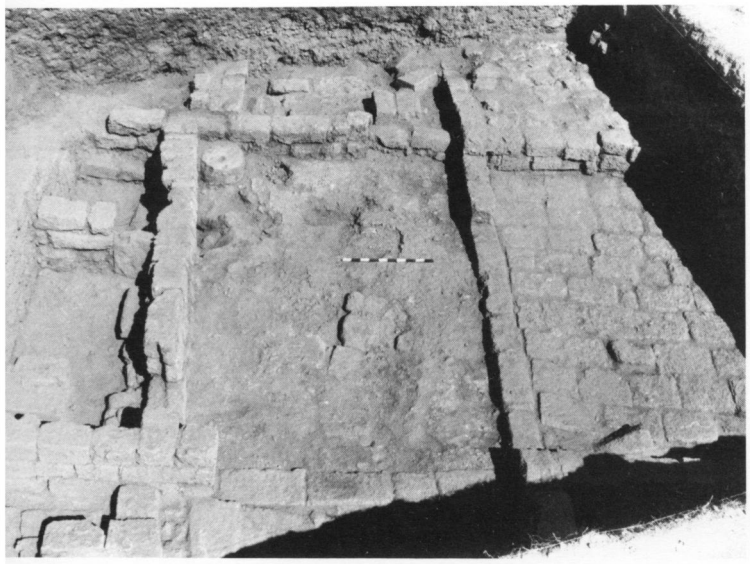
Remains of this stratum cover the entire square (Ills. 37, 38). It is possible that either all these remains belong to one dwelling unit or, alternatively, that wall W23 is a common wall between two buildings, with the eastern one linked to the remains in Square E/6 (see above).



Ill. 37. Remains of Stratum 2 in Square E/5, facing northwest.

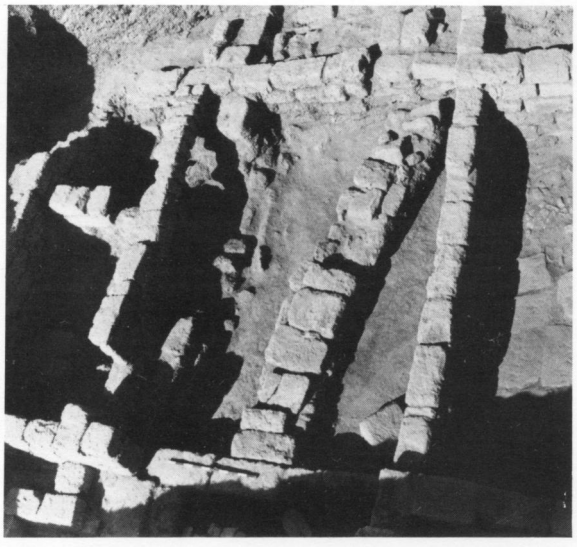


Plan 8. Plans of Square E/5: a. Stratum 1; b. Stratum 2a; c. Stratum 2b; d. Stratum 3; e. Stratum 4.



Ill. 38. Remains of Stratum 2 in Square E/5, facing north. Meter stick rests on top of channel.

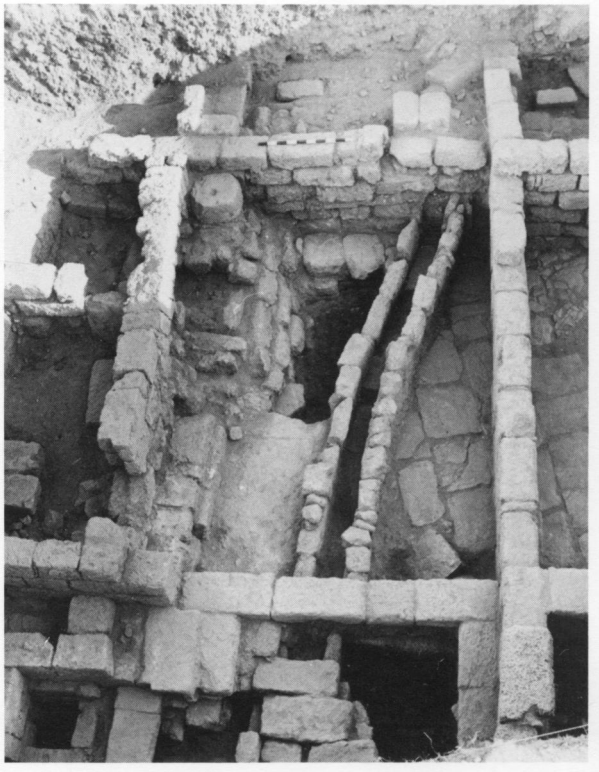
A few phases were observed in some places, although in most of the loci only one floor was exposed. It is therefore difficult to divide the remains into definite phases. Theoretically, some of what is attributed to Stratum 2 (phase 2b or 2c) could have been built already in Stratum 3 (see below). On the other hand, it is hard to determine whether some of the late raised walls exposed here and in L. 87 (see below) belong to phase 2a or to Stratum 1. As in Squares D-E/8, the Stratum 2 walls are generally narrow, between 25 and 30 cm. thick, and are constructed from worked sandstone.



Ill. 39. Courtyard L67, after removal of its floor, showing the covered water channel beneath, facing north.

Locus 67

This room or courtyard (4.4 x 3.1 m.) uncovered in the center of the square (Ill. 40) might have been the central focus of the building. The floor was originally paved with a rough white mosaic (each tessera about 1.5 cm.)[3] which was preserved only in small areas. A column drum was standing on the floor in the northwest corner of the room (Ill. 37). Beneath the entire length of the floor ran a water (or sewage?) channel (L. 192), 25-30 cm. wide and 40 cm. deep, covered with stone slabs (Plan 8c; Ills. 38-40). The floor sloped slightly from north to south (from +5.35 to +5.20), but as we found no connection between it and the channel below (or any other point of drainage), we cannot be certain that this area was an open courtyard. Wall W80 (35 cm. wide) to the south of



Ill. 40. Channel beneath courtyard L67, after removal of its cover slabs, facing north. Note pavement of the Stratum 4 road beneath (L232) and the top of a barrel-vaulted ceiling (covering a water cistern) at the courtyard's northwest corner.

L. 67 might have served as the threshold of a wide opening that perhaps connected L. 67 with L. 87. Wall W56, built above wall W80 (Ill. 41), may have served as a later threshold or partition wall. No floor

3. This floor theoretically could also belong to Stratum 5.

higher than the rough mosaic one was observed, but one presumably had existed at about +5.50. These upper-level remains belong either to phase 2a or to an earlier phase of Stratum 1.

Loci 87, 187, and 188

South of L. 67 part of room L. 187 was exposed, with a section of room L. 188 attached to it to the west. These two rooms were combined (either in phase 2b or 2a) into one room (L. 87). Locus 187 was bounded by wall W23 on the east. Wall W82 alongside it was either a bench or a remnant from Stratum 3 integrated into the floor. On the north the room was delimited by the presumed threshold W80, and to the west it was bounded either by wall W81 or by a now missing southward continuation of wall W40, in which case wall W81 would have been the counterpart of wall W82. Remains of a mosaic floor were exposed at +5.00. Although it was heavily repaired, patches of the original simple pattern of red and black circles were still in place (Ill. 42). This floor was later repaired with small slabs of marble. Beneath this floor was the continuation of channel L. 192, here with an outlet running at an angle towards the southeast (Plan 8c; Ill. 43).

Two steps over the northern end of W81 led to a narrow passage between wall W55 and a narrow wall or balustrade, W124. Adjacent to the passage, the square entrance to a cistern (L. 92) was revealed (Ill. 41). This cistern has not yet been cleared; nor was L. 188 completely excavated.

Locus 87 is a combination of L. 187 and L. 188. Both rooms were covered by a single rough plaster floor at +5.10 (Ill. 41), probably the bedding for a mosaic. Sometime later (phase 2a or Stratum 1) wall W62 was built in the eastern side of room L. 87, but not parallel to W23 (Ill. 41).

Locus 83

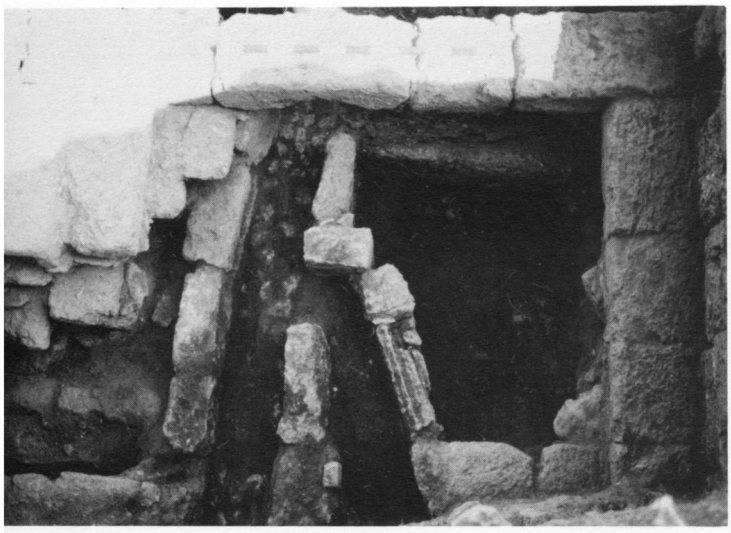
Locus 83 had a beaten earth floor at +4.85, which was partially preserved. Only some 3.2 m. of the northern part of this room were uncovered.

Locus 68

Most of this room (4.1 x 3.2 m.) was uncovered. It had a well-built floor made of large rectangular sandstone blocks (Ill. 38) up to 40 x 80 cm. in size, and sloped down from +5.40 in the north to +5.26 in the south. This area may also have been a courtyard. A long section of wall W23 was preserved to a level only a little higher than the adjacent floors. Since we do not even know if a doorway connected loci L. 68 and L.

Ill. 41. Threshold W56 between courtyard L67 and room L187, facing north. Note square entrance to cistern L92.

Ill. 42. Remains of the mosaic floor of room L187, facing west. Later repair with small marble slabs next to W81.



Ill. 43. Water channels under room L187, facing north.

67, it is not known whether room L. 68 related to the building west of W23 or to the one to its east (Ill. 37).

Locus 66
Only the southwestern corner of this room was exposed. A floor of irregular stone slabs was found at +5.90 and was later repaired with plaster, traces of which were found about 10 cm. higher. An earlier floor, L.193 (Plan 8c), probably belongs to Stratum 3 rather than to an earlier phase of Stratum 2.

Loci 82 and 152
Originally perhaps one room measuring 4.5 x 1.3 m.,

Ill. 44. Pavement in locus L193 of Stratum 3, facing west.

the area was later subdivided into room L. 82 in the south (2.5 x 1.3 m.) and room L. 152 in the north (1.6 x 1.3 m.). Both rooms had floors of beaten earth. The area was entered from L. 67 into L. 82. Room L. 152 was built above a barrel-vaulted water cistern (not yet exposed) that may have been built in Stratum 3 (vaulting visible on Ill. 40). The cistern, which partially extends beneath L. 67, may have remained in use in Stratum 2. The entrance to this cistern was not found. Wall W40, built over the cistern, had a shallow relieving arch either to take pressure off the cistern or to prevent the wall from sinking (Ill. 37).

Locus 153
This room (2.65 m. wide) was only partially excavated; it was connected to L. 67 by a doorway in wall W60. The floor of beaten earth at +5.50 covered another barrel-vaulted water cistern (not yet exposed).

Stratum 3 (Plan 8d)

Strata 2 and 3 are very similar. Although we cannot be certain, it seems that some of the walls and perhaps even some of the floors of Stratum 2 had already been constructed in Stratum 3.

Locus 67
No earlier floors were exposed beneath the mosaic floor and over the paved street of Stratum 4 (see below). Although a beaten earth floor was discerned here at +4.75 (L. 163 and L. 164), it was adjacent to channel L. 192 and probably should be regarded as a make-up for the floor. The mosaic floor was probably laid in Stratum 2, but channel L. 192 could have been installed already in Stratum 3. Wall W79, which lay below the floor adjacent to wall W40 (Ill. 40), apparently delimited L. 67 in Stratum 3. As noted, the cistern below wall W40 may also belong to Stratum 3. Walls W60, W23, and W80 were perhaps already erected in Stratum 3 as well.

Locus 187
As mentioned above, channel L. 92, which continues here, could have been constructed already in Stratum 3. Walls W82, W80, and W81 seem to have been built together in Stratum 3, either as walls or as benches and a threshold (W80). The decorated mosaic floor could theoretically also belong to this stratum.

Locus 188
No clear evidence of Stratum 3 was found here. Cis-

Ill. 45. The pavement of Stratum 4 (L165) below room L68 of Strata 2-3, facing west.

tern L. 92 was built either in Stratum 3 or in Stratum 2; only further excavations can clarify this situation.

Locus 68

The floor of this room (or courtyard) apparently remained unchanged between Strata 2 and 3.

Locus 193

A pavement of rectangular sandstone blocks exposed at +5.27 (Ill. 44), about 60 cm. below the Stratum 2 floor of L. 66, most likely belongs to Stratum 3. The floor here is slightly lower than the adjacent section of the floor of room L. 68, which persisted in both Strata 3 and 2.

Locus 246

This whole area is very disturbed, but a rough stone floor at +4.63 may belong to Stratum 3.

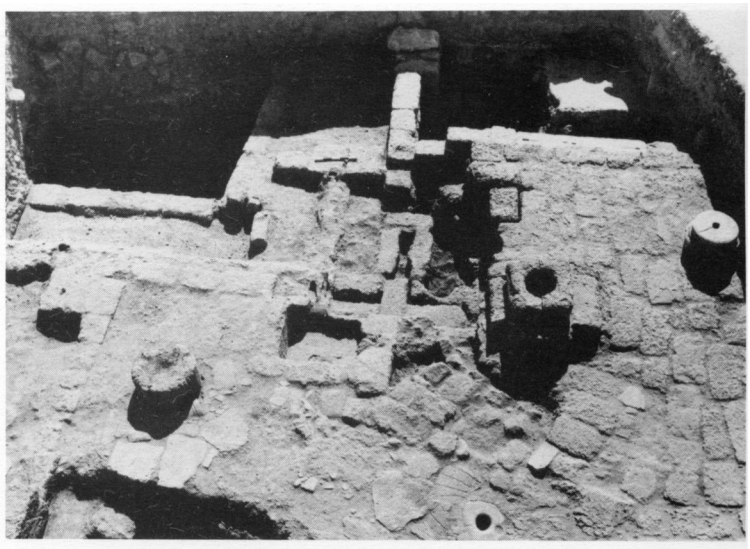
Stratum 4 (Plan 8e)

Below the floors of three of the rooms of Strata 2-3, the paved street of Stratum 4 was reached: L. 232 under L. 67 (Ill. 40), L. 165 under L. 68 (Ill. 45), and L. 247 under L. 246. The rows of paving vary in width from 35 to 50 cm., the lengths of the stones from 40 to 80 cm. The flagstones are identical to those in Squares D-E/8, and there is no doubt that they belonged to the same street. The flagstones are missing in the western part of L. 232, probably as a result of the construction of the water cistern (below W40) here. They are also mostly lacking in L. 247 (below L. 246), but this might indicate that the edge of the street was near here. While most of the flagstones remain intact in L. 165, evidence of repairs is also present (Ill. 45). A trapezoid capital rested on these flagstones near the eastern balk (Ill. 45). In contrast to the street in Squares D-E/8 and E/4, however, here there were no later *kurkar* surfaces, so it is not known whether this area of the street continued to function throughout Stratum 4. In the western area of L. 232, where the flagstones were missing, we dug below street level. Unfortunately, this area was badly disturbed, and only a beaten floor at +4.14 was discerned.

SQUARE E/4
(Supervised by D. Stacey)

Stratum 1 (Plan 9a, upper section)

The uppermost stratum we encountered was a layer of small seashells, covering most of the area (L.10 at +6.35) to a depth of 20 cm. which may have served as a floor or the make-up of one. Below this (at +6.10) was a layer of lime and small stones (L. 24); it was



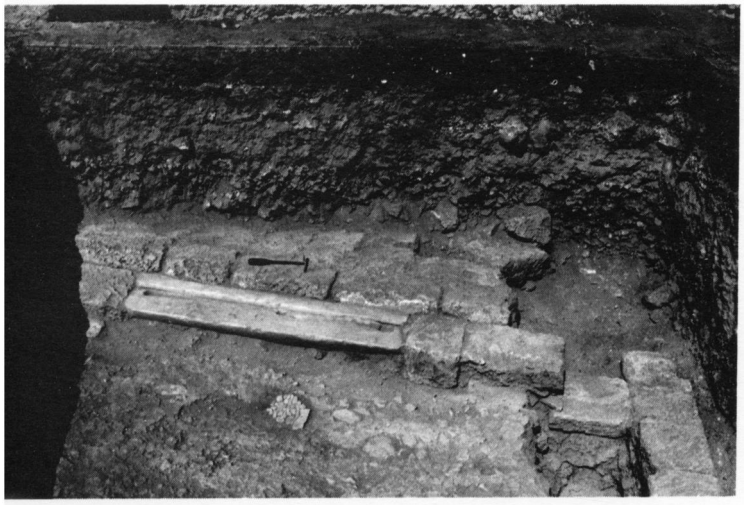
Ill. 46. Remains of Stratum 2 in Square E/4, looking south. Left column drum covers entrance to well of Strata 3-2.

Ill. 47. In the center, to the right, a settling pool in L34, facing east.

quite compact, at least in the east part of the area, and probably served as a floor. A segment of wall W8, built of flagstones, was exposed and probably corresponded with floor L. 24. Under this floor was a 60 cm.-deep layer of fieldstones and gravel, which probably represents the destruction layer sealing Stratum 2.

Stratum 2 (Plans 9b-d)

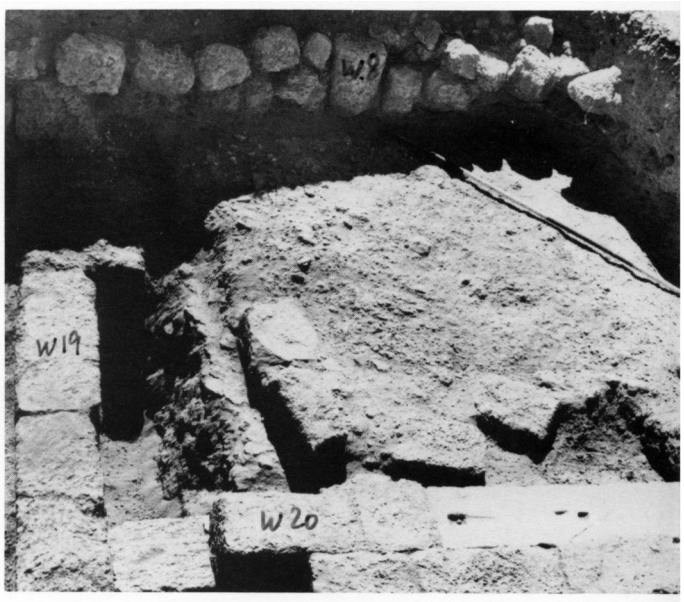
Remains from this period, which were found over nearly all of the square, appear to belong to a single dwelling unit (Ill. 46). In some places use phases within the life of the building could be discerned. Again, the walls here are generally narrow (25-30 cm. thick) and built of worked sandstone.



Ill. 48. Floor of Room L42 with remains of mosaic tesserae at +5.45, looking north.

Locus 33

Part of a substantial paved courtyard was uncovered in the northwest corner of the square. The western edge of this courtyard seems to be in Square E/3 (L. 91 there), making its length 7 m.; although its northern limit was not found, it was at least 5.50 m. wide. The floor of the courtyard consisted of rectangular slabs, generally laid in rows, and sloped fairly steeply from south to north. In the eastern part of the floor we detected repairs probably carried out in phase 2a, when this courtyard was united with the courtyard adjacent to it on the east (L. 34). Under this courtyard was cistern L. 125, with a barrel-vaulted stone ceiling, which was an integral part of the floor. Its dimensions are about 2.2 x 1.6 m. The round

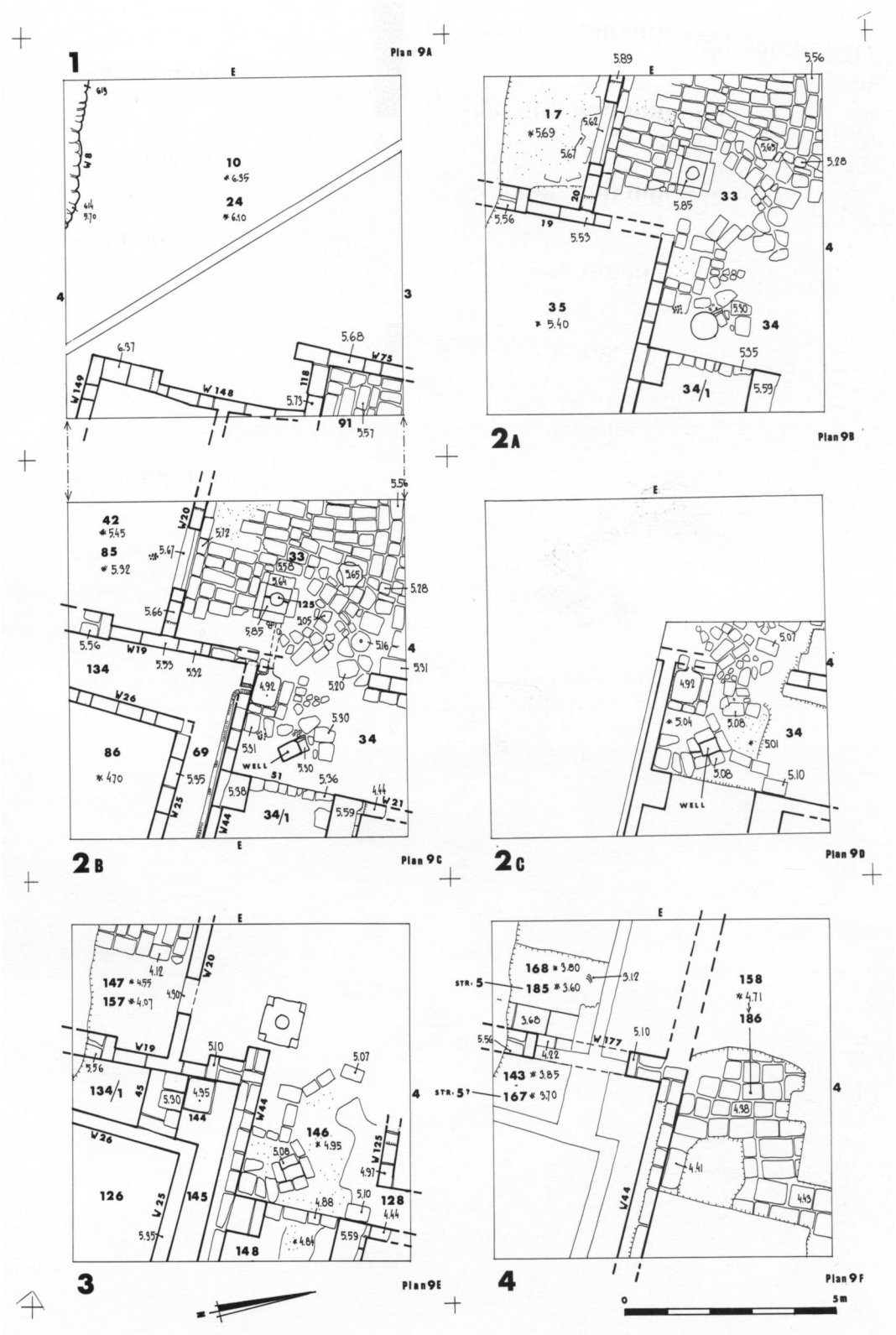


Ill. 49. Room L42 with floor level (L17) at +5.59, looking south.

entrance to the cistern (30 cm. across) had a square frame (60 x 60 cm.) that rose about 40 cm. above the courtyard floor. The cistern was fed by water collecting on the floor of the adjacent room (L. 34). It is uncertain where the water falling on courtyard L. 33 was directed, although we know that its eastern side was drained off by means of a channel that ran westward below the floor of the courtyard to an unknown destination. A reused capital, 45 cm. in diameter, through the center of which a 5 cm.-wide hole had been cut, served as the opening of the drain (Ill. 46, foreground).

Locus 34

This narrow courtyard, east of L. 33, is 2.7 m. wide; the northern end was disturbed by a later pit (or



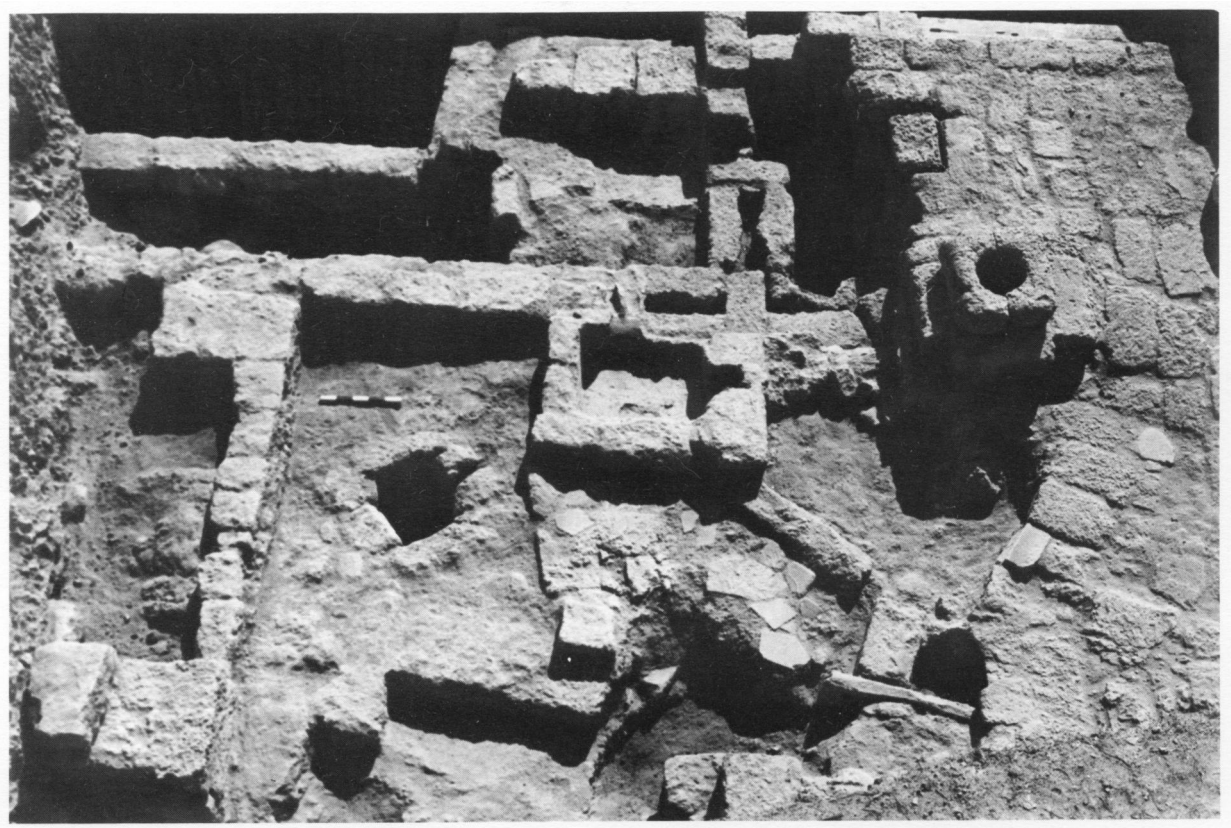
Plan 9. Plans of Square E/4: a. Stratum 1; b. Stratum 2a; c. Stratum 2b; d. Stratum 2c; e. Stratum 3; f. Stratum 4 and earlier strata.

robber trench). The paving was very poor, possibly as a result of many repairs (Ill. 46). In the southwest corner of this courtyard was a small lime-plastered pool 90 x 65 x 30 cm. deep (Ill. 47), connected with the cistern (L. 125) under courtyard L. 33 by a ceramic pipe. This installation seems to have been a settling pool, channeling rainwater from the surrounding roofs into the cistern. Two ceramic pipes penetrated wall W44 to the south in order to feed the pool. One of them continued along the southern face of wall W44, while the continuation of the second pipe is uncertain. This water installation probably belonged to the original phase of Stratum 2, for at a later stage (2a?) it was cancelled and paved over. Near the southeast corner of courtyard L. 34 we found the entrance to a well that had originally been dug in Stratum 3 but which remained in use during Stratum 2. The entrance to the well at +5.30 was integrated into the floor of courtyard L. 34; at its northern end a small (20 cm. wide) column fragment was positioned to facilitate the drawing of buckets; its surface was grooved by the friction of ropes. When first revealed, the mouth of this well was covered by a column drum 60 cm. in diameter (Ill. 46, left).

Both courtyards L. 33 and L. 34 were more or less one unit when we exposed them, but it appears that they were originally separated by a wall (W19) that was later dismantled (in phase 2b or 2a). The presence of the water installations in courtyard L. 34 and its poorly preserved floor might indicate that this was a service area. Two rectangular pilasters (90 x 50 cm.) flanked a 2 m. wide threshold at the eastern edge of courtyard L. 34. These pilasters could have framed an entrance or, alternatively, could have served as the base of a staircase. Since their function is uncertain, it cannot be determined whether the area to the east of these pilasters (L. 34/1) was part of courtyard L. 34 or one end of a separate unit which remains unexcavated.

Locus 42

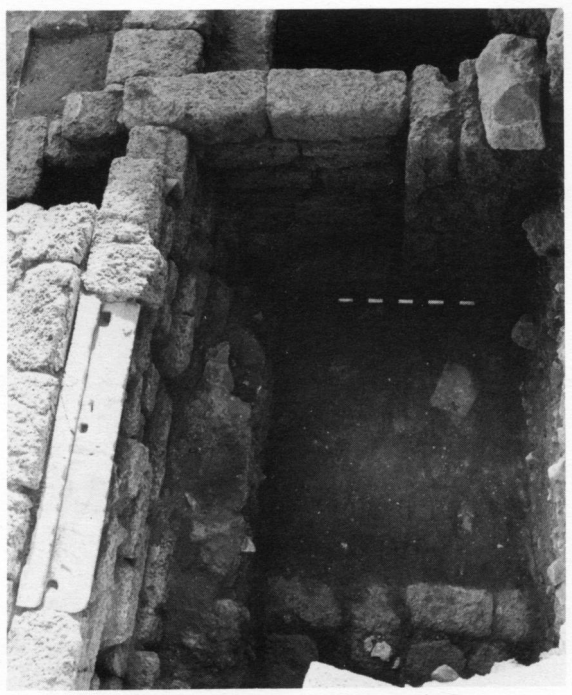
Part of a room whose northwestern corner was apparently discovered in Square E/3 (see below) was found in the southwest corner of Square E/4. The assumed dimensions are 5.5 x 2.9 m., with an entrance 1.3 m. wide leading from courtyard L. 33. The threshold here was also carved from a gray marble column. Three floor levels were observed. The lowest surface, +5.35 (L. 85), was either an earlier floor (probably from phase 2c) or a make-up for floor L. 42 (at +5.45). The latter was made of a rough lime mortar that originally served as the bedding for a



Ill. 50. Courtyard L146 (Stratum 3), looking south. Stone-lined opening of well below meter stick.

Ill. 51. Locus 147 under Loci 42 and 85 (Stratum 2), facing north.

mosaic floor at +5.45. A small remnant of this mosaic floor was exposed south of the marble threshold (Ill. 48). The floor level was raised again by 25 cm. (L. 17) when, probably in phase 2a, rough plaster (L. 17) was spread over ashlar stones that were laid or fell on the earlier floor (Ill. 49). These changes may indicate that the building underwent a period of destruction and reoccupation. The upper floor might even belong to



Ill. 52. Locus 157 under room L42 (Stratum 2), looking east.

an early phase of Stratum 1. It is worth mentioning that the thicker part of the eastern wall (W19) of this room originated in Stratum 4.

Loci 69, 86, and 134

The corner formed by walls W25 and W26 was uncovered in the southeastern part of the square (Ill. 46). A rough plaster floor, L. 86 at +4.70, probably represents phase 2b. To the north, in the narrow corridor between walls W25 and W44, we exposed a thick *kurkar* layer (L. 69), apparently the foundation of the phase 2b floor. Two ceramic pipes (see above, L. 34) were integrated into this *kurkar* layer, one parallel to W44 and the other starting beside wall W45. To the west of L. 86 was a second corridor (L. 134) bounded by walls W19, W26, and W45. An

Ill. 53. Settling pool (L144) adjacent to corner of walls W45 and W19, looking southwest (Stratum 3).

upper floor level of decayed plaster (L. 35 at +5.40), which covered loci 69, 86, and 134, probably belonged to phase 2a (or possibly to an early stage of Stratum 1).

Stratum 3 (Plan 9e)

Only a very fragmentary picture of Stratum 3 can be glimpsed in this area, but there is definite evidence of a level of occupation between Strata 4 and 2.

Locus 146

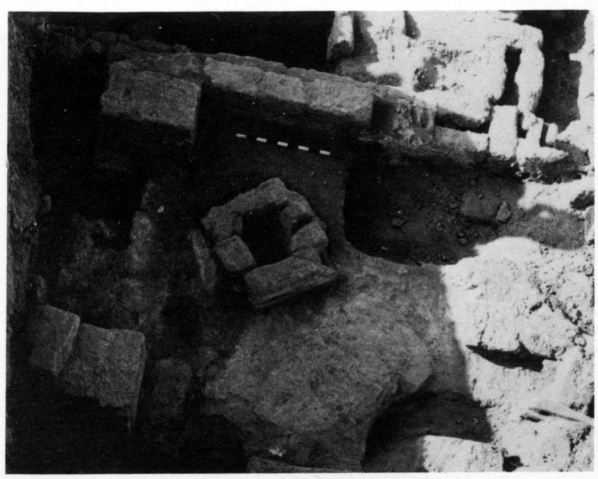
After removing the pavement of courtyard L. 34 we reached (at +4.95) an earlier floor level, probably also an open courtyard (Ill. 50). The boundaries to the south and east are the same as those of the Stratum 2 courtyard. However, it was bounded on the north by a new wall (W125), making it 3.2 m. wide. A doorway

Ill. 54. A section of the road of Stratum 4 (L186), facing south. The well belongs to Stratum 3.

led to the unexcavated area to the north (L. 128). The western extremity of this courtyard could not be determined, since we did not remove cistern L. 125 (whose construction almost certainly destroyed it in any case). The floor of this courtyard is of *kurkar* with some sandstone blocks integrated into it. The entrance to the well mentioned above was carefully integrated into this floor at +5.08. The upper part of the shaft (35 x 50 cm.) is lined with stone (Ill. 50), but the lower part was cut through the bedrock to the level of the water table.

Locus 148

In the area east of L. 146 (under L. 34/1) we exposed a *kurkar* floor 10 cm. lower than the floor of the adjacent courtyard (L. 146). The threshold between the pilasters was 50 cm. lower than the Stratum 2 threshold.



Ill. 55. A *kurkar* floor level (L158 at +4.71) above the Stratum 4 paved road (L186), facing south.

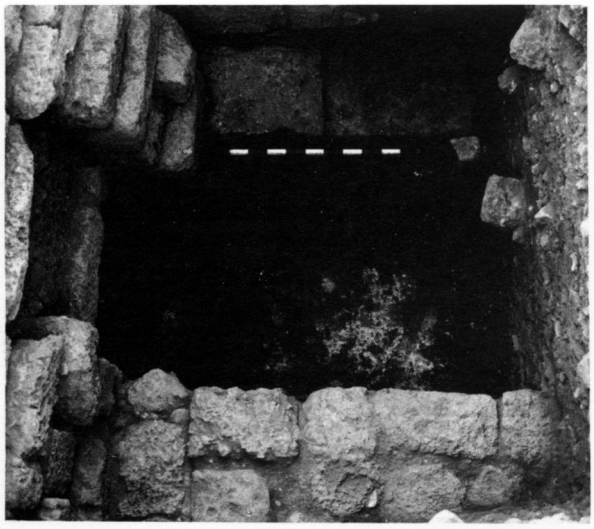
Loci 147 and 157

The known boundaries of this room are the same as those of L. 42 of Stratum 2 above it. The walls are integrated into the remains of the walls from Stratum 4 (Ill. 51). The entrance was from the north through an 80 cm. wide doorway. Two distinct floors were identified: the upper one, L. 147 at +4.55, was of beaten earth; and the lower one, L. 157 at +4.07, was paved with rectangular sandstone blocks to the west and composed of beaten earth at the eastern edge (Ill. 52). A silo encircled by stones, adjacent to wall W19 (Ill. 51), may belong to the upper floor.

Ill. 56. Lime plaster floor (L167 at +3.70), looking west.

Loci 126, 134/1, 144, and 145

No floor level was found below L. 86 in the corner walls W25 and W26. The accumulation beneath the floor of L. 86, at least down to +2.60, probably belongs to Stratum 3. The area seems to have been a cesspit, perhaps under a courtyard of this stratum. The floor levels found in L. 145 under corridor L. 69 and in L. 134/1 under corridor L. 134 are not clear. A small pool (L. 144), 60 x 90 cm. in size, located at the junction of W45 and W90 (Ill. 53), probably belongs to Stratum 3 and may have served a purpose similar to that of the pool found in L. 34 of Stratum 2.



Ill. 57. Floor L185 at +3.60, facing east.

Stratum 4 (Plan 9f)

Stratum 4 was reached in a few places in this square. The remains clearly indicate that the layout of the city in this period was totally different from that of Strata 2 and 3.

Locus 186

In an area of about 3 x 4 m., largely below courtyard L. 146, we reached at +4.40 a pavement made of hard limestone slabs (Ill. 54) that was part of the main road of Stratum 4, running east-west through all the excavated areas. The slabs here are laid in rows and abut wall W44 (55 cm. wide) which bounds the road to the south. A compact *kurkar* floor laid about 30 cm. higher covered this paved surface (L. 158; Ill. 55) and was similar to those discussed above in Squares E/8 and D/8. It was most likely a road surface belonging to a later phase of Stratum 4 (Ill. 55).

Locus 168

The corner of a large room (probably 5.4 x 4.5 m. in size) was only partially uncovered; its western extremity is in Square E/3. The northeastern corner of the room was found below courtyard L. 33 (Stratum 2). We excavated beneath L. 157 (of Stratum 3) and exposed a lime-plaster surface at +3.75. The wide entrance to this room (2.2 m.) from the east was subsequently blocked in Stratum 3. The raising of the threshold here to an elevation of +4.22 probably took place at the beginning of Stratum 3.

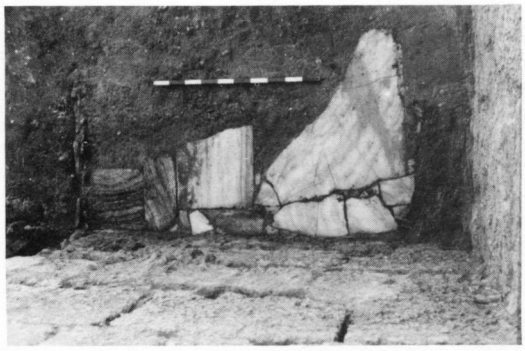
Ill. 58. Room L127 of Stratum 4, facing south.

Loci 143 and 167

A large room, equal in width to room L. 168 (4.80 m.), is of undetermined length. Two lime-plaster floors were found, L. 143 at +3.85 and L. 167 at +3.70 (Ill. 56).

Earlier Strata (Plan 9f)

The remains below the floor levels of Stratum 4 are fragmentary and provide no more than hints of the underlying structures. We enlarged the well shaft (in L. 146) to reveal three *kurkar* surfaces between the paved road and bedrock. These surfaces were separated by accumulations of gravel and sherds characteristic to streets.



Ill. 59. Pavement of marble slabs (reused) at the southeastern corner of room L127, facing west.

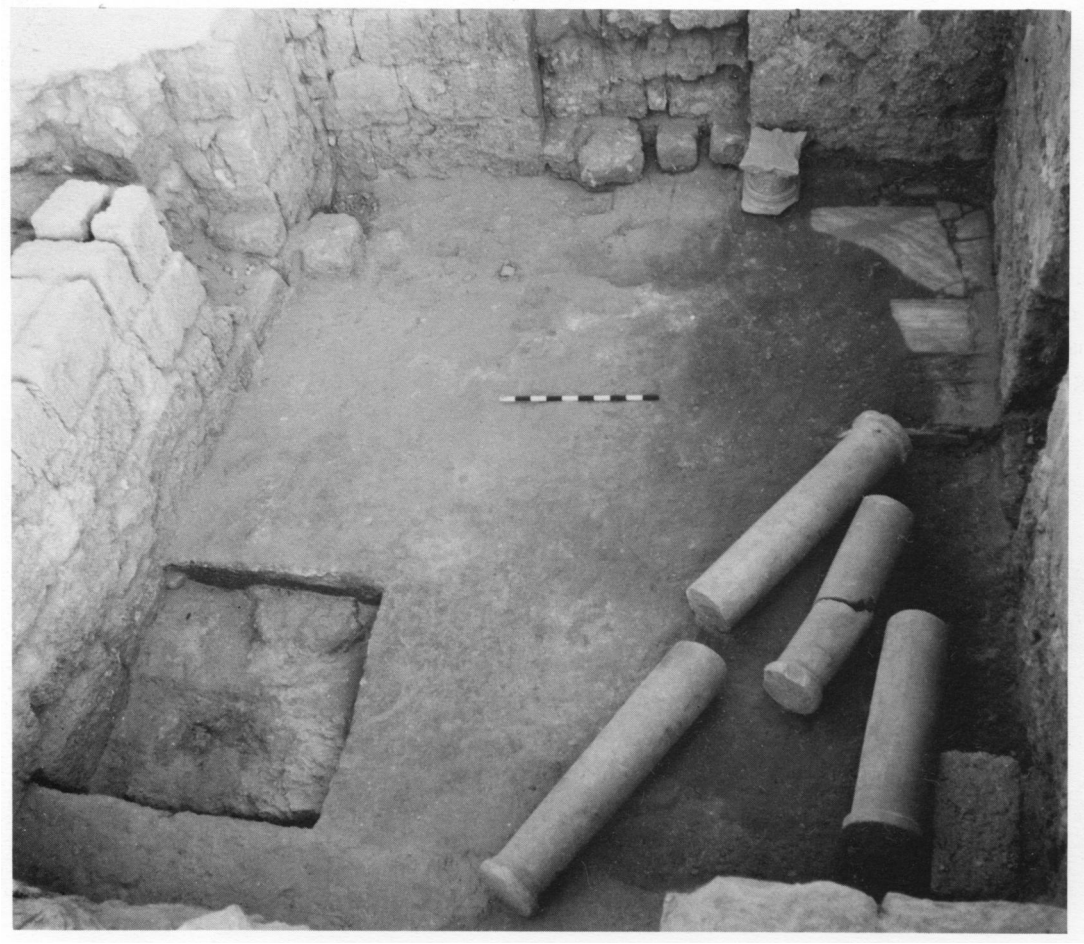
Locus 185

The top of a wall (+3.68) and an adjacent lime floor (L. 185 at +3.60) reached beneath L. 168 probably belong to Stratum 5, though the wall might have survived from yet an earlier stratum (Ill. 57). A course of this wall, built of large ashlars, was uncovered below and immediately west of wall W177; it was at least 1.3 m. wide and laid directly on bedrock (at +3.12).

SQUARES D-E/3

(Supervised by D. Stacey)

The excavations here began in Square E/3 in October 1975, and were extended into Square D/3 in April 1976.



Ill. 60. Room L127, facing east. By the northwestern corner, sounding L271, with bedrock at its bottom.

Strata 1-3 (Plan 9a, lower section)

Only very fragmentary remains of these strata survived here, probably due to the close proximity of the cliff and the resultant erosion. Stratum 1 is represented by only two walls enclosing a small room (2.5 x 1.3 m.) built directly on top of the Stratum 4 remains. At the eastern edge of Square E/3 a few walls of Stratum 2 survived, including the corner of walls W75 and W118 and a floor paved with rectangular sandstone blocks (L. 91) that is almost certainly the continuation of courtyard L. 33 in Square E/4 (Plan 9a [lower], 9c). Wall W148, which is perpendicular to wall W118, probably delimits the western sides of courtyard L. 33 and room L. 42 of Square E/4. However to the west of these walls no corresponding floor levels were found; nor were there any clear remains of Stratum 3 due to the severe erosion.

Ill. 62. Debris of stones in hall L359, facing west.

Stratum 4 (Plan 10)

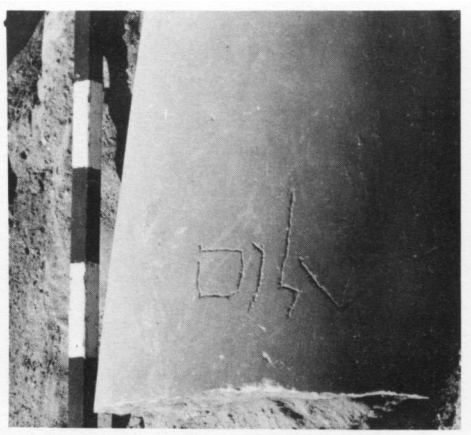
The most substantial remains found in these two squares belong to Stratum 4, and their state of preservation is good compared with those in other squares. We completely exposed room L.127 and most of the adjacent hall L. 354-L. 359.

Locus 127

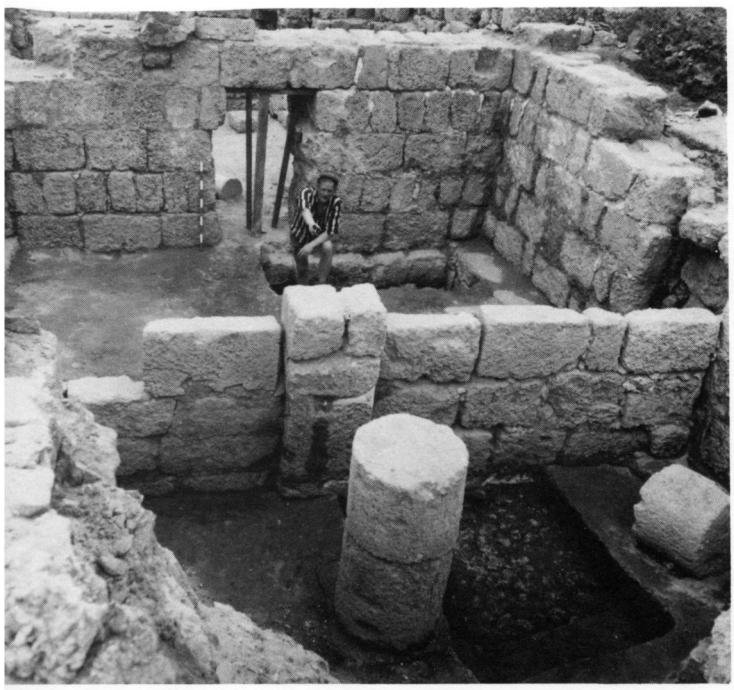
Most of the walls in this room, which measured 5.6 x 4.7 m., were preserved to a height of 2.40 m. (Ill. 58). The northern and eastern walls, each 60 cm. wide, were constructed with a regular alternation of one header and two stretchers. Wall W36, the southern wall of room L. 127, is 90 cm. wide; each course consists of headers facing on one side with stretchers along the opposite face. The room has three entrances: a wide one (1.4 m.) from the east; one of standard

Ill. 63. Debris of marble columns in room L127, facing north.

Ill. 61. Debris of ashlar stones and fill of sand above room L61, facing north.

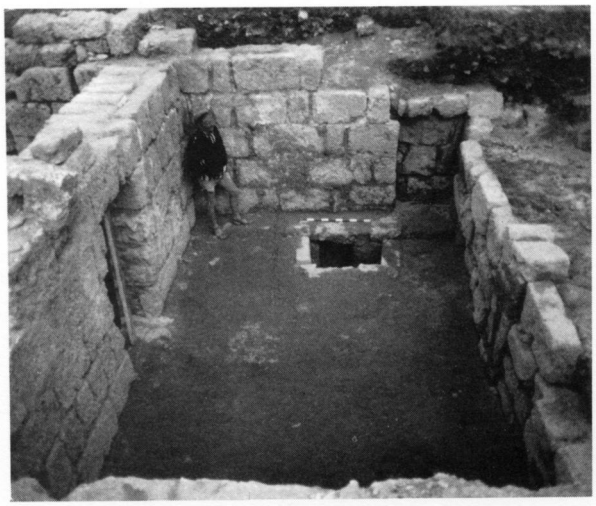


Ill. 64. The "shalom" inscription on one of the marble columns exposed in room L127.



Ill. 65. Hall L354-359, facing north.

size (90 cm.) from the south, which is preserved to its full height; and another one 90 cm. wide leading from the paved road north of the building. The western wall, whose state of preservation is poorer, was built of larger stones, up to 1 m. in length; it rests on a course of an earlier wall that projects 50 cm. farther east of the line of the wall and is 15 cm. above the floor level. The room was surfaced with lime-plaster, with a few large reused marble slabs integrated into the southeastern corner (Ill. 59). Bedrock was reached in a sounding (L. 271) only 15 cm. below the floor (Ill. 60); many coins were found in the fill, but no earlier floor was detected.



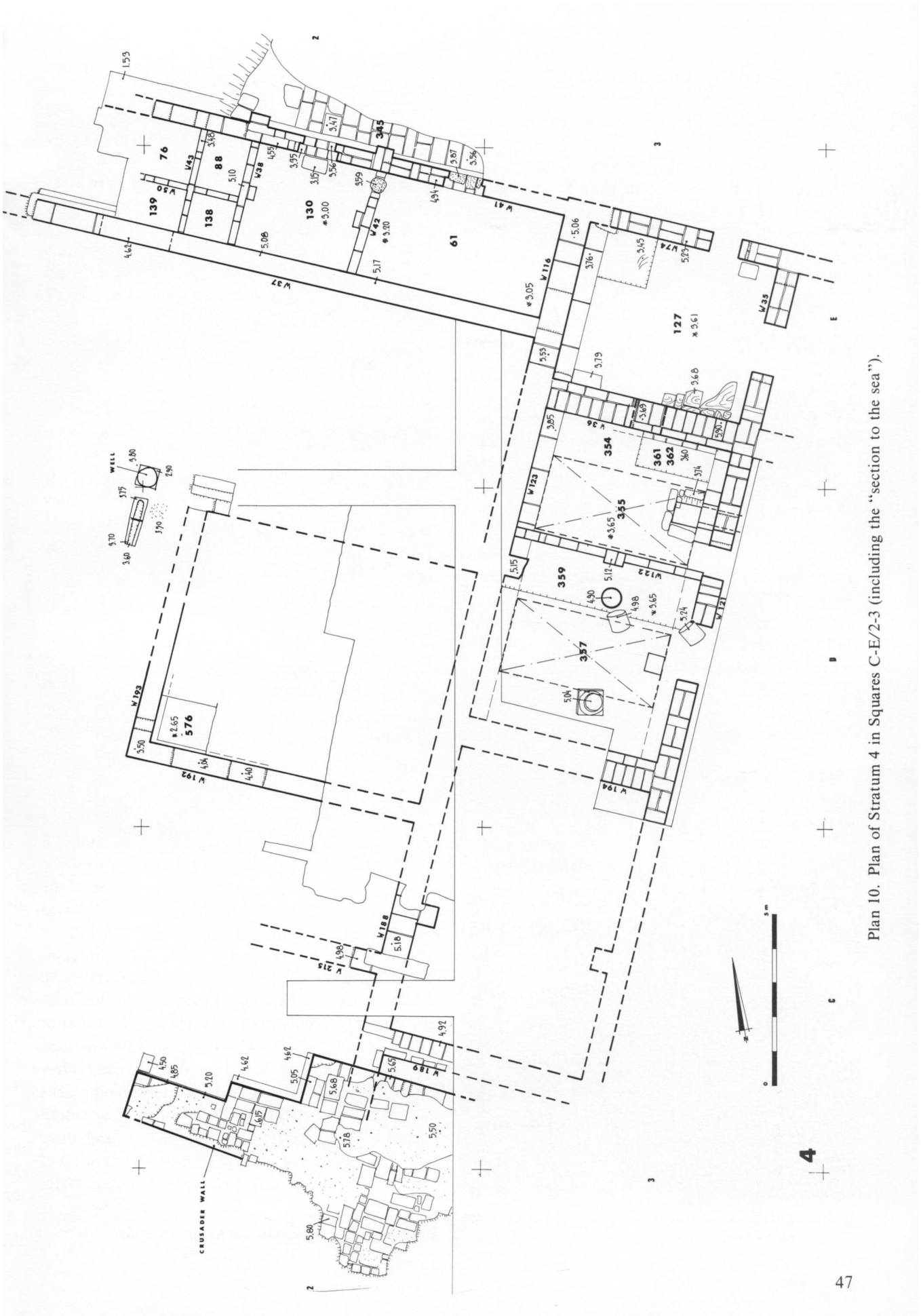
Ill. 66. Hall L354 with entrance to subterranean room L355, facing east.

Room L. 127, hall L. 354-L. 359 to its south, and room L. 61 to its west were covered by a massive sand fill that came to within 50 cm. of the present-day surface. Scattered throughout this fill were large sandstone ashlars (Ills. 61 and 62). Although we cannot be certain whether these ashlars fell from an upper floor or were dumped here from elsewhere, the former seems more likely for the following reasons: (1) The large size of these ashlars argues against their having been dumped here. (2) Two fallen marble columns, originally 2.7 m. long, were unearthed together with these blocks (Ill. 63). These columns had broken into five pieces and their capitals and bases were found in the vicinity, indicating that they had fallen from an upper floor. The word "shalom" in Hebrew was crudely incised on one of the columns (Ill. 64). (3) Many fragments of a decorated mosaic floor[4] were also found in the sandy debris, and they almost certainly represent the floor upon which these columns stood (or an adjacent room). Sand was probably deliberately brought in to supplement the natural drifting and to level the whole area before the construction of Stratum 3.

Hall L. 354-L. 359

The dimensions of this hall are 9.3 x 5.6 m.; as in room L. 127, the walls were preserved to a height of 2.4 m. Only at the northern end (L. 354) was this hall completely cleared to floor level (Ills. 65 and 66). The southern part (L. 359) has yet to be cleared of debris (Ill. 62). To the north, this hall is connected with room L. 127 via the fully preserved doorway in wall W36. Two other doorways are on the east, one (in L. 359) 1.75 m. wide, and the other (in L. 354) of the standard width. Approximately in the center of the hall is a round column, about 55 cm. wide, with two drums standing *in situ*, reaching a height of 1.25 m. above floor level. The other drums and a Doric capital (+5.04) were found in the nearby debris (Ill. 62). Subsequently (probably in phase 4a) the hall was subdivided by a narrow wall (W122), in the center of which is a pilaster, 40 x 60 cm., apparently provided for structural reinforcement (Ill. 65). The sand burying this room was interspersed with building blocks and mosaic floor fragments. Some of the large blocks which fell here, including arch stones and door jambs, bore traces of white plaster. The floor north of wall W122 (L. 354 at +3.65) was of beaten earth,

4. These mosaic fragments will be published later.



Plan 10. Plan of Stratum 4 in Squares C-E/2-3 (including the "section to the sea").

whereas the floor to the south of it (L. 359 at the same level) was of lime-plaster. Here, in a layer 40 cm. above floor level, were many sherds from storage jars.

Two subterranean structures were found beneath the floor of hall L. 354-L. 359, both 2.2 m. wide and covered with barrel-vaulted ceilings of ashlars. The northern one (L. 355) is 1.2 m. south of wall W36, while the southern one (L. 357) is 2.10 m. further south and also 2.10 m. from the southern wall (W194) of the same hall.

Locus 355

The entrance to this subterranean structure is square, 80 x 80 cm. (Ill. 66), and the room itself is 4.5 m. long. From this entrance, a passage 50 cm. wide leads through the foundation of the eastern wall (W121); it was blocked by a destruction layer. The floor, which was cut into bedrock, was covered by a layer of ash. Below the entrance there was a large quantity of pottery, including some complete vessels. The maximum height of the structure is about 2.2 m. Although no plaster was found adhering to the walls, had they been so coated in antiquity, the structure could have served as a cistern. The fact that the stone to the north of the entrance shaft has grooves, apparently created by the friction of ropes, supports this assumption.

Locus 357

This subterranean structure must have originally been of the same size and function as L. 355. However, it appears that this one was disturbed, probably during Stratum 1, when a well penetrated the western end of the structure and continued to the water table. A wall was then built to separate the well from the cistern, and the shaft of the structure was built up almost to the present-day surface. This shaft and the "cistern" were then covered with plaster, subsequently serving as a cistern.

Ill. 67. Rooms L130, L61 and L127 (Stratum 4), facing east.

Ill. 68. A section of the Stratum 4 road (L345) north of room L61, facing east.

SQUARE E/2

(Supervised by M. Magen and D. Stacey)

This "section to the sea" cuts largely through the northern part of E/2, but because of topographical difficulties encountered at the shore, we also penetrated somewhat into Squares F/2 and E/1. Because this section runs through the cliff, the erosive action of both the sea and the rain affected mainly the upper strata, baring Stratum 4 almost immediately in our excavations.

Stratum 4 (Plan 10)

We uncovered part of a building bounded by W37 (60 cm. wide) and W41 (50 cm. wide), parallel walls 3.10

m. apart, which start from wall W116 (the western wall of room L. 127) and extend for 15 m. to the seashore (Ill. 67). North of wall W41 we unearthed a narrow strip of the paved street of Stratum 4, known to us already from Squares D-E/8, E/4-5, and E/3 (Ill. 68).

Room L. 61

The eastern room of the building bounded by walls W37 and W41 measures 5.5 x 3.1 m. There was an entrance from the street on the north side, and the threshold comprised two steps leading down 40 cm. to the level of the lime-plaster floor. The floor itself is at about +3.10. The western wall of this room, W42, was only 25 cm. thick, relatively narrow for this stratum; a doorway in its northern end connected it with the next room to the west (L. 130). Both thresholds (dotted in Plan 10) were raised at a later stage of this stratum, that in wall W42 by means of a column drum. Like room L. 127 and hall L. 354-L. 359, this room was found filled with sand and large sandstone blocks. The floor itself was overlain by a layer of *kurkar* and earth.

Locus 130

The room west of room L. 61 (3.4 x 3.1 m.; Ill. 69) is bounded on both the east and west by narrow walls

Ill. 69. Room L130, facing north.

Ill. 70. The western cell-like structures, facing east. The meter stick is in L139.

(W42 and W38 respectively). In the center of each wall were pilasters that perhaps supported an arch. As in adjacent room L. 61, a doorway led to the street, which was 50 cm. higher, by way of steps integrated into the threshold. The original beaten earth floor of Stratum 4 at +3.00 was later covered with another beaten earth floor at +3.50. Both floors were strewn with many sherds of storage jars. This room, too, was buried in debris containing sand and ashlars.

Loci 76, 88, 138, and 139

Four cell-like structures were exposed west of L. 130. The eastern pair, L. 88 (1.6 x 1.3 m.) and L. 138 (1.3 x 1.2 m.), remained intact, but the western wall of the two western structures, which were once probably similar in size, had been eroded (Ill. 70). The partition walls perpendicular to W43 are only 20 cm. wide. Material predating Stratum 4 was found throughout the homogeneous fill of these "cells." As they had neither floors nor doors, it would appear that they were structural elements, whose function remains unknown.

Locus 345

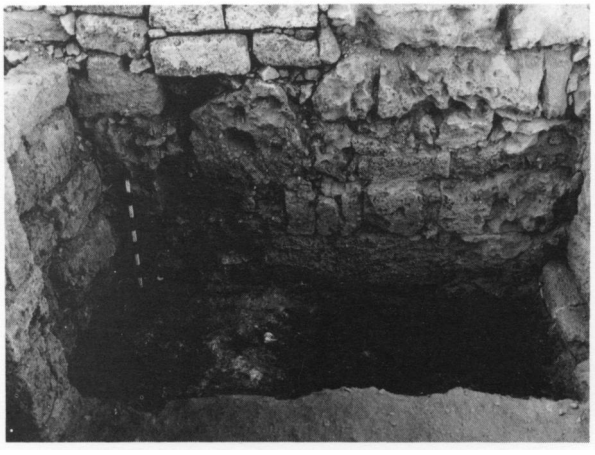
Only a narrow section of the paved street was exposed here, with the paving stones laid in north-south rows. A plaster curb 15 cm. wide curved up

Ill. 71. Remains of Stratum 5 stone pavement L273, facing west.

against the wall (Ill. 68) to provide against the flow of rainwater during the winter.

Stratum 5 (Plan 11a, d)

The layout is generally the same as in Stratum 4, i.e., a strip of rooms bounded by walls W41 and W37. The level where modification of these walls occurred was hard to determine. Apparently an east-west street ran along the north side of these rooms, for the surfaces visible in the cliff toward the sea, below the Stratum 4 paved street, were similar to those found in Squares D/3 and D-E/8.



Ill. 72. Lime floor at +2.60 in locus L130/1, facing south.

Loci 272 and 273

Beneath the western part of room L. 61 a flagstone floor (L. 273) is preserved at +2.85, over an area of about 2 x 2.5 m. (Ill. 71). The eastern continuation was disturbed by later activity (possibly a garbage dump). Immediately covering the flagstones are traces of a later *kurkar* floor (L. 272). No entryway into this area was located.

Locus 130/1

The section here exists below the previous room but the western wall (W172) of this room is wider than the western wall (W38) of L. 130 in Stratum 4. Lime-plaster floors were found at +2.90 (Ill. 72) and at +2.60. Here, too, no entrance was found.

Locus 291

A narrow room with a lime-plaster floor at +2.70 was uncovered between walls W172 (below W38) and W178 (below W43), probably from an earlier stratum.

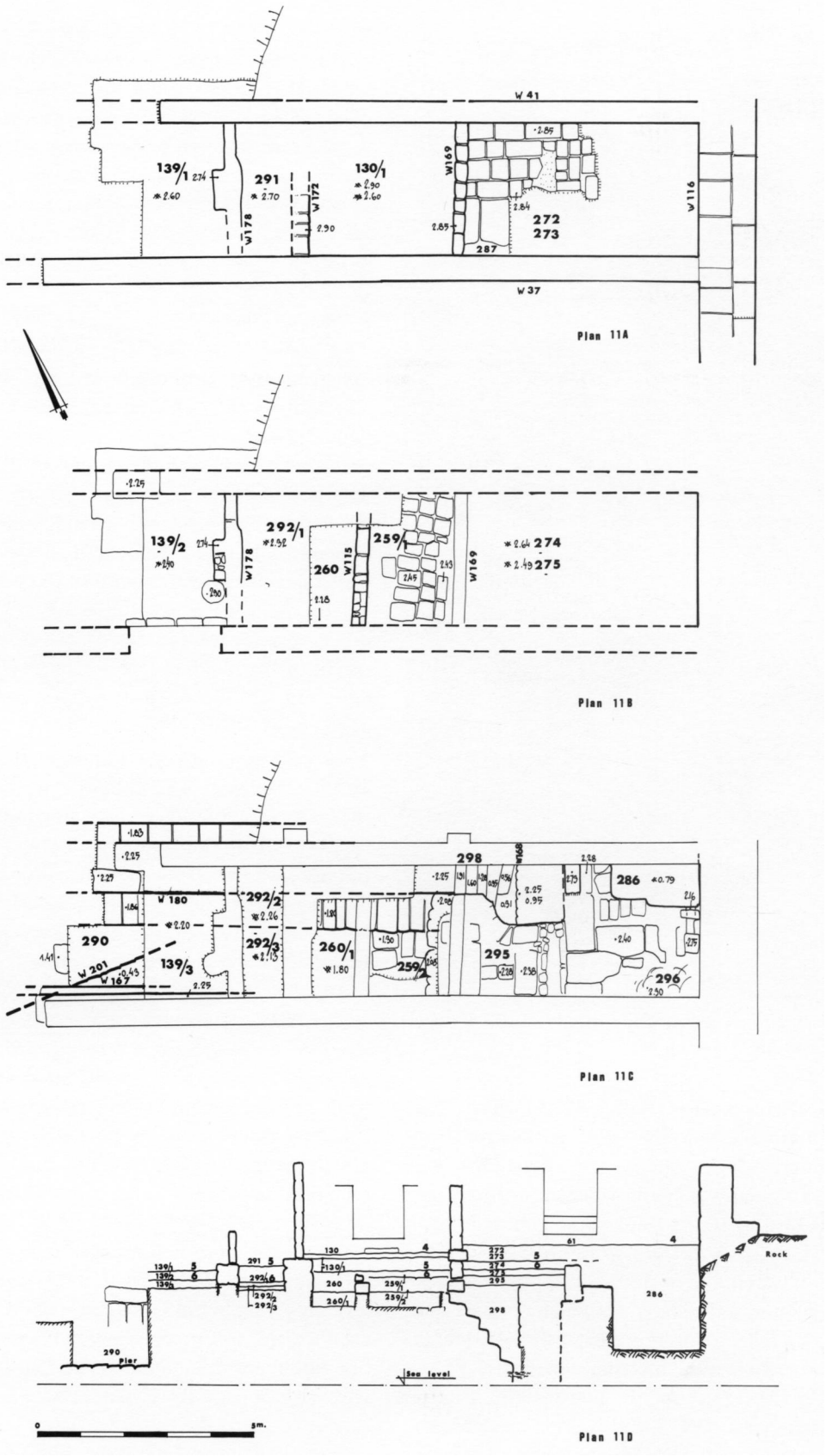
Locus 139/1

Only the eastern part of the room below L. 139 and L.76 is preserved; a plaster floor was found at +2.60.

Earlier Strata (Plan 11b-d)

Because our soundings below Stratum 5 were of limited extent, it is difficult to differentiate between the various strata or to correlate floors and walls. There are, however, two clearly early stages, which are most readily described in order of deposition (Plan 11c, then Plan 11b). The earliest structure is a wall (W201), probably a pier, which can be seen in the sea west of the cliff and a small section of which was found at the western extremity of our dig (Ill. 75). Its orientation, northeast-southwest, is totally different from that of all the adjacent later structures. The wall was built of massive ashlars, bonded with gray mortar, but only one course, situated deeply in sand, was exposed, partially below the present water table. The top of W201 is at +0.43 m. The bedrock ten meters east of our sounding, which is 2 m. higher than the pier, perhaps marks its eastern extremity.

The next structure above this was a substantial building, parts of which were seen below walls W41



Plan 11. Plans of Square E/2 (the "section to the sea"): a. Stratum 5; b. tentative Stratum 6; c. strata earlier than Strata 5 and 6; d. an east-west section.

Ill. 73. Remains of a pier (?), partially in the sea (pre-Stratum 5), facing west.

and W37. Three massive walls, W180, W167, and W166 (at right angles to the latter) are clearly visible at the western edge of the section (Plan 11c). Wall W180 has foundations 2.4 m.wide supporting a wall 1.10 m. in width. It was built of sandstone ashlars, some of which are 1 m. long. Walls W167 and W166 appear to have similar widths. The only clear floor level that relates to these walls is a white plaster floor (L.139/3 at +2.20) covering the extended width of the foundation course and meeting the walls. This is clearly seen (Pl. 73) above the pier (W201). Further east, just north of L. 260/1 and L. 259/2, ashlars laid in a similar manner and on the same line as the foundations of wall W180 probably also belong to this wall. While no clear floors relating to it were found here in L. 292/3, there was a *kurkar* floor at +2.13 and a decayed plaster floor (L. 292/2) some 13 cm. higher; these might be connected to the good plaster floor (L. 139/3). To the east the picture is even more confusing. Here two irregular pools (L. 286, L. 298) were cut down into bedrock, right on the line of wall W180. They do, however, relate to the line of a later wall, W41, and thus probably postdate wall W180.

Locus 286

This pool is 2 m. long, 1 m. wide at its eastern end, and reaches a depth of about 1.4 m. It has no steps. The bedrock into which it was carved is covered with white plaster, but the walls above it to the north and east were coated with the more common gray plaster. The pool was fed by a plaster-lined channel in the southeast corner that was partially cut into bedrock and partially built. This channel was covered with capstones. Because its southern end was destroyed by a later pit (probably of Stratum 4) that extended down to bedrock (at +2.30), we do not know the origin of the channel.

Locus 298

Nearly 2.5 m. long and 1.4 m. wide, this pool was also cut into bedrock. The upper steps, which were built (not cut), are only 60 cm. wide, but the pool broadens to 1.4 m. from the third visible step. The bottom of the pool was never reached, because water seeped in at +0.30. Although there is no clear connection between the two pools, they may have functioned together. Pool L. 298 was subsequently partially blocked by the predecessor wall W168.

The relationship between the first stage of the massive structure (W180 and W167) and Stratum 5 is very uncertain. In the area under discussion these massive walls went out of use, and narrower walls 55 cm. wide (the first stages of walls W41 and W37) were built above them (Plan 11b). Narrow, poorly constructed partition walls joined them, some of which continued into Stratum 5. In L. 139/2 at +2.40 we noticed a white plaster floor below Stratum 5, which probably went with wall W178. In L. 292/1 there was a floor level at +2.32, but in L. 260 no specific floor could be ascribed to Stratum 6. Walls W178 and W115 possibly date from this phase. In L. 259/1 a floor paved with stones was discerned at +2.45 (Stratum 6?). Immediately to the east two floors were noticed, L. 274 at +2.64 and L. 275 at +2.49 (two phases of Stratum 6?). These two floors, together with L. 272 and L. 273 above and L. 296 below, were disturbed at

their eastern end (near wall W116) in Stratum 4, further blurring the stratigraphy.

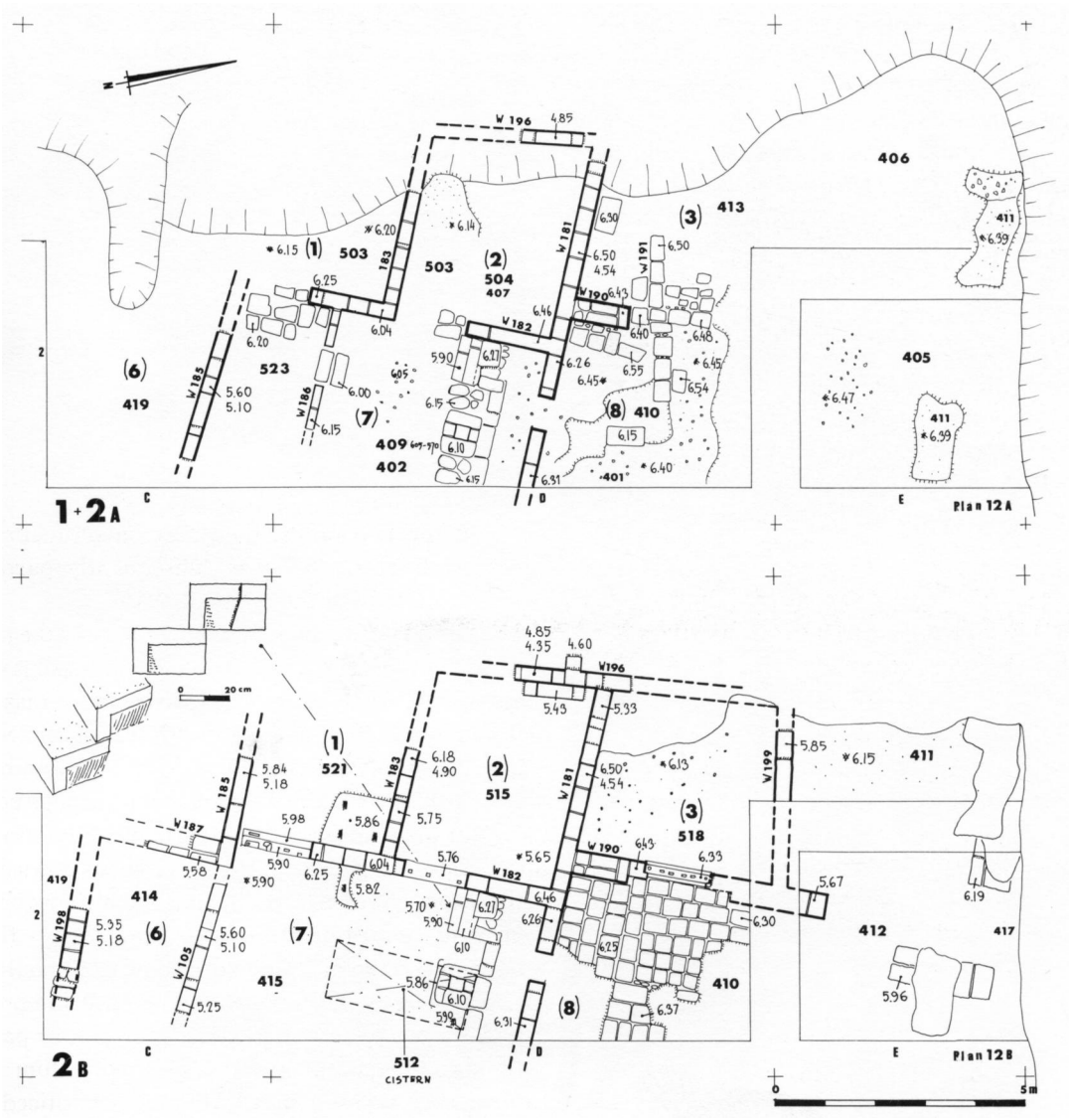
SQUARE D/2

(With parts of squares C/2 and E/2; supervised by D. Adan-Bayewitz)

The following is a description of Square D/2, including the northern part of Square C/2 and the southern part of Square E/2. This area, excavated during the 1979 season, is close to the top of the cliff. Here we uncovered part of the Crusader fortification, a major part of a structure (probably a dwelling) that continued from Stratum 3 to Stratum 1, and a section of a building from Stratum 4 (Plans 12, 13 and 10).

Dwelling of Strata 3-1 (Plans 12, 13)

It seems that the ruins of Stratum 4 were leveled off by dumping sand into them (see above, L.130, rooms L.127, L. 61 and hall L. 354-L. 359). This sand also helped to elevate the building above the sea. In any case, this structure, which covered most of the area excavated, appeared immediately below the surface (Ill. 74). We exposed two rows of rooms, one to the west and one to the east. It is possible that the building extended further to the west, but if so, it fell victim to the encroaching sea. So far we do not know the boundaries of this building on the other three sides either, whether because they remain unexcavated or because they were too badly damaged. The building



Plan 12. Plans of Square D/2 (with parts of Squares C/2 and E/2): a. Stratum 1 and Stratum 2a; b. Stratum 2b.

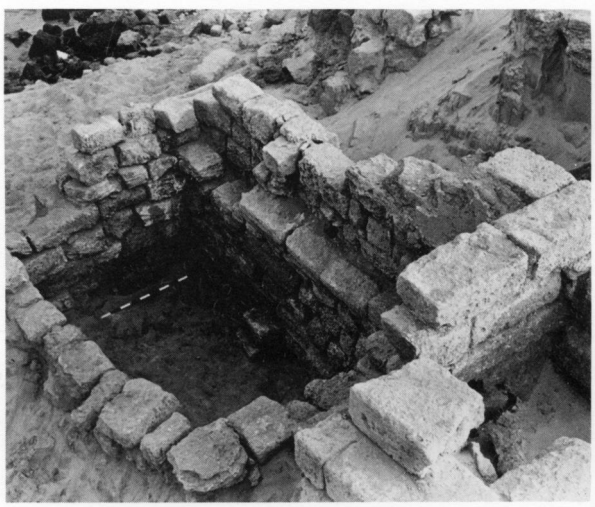
Ill. 74. The dwelling structure of Strata 3 and 2 in Square D/2, facing south.

was not altered structurally, and the only changes over time consisted of the raising of floor levels. Thus we will deal with this building room by room, rather than stratum by stratum. We will start with the western rooms, proceeding from south to north, and then describe the eastern row in the same order.

Room 1

Only the eastern part of this room (2.9 m. wide) was exposed, the western part having been completely eroded. The earliest floor (L. 521 at +5.86, from either Strata 2b or 2c), of white mosaic on a bedding of gray mortar, survived only in the northeastern corner of the room. The earthen fill on which the mosaic was laid, however, was preserved over a much wider area; it was 50 cm. thick between the floor and the sand fill mentioned above. The room was entered from the east, through a doorway with a marble threshold in room 7. This threshold, carved from part of a marble column, had many holes for hinges and bolts, probably indicating later alterations. Because the mosaic floor is related to the wide threshold, it may thus belong to Stratum 2, which is characterized by similar thresholds. We may also assume that this threshold replaced an earlier one connected to a floor that probably preceded the mosaic one. Any later floors have been eroded.

Ill. 75. Room 2, with stone mortars on disintegrating floor (L515 at +5.65), facing north. At the right, steps in room 7.



Ill. 76. The cancelled cistern, L575, below the floor of room 2, facing northwest.

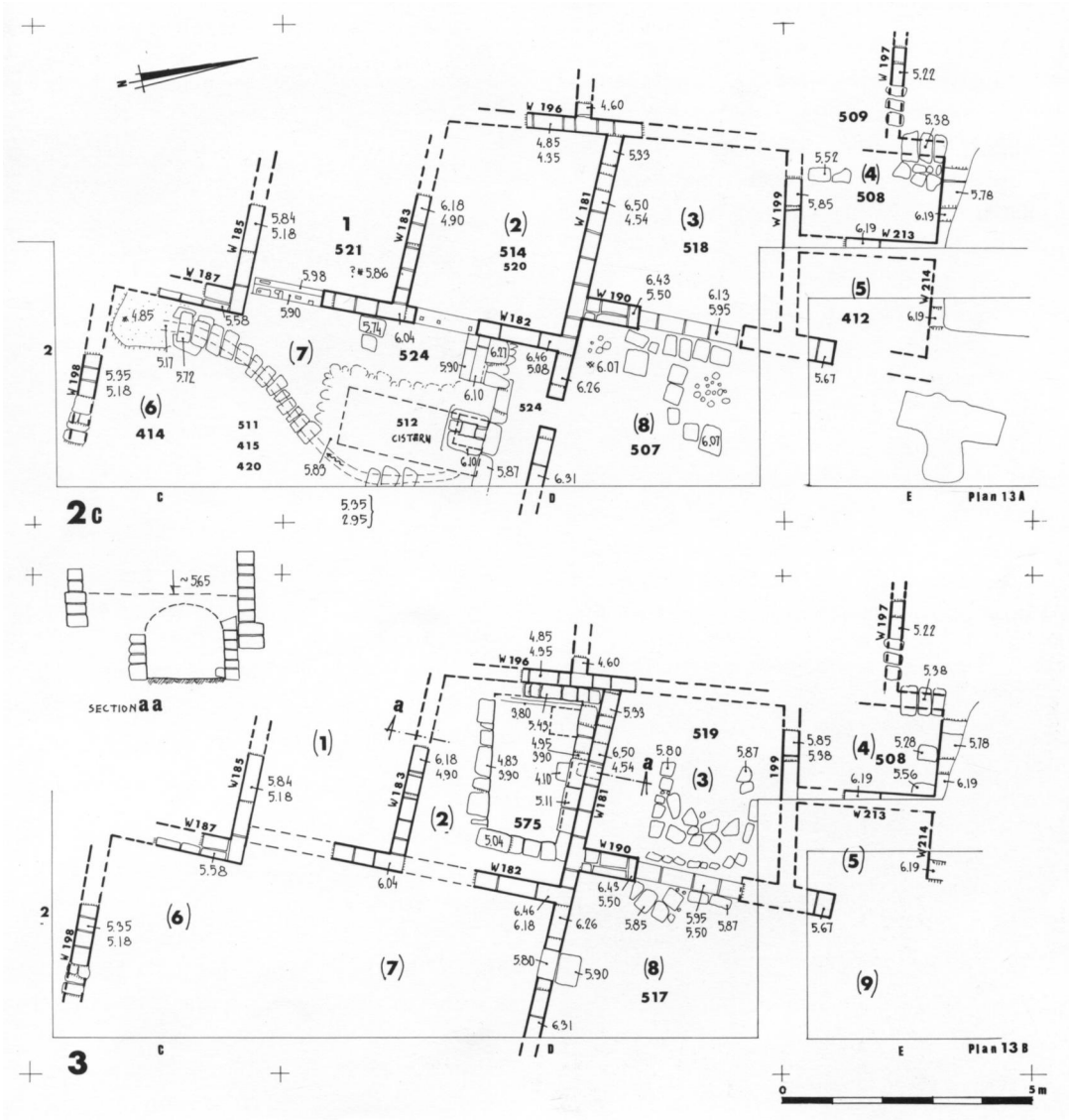
Room 2

The size of this room is about 3.9 x 3.1 m. The earliest of the two exposed floors (L. 515 at +5.65), which survived in the eastern half of the room only, was found in a state of disintegration. It consisted of gray plaster spread over small fieldstones, which were laid over a 30 cm. thick earthen fill that itself rested on the sandy fill. A group of broken mortars on the floor (Ill. 75; each averaging 30 x 40 x 25 cm.) suggests that the room may have been some kind of workshop. Here, too, the only entrance was from room 7, through a wide entrance with a threshold carved from a piece of a marble column. Once again, these remains can be related to Stratum 2, for although this floor and the marble threshold were the earliest ones preserved, there is no doubt that earlier ones (of Stratum 3) existed, to which the cancelled cistern (L. 575) beneath the northern part of this room had belonged (Plan 13b; Ill. 76). This cistern was slightly

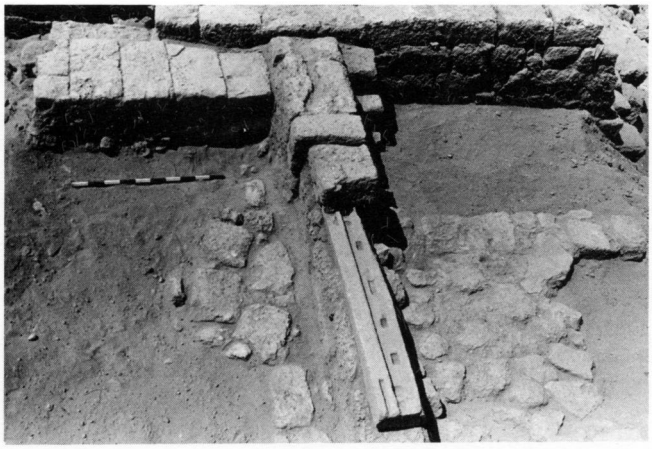
trapezoid in shape (2.7 x avg. 1.6 m.). Its walls were built in a manner similar to that of the walls of the building surrounding it, although it is structurally independent. There is no doubt that they were built together, not only because the northern and western walls of the cistern were built alongside the corresponding walls of room 2, but also because a few stones in the northern wall (W181) were bonded into the wall of the cistern. The silt which adhered to the northwestern corner of the cistern and its walls had probably accumulated while the cistern was in use. Although no traces of plaster were found on either the walls or the floor, it must have originally been plastered. The cistern was cancelled and filled with sand; there was no sign of a collapsed vault in this debris to suggest that the stones were systematically robbed. The first course of the barrel-vaulted ceiling of the northern wall of the cistern was preserved. A calculation of the maximum height of the cistern's ceiling indicates that the floor which covered it was either at the same level as L. 515 or even higher. The latest signs of occupation in this room were the remains of a plaster floor at +6.14 (L. 514) and an ash layer at +6.20 (L. 503), belonging to Stratum 2a or Stratum 1.

Room 3

The shape of this room is not exactly rectangular (avg. 3.6 x 3.5 m). It was entered from room 8. A few phases were noticed in the threshold of this entrance, as well as in the floor levels. The earliest floor (L. 519 at +5.80), probably from Stratum 3 and only partially



Plan 13. Plans of Square D/2 (with parts of Squares C/2 and E/2): a. Stratum 2c; b. Stratum 3.

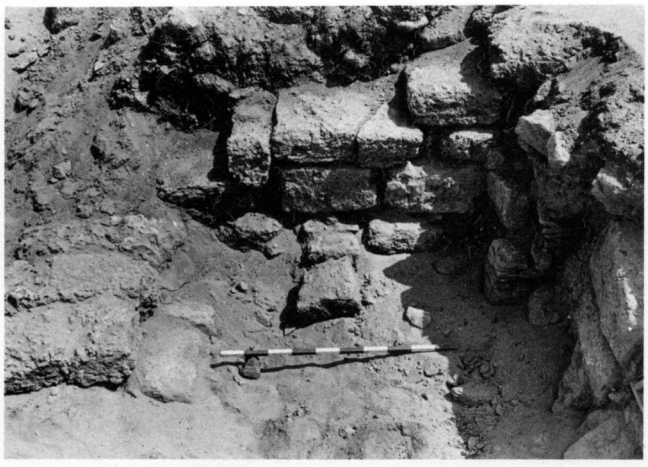


Ill. 77. The doorway between rooms 3 and 8, facing south. The threshold belongs to Stratum 2 and the pavements to Stratum 3.

preserved (Ill. 77), consists of irregular paving over a thin earth fill covering the sand fill. During the next phase floor L. 518 was covered with rough plaster at +6.13 (probably Stratum 2). Most of this floor was preserved, except where it had eroded on the west. To the last phase (either 2a or 1) belongs a stone-paved floor L. 413 at about +6.50, together with wall W192 which may have subdivided the room. Various changes in the threshold will be discussed below (see room 8).

Room 4

This room is 2.8 m. long and of uncertain width. If the three stones in the west at +5.38 represent part of the foundations of the western wall, then its width would have been 1.8 m. It seems that this room originally served as the *caldarium* of a domestic bath house, for some small stone pillars (remains of a hypocaust)



Ill. 78. Remains of a hypocaust (probably of Stratum 3) in room 4, looking north.

were found in the northeast corner of the room (Ill. 78). A thick ash layer (L. 508) was exposed between these pillars. The entrance was probably from room 5. At a later stage the hypocaust apparently went out of use, and the room was given an irregularly paved floor at +5.52 (Stratum 2). Due to erosion, the later stages were unclear here.

Room 5

Very little of this room was exposed, so no more than its general layout can be given. Measuring 2.6 x 1.8 m., it was probably entered from the east and perhaps gave access to room 4.

Room 6

The southernmost room of the eastern row is very eroded. Apart from portions of its western and southern walls and part of a water channel with stone walls

Ill. 79. The water channel under the floor of rooms 6 + 7, facing west.

and capstones *in situ* (Ills. 79 and 80), we found no remains of floors or other features. The room was 2.2 m. wide; its length cannot be determined until its eastern wall is excavated.

Room 7

From this partially excavated large room (6.4 x over 4 m. wide) there was access to rooms 1 and 2 and, at least in Stratum 3, also to room 8. A water cistern (L. 512) with a barrel-vaulted ceiling was discovered beneath the floor. Measuring 2.8 x 1.15 m., its maximum height was 2.4 m. A water channel which fed cistern L. 512 was uncovered under rooms 7 and 6. The entrance to the cistern was in its northwestern corner, and it projected 40 cm. above the mosaic floor of the room. This floor (L. 524), composed of rough white tesserae laid in a layer of gray mortar, was so

Ill. 80. The southern edge of the water channel (under room 6), facing north.

heavily repaired that few of the original stones remained *in situ*. The three steps alongside wall W182, in the northwest corner, probably mark the beginning of a staircase that led to either a second storey or the roof (Ill. 75). The exposed eastern face of this staircase was elegantly carved (see detail, Plan 12b). The stairs apparently turned and continued against the northern wall (W181), for a row of stones with only one face (south of and parallel to W181) seems to have served as the foundation of the staircase. It is difficult to determine whether the staircase, the cistern, and the mosaic floor, which were all built together, belonged to Stratum 3 or were added only in Stratum 2. Although we found no floor earlier than the mosaic, we found a number of slabs set in its bedding—especially near wall W182—which may have come from an earlier floor, perhaps from Stratum 2c. On the other hand, the doorway in wall W181 poses a problem, for if we reconstruct the staircase along this wall, as its dimensions demand, then this doorway would have been blocked. We assume, therefore, that this entrance was viable only in Stratum 3, and that the staircase, cistern, and floor belong to an early phase of Stratum 2.

At a later stage, probably in Stratum 2a, this courtyard was subdivided by a narrow wall (W186) with a doorway through it. South of this partition a pavement of rectangular sandstone blocks was installed at +6.20, as was the threshold to room 1 (Ill. 81). It is not certain whether the floor north of W186 was also raised, but at this time the entrance into room 2 was made narrower, and benches at (+6.15) were placed on either side of the cistern's mouth. Many fallen building stones were found in the debris of the room in this phase (L. 409). A rough floor (L. 402 at +6.05) probably belongs to Stratum 1.

Room 8

Another courtyard or large room, only partially excavated, was more than 7 m. long and over 4 m. wide. The earliest floor, probably of Stratum 3 (L. 517 at +5.85), is indicated by a number of rectangular stones set into the floor against wall W190 (Ill. 77). A large rectangular block was set in front of the door in wall W181, probably as a small step. It should be noted that wall W190 is wider than the other walls (45 cm. vs. 30 cm.), and into it was integrated a large threshold built of ashlars.

Ill. 81. Room 7, subdivided by wall W186, in phase 2a, facing west. Behind meter stick is threshold to Room 1.

Ill. 82. Room 8 at level +6.07 (Stratum 3), facing south.

The next floor, 20 cm. higher (L. 507 at +6.07), probably belongs to phase 3a.[5] It consists of a number of square blocks set irregularly into the floor but does not appear throughout this area (III. 82) The threshold into room 3 was raised simultaneously. A radical change took place during Stratum 2, when a floor (L. 410) of regularly laid rectangular sandstone blocks replaced the earlier floors. At this stage the entrance to room 3 was narrowed and elevated by the introduction of a threshold carved from a marble column (Ill. 77). The floor was again raised (phase 2a?), the threshold was crossed by wall W191, and part of the room was elevated to a greater height. In the east of this room remained large areas of a *kurkar* floor and of a "conglomerate" floor (L. 501 at +6.40), representing the last phase of this building (probably Stratum 1).

The relationship between rooms 8 and 5 is uncertain, and as the area east of the latter, tentatively a separate room (room 9), was heavily disturbed, it is not possible to draw a clear picture of this relationship.

Ill. 83. Remains of Crusader fortifications to the left and wall W189 of Stratum 4 to the right, facing west.

Summary

The clearest picture can be drawn from Stratum 2. Although there were no fundamental changes in the walls between Strata 3 and 2, there were changes in both the floor levels and some basic features of the rooms. The subdivision into the various strata is best seen in rooms 3 and 8; in the latter there is even an additional stage, possibly 2c or 3a.[6] Also the development from Stratum 3 to 2 is more evident here, and we should particularly note the well-paved floor of room 8 and the solid marble threshold attached to wall W190 in Stratum 2. The fact that this threshold is clearly a later one, and that elsewhere this type of marble threshold belongs to Stratum 2, leads us to assume that the two similar thresholds (between room 7 and rooms 1 and 2) also belong to Stratum 2, replacing the earlier door sills. We are inclined to associate the mosaic floors with Stratum 2 because of their close relationship to these marble thresholds. The cancelling of the cistern in room 2, and the fact that when cistern L. 512 was built the door in wall W181 was blocked, probably indicate that the cistern in room 7 was dug to compensate for the loss of the cistern in room 2 between Strata 3 and 2. Phase 2a and Stratum 1 represent a considerable deterioration in the building, a phenomenon familiar from elsewhere in the excavations.

Surrounding Remains

South

Close below the surface we exposed the remains of a massive east-west wall, a continuation of that which could be seen in the cliff before excavation began. It should be noted that this wall turns to the east at a right angle exactly where the cliff turns to form the edge of the present-day beach. We exposed a section of this wall over a length of 10 m., and where it turns to the south it is picked up again in the next area, Squares A-B/2-3. The northern line of the wall is staggered, with one step of 60 cm. and another of 1.05 m. (Ill. 83). The face of the wall is of well-dressed ashlars in courses which average 20 cm. in height. The foundation of the wall has a number of stepped courses. The core of the wall consists of stones and good-quality lime mortar; many of the stones are

5. This is practically the only section of the building where we observed this phase (3a). Theoretically, it could have been phase 2c as well, although we prefer the first alternative.
6. See above, n. 5.

reused ashlars, some as long as 60-70 cm. This massive wall bears no relationship to any floor or any other wall in the vicinity. Its building technique is similar to that of other Crusader fortifications in Caesarea, a fact which probably points to the date of its construction. The function of these walls is beyond the scope of this study.

West

Because of the heavy erosion that took place west of the building, only a few remains were exposed and it is difficult to relate them either to the above building or to the Stratum 4 building. We would draw attention only to well L. 583 (at +3.80; Plan 10), which has a square entrance, but 90 cm. below the top the shaft becomes circular, with a diameter of 60 cm. As with other wells uncovered, the upper part of the shaft was built and the lower part cut into the bedrock. To the south of the well was found a channel cut into the top

Ill. 84. Remains of a water channel carved into a row of ashlar stones, facing north. At the right, note the sand fill below Stratum 3.

of ashlars (Ill. 84), of which two elements remain, each 35 cm. wide. Together they are 1.4 m. long and the channel carved into them is 20 cm. wide and 10 cm. deep. We cannot be certain whether this is the beginning of a water channel or part of a watering trough for animals. East of it was a small section of a lime-plaster floor at +3.50.

North

We did not excavate much in this area, and the few remains exposed probably belong to Stratum 1 or 2a. The area was apparently part of a street or open

Ill. 85. A corner of room L576, of Stratum 4, looking southwest.

space; the remains included two sections of a plastered floor, L. 411 at +6.39 (Plan 12a). South of these plaster floors are layers of sand and lime which could be the remains of a surface. North of room 8 we find the conglomerate floor that also covered rooms 7 and 8 in the south.

Stratum 4 (Plan 10)

The floor level of Stratum 4 was reached in only a very limited area below the dwelling, for the thick sand layer that covered the remains of this stratum impeded our progress. The tops of a few walls (W188, W189, W215) were exposed south of room 5. They are thicker than those of the upper dwelling structure and identical in construction to the walls of Stratum 4 exposed in Squares D-E/3 and E/4. The floor itself was reached 3 m. beneath and west of the lowest floor of rooms 1 and 2. Here we exposed the southwest corner of room L. 576 in the angle of walls W192 and W193 (Ill. 85). Many broken vessels were found in the debris immediately above its beaten earth floor. Traces of lime-plaster were found on the walls. Although very little of this stratum was uncovered, when the remains are plotted together with those from Squares D-E/3 and E/4 (Plan 10) it becomes clear that all these walls have the same orientation. Although the floor of L. 576 was about a meter lower than that of hall L. 354-L. 359 in Square E/4, this can easily be explained by differences in the topography.

SQUARES A-B/2-3 (Plan 14)

(Supervised by N. Amit)

In 1979 we worked in an area close to the sea, south of Squares E/2-4. This field, which covered parts of

Squares A-B/2-3, included the cliff face and the area below it which was washed away by the sea. Unfortunately, time did not permit us to establish a good stratigraphical picture; most of the work was devoted to clearing the sand brought in by the sea and removing late disturbances. Despite the limited work and the many questions remaining unanswered, the data gained here (including walls which were visible before digging began) complement the work carried out in Squares E/2-4. Most of the artifacts found belonged to garbage dumps of Strata 2 and and 3 (L. 456 and L. 460). Four almost equidistant parallel walls (W151, W153, W154 and W160) form the skeleton of this area, and it is most readily described in relation to the strips between these walls (Ill. 86). The strips are closed by an east-west wall (W150) at the edge of the sea, and are partially covered by it (Ill. 87).

The central strip, 5.1 m. wide, is bounded on the west by W154 (1.35 m. wide) and on the east by W153 (1.15 m. wide). Both walls are built of large sandstone ashlars and are similar to the massive walls of the structure built above the pier in Square E/2 (see above). In the center of W150 were remains of a door that faced the harbor and probably served either as a direct outlet to the boats or as an entrance from a quay surrounding the harbor at this point. Starting 2 m. north of W150 and continuing for 4 m. we exposed floor L. 450, paved with large rectangular blocks at +0.73.[7] While clearing the upper parts of the cliff about 11 m. north of wall W150, we exposed the edge of a mosaic floor (L. 455) at +3.30 (Ill. 88). This floor, which probably belonged to Stratum 4, no longer related to the original walls W153 and W154, but rather to walls W164 and W156 (both 60 cm. wide) which were built on top of the earlier walls in headers and stretchers, similar to the Stratum 4 walls in Squares D-E/3. The uppermost stones of wall W153 were chamfered to the lowest stones of the new wall W156, perhaps to make room for the addition of the mosaic floor. Between this floor and the surface, a

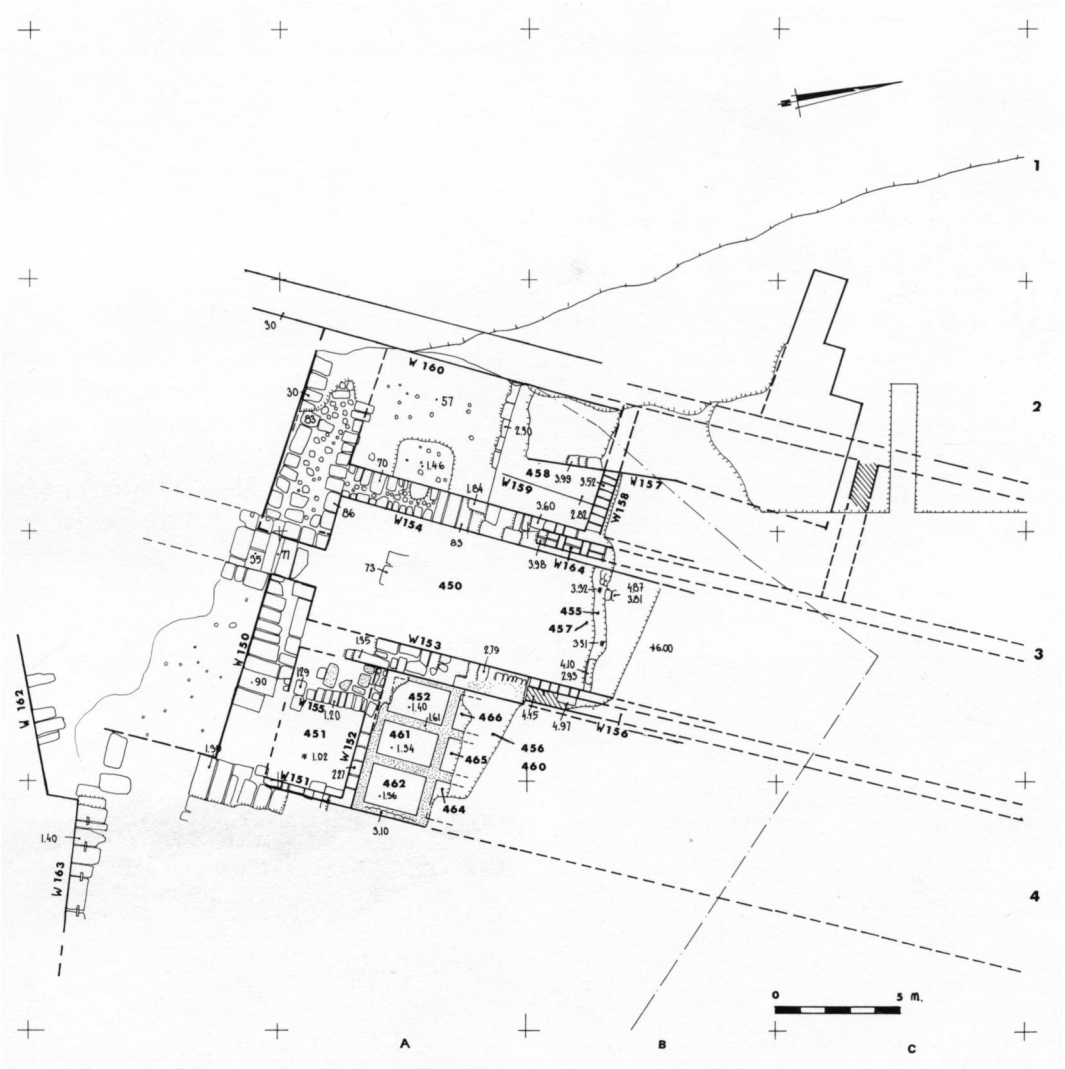
7. Unfortunately, the stone pavement was covered by sand before we were able to measure it.

Ill. 86. A general view of Squares A-B/2-3, facing northeast.

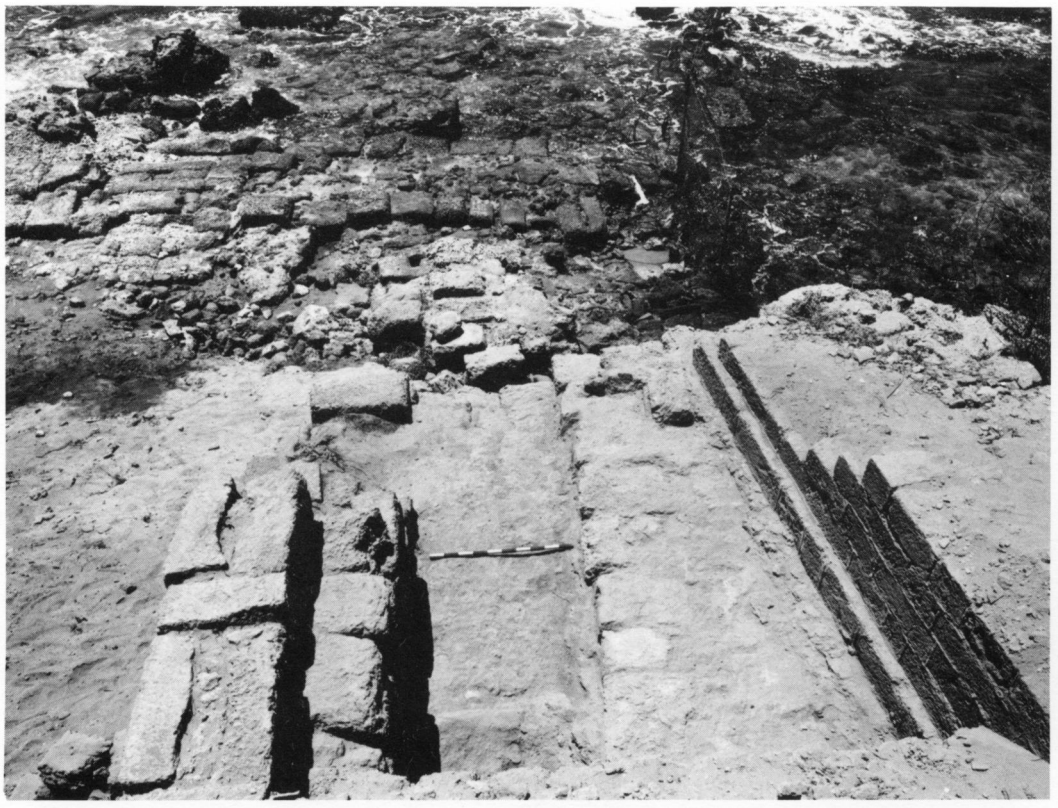
number of poor walls, probably belonging to Strata 2 and 3, were visible.

The western strip (5 m. wide) between walls W160 and W154 is mostly beneath the sea. No floor levels were found here, but there are many remains of later structures that were integrated into the main walls, the most prominent being wall W157 (Ill. 87). This wall is built with small rectangular ashlars, like the Crusader wall in Square C/2. It is adjacent to W160, though at a slightly different angle. Wall W159, east of wall W157 but parallel to wall W154, may have served as the foundation of wall W157, and is built of larger stones. Like wall W159, wall W158, located between walls W157 and W154, was built of large coarse ashlars. It abuts wall W157 (Ill. 89) and probably belongs to the same period. The 5 meters north of wall W150 is a built fill that probably also served as a foundation for the Crusader wall.

The eastern strip (*c.* 5.5 m. wide) is between walls W153 and W151. North of wall W150, a narrow room, L. 451 (3.2 m. wide), with a plaster floor at +1.02, was exposed (Ill. 90). In the western part of this room, a later wall, W155, was built parallel to wall W153. North of this room, beyond wall W152, remains of six rectangular silos arranged in two rows of three each were discovered (Ills. 90 and 91). The silos were 2.30 m. long and 1.35 m.-1.55 m. in width. They were built of well-dressed ashlars with rough mosaic floors at +1.34 to +1.40. In the floor of each silo was a shallow basin, *c.* 35 cm. in diameter, probably for collecting excess liquid. Most of the ashlars had been looted, but the white mortar that held them

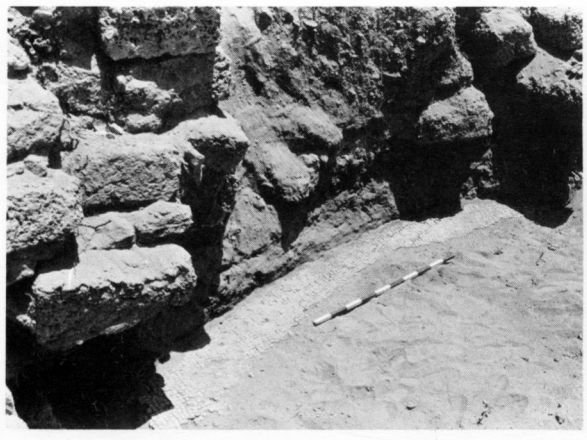


Plan 14. A plan of Squares A-B/2-3.



Ill. 87. The western strip facing south. Remains of the Crusader fortifications to the right; to the left, Stratum 4's wall W164 on top of wall W154.

was preserved against walls W153 and W151 to a height of 3 m. The lowest 1.5 meters above the floors of the northern silos (the southern row was more affected by the sea) contained building debris, which appears to be from the destruction of the building after the stones had been looted. Above this was a fill which appeared to be a late dump and contained mainly Arabic pottery. We do not have enough stratigraphical evidence to be certain of the stratum in which the silos were built, but it seems that they belong to either Stratum 3 or 4. South of these strips, on the edge of the sea, are the remains of two walls, W162 and W163. In the latter are small grooves to hold metal bonds for reinforcement. These walls were probably either contemporary with or earlier than the main walls to the north (W150, W151, W160, W153, and W154).

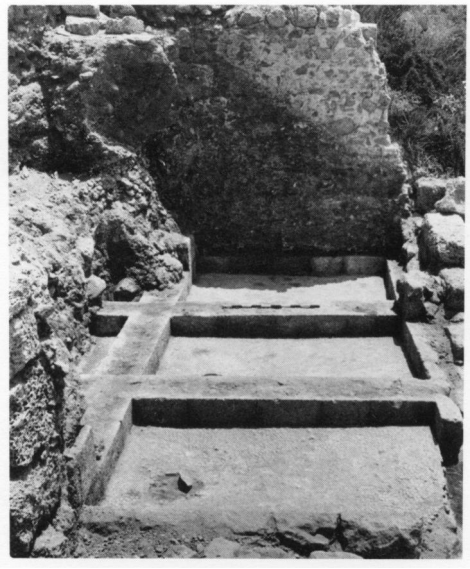


Ill. 88. Remains of a mosaic floor of Stratum 4 (L455), facing northeast.

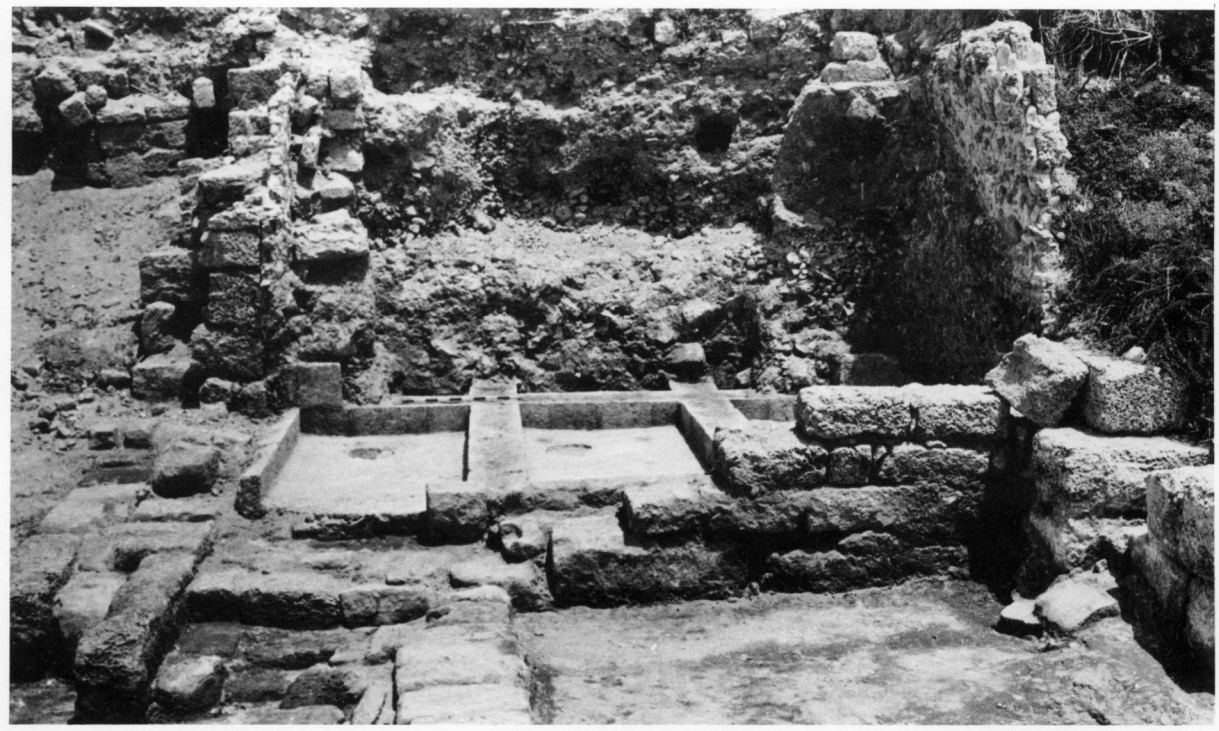
Ill. 89. The western strip facing north, with remains of the Crusader fortifications to the left.

Summary

When all the walls described above are put on a single plan (Plan 3), it becomes apparent that they stand on the same lines as the walls of Stratum 4 (and earlier) in Square E/3 to the north. Wall W164 is, for example, a direct continuation of wall W121 in Square D/3 and wall W35 in Square E/3. Wall W156 is in line with wall W177 in Square E/4. Also, the relationship between walls W164 and W156 and the earlier walls is similar to that of the walls in Squares E/2-3. Generally it appears that there was a substantial building here, with wall W150 as its southern boundary and the major east-west street (exposed in Squares E/2-5, D-E/8) from Stratum 4 as its northern boundary. Wall W167 in Square E/1 would be the western boundary, though the line here might have been influenced by the sea. The eastern boundary could be wall W151 in Square A/4 or even farther to the east. It seems that this building, which originates in an earlier stratum, was remodelled in Stratum 4 with narrower walls but with the same basic plan. Its location between the harbor and a main street indicates that this was a building of importance, either an administrative center, a warehouse, or the residence of an important official or merchant.



Ill. 91. The southern row of silos, facing east.



Ill. 90. The eastern strip, facing north, with room L451 in the foreground and the six silos behind.

SUMMARY OF MAIN EXCAVATION AREA

Excavations in the central area enable us to reconstruct the stratigraphic sequence of Caesarea from the Byzantine through Crusader periods. The urban plans of Strata 2 and 3, which give the impression of a densely populated town, with houses reached via narrow alleys, were fundamentally different from those of Stratum 4 and the earlier strata.

Stratum 1

This stratum, which represented probably part of the Crusader period, is ill-defined and contained sparse remains. In a few cases (e.g., Squares D/2 and D/8) the final occupation of the Stratum 2 buildings apparently extended into the Crusader period.

Stratum 2

This stratum was the best preserved, with structural remains found throughout the excavated areas. The buildings were probably used as dwellings and are quite homogeneous in character. Their construction is characterized by thin walls (25-35 cm.), usually built of rectangular ashlars cut from local *kurkar* sandstone. Many rooms and most of the courtyards used dressed *kurkar* stones for paving as well. In this stratum, particularly in phase 2b, parts of marble columns were commonly reused as thresholds. Little is known about the original roofing. Due to the thinness of the walls and the absence of staircases (only one staircase was found, in room 7, Square D/2), it seems that the buildings of this stratum were mainly single-storied. The ceilings probably rested on wooden beams. A large variety of water installations were exposed in Stratum 2. In addition to the wells already dug during Stratum 3, Stratum 2 contained an abundance of cisterns for storing rainwater and for drainage and sewage. Many of the cisterns were covered with barrel vaults. Ceramic pipes seem to have been used to carry the rainwater from the roofs to the cisterns (as in L. 34, Square E/4).

On the basis of the pottery, it appears that Stratum 2 (phase 2b in particular) was built towards the end of the Abbasid or the beginning of the Fatimid period (i.e., the second half of the 10th century), and that it was basically co-terminal with the Fatimid period (phase 2a). The absence of material remains from the floors of Stratum 2 or 3 is due to the extended period of time during which these houses were in use and the relatively good quality of their floors.

Stratum 3

Remains of Stratum 3 were found in most of the excavated areas beneath the Stratum 2 floors. An intermediate stage, phase 2c, was also discerned in some places. The plan of Stratum 3 resembles that of Stratum 2, and the transition from 3 to 2c/2b was probably gradual, as is seen in buildings which were constructed during Stratum 3 (e.g., the dwelling in Squares C-E/2; Plans 13a, b). In Squares D-E/8 the transition from Stratum 3 to 2 is more obvious. Stratum 3 (and phase 2c) resembles Stratum 2b, as described above, although its construction is of poorer quality. Fewer rooms are paved, and in those that are, the paving is inferior. In contrast to Stratum 2, there are no marble thresholds. The few wells found in the excavated area must be assigned to Stratum 3, thus pointing to alterations in the water supply system of Caesarea. The aqueducts had apparently fallen into disrepair, and other means of water supply had replaced them. This undoubtedly affected the general level of the city's material culture.

The difference between Strata 3 and 4 is noticeable in Caesarea's urban plan and construction technique. The wide road of Stratum 4 went out of use in Stratum 3, and buildings were erected over it. The city appears to have become congested. Although Stratum 4 may have been destroyed when Stratum 3 was built, some of its structures were incorporated into those of Stratum 3, as evidenced in Square E/3 (e.g., L. 127). The material finds point to the second half of the 8th century until the end of the 10th century as the probably period of existence of Stratum 3 and phase 2c.

Stratum 4

Most of the excavated part of Stratum 4 (except in Squares D-E/2) is characterized by a broad road (at least 6 m. wide) running east-west, turning slightly northwards towards the sea, and gradually descending towards the west. The road is well built and paved with rectangular limestone blocks (average size 60 x 45 cm.). Below street level (in Squares D/8 and E/2) were remains of drainage systems. In different places (but mainly in Square D/8) repairs and alterations in the street level were apparently made, yet still during Stratum 4.

Little information concerning Stratum 4 buildings was revealed in Squares E/4-6 and D-E/8. On the other hand, part of a large building, located in Squares

D/2 and E/2-3 and extending up to Squares A-B/2-3, was well preserved. This building was constructed of rectangular ashlars laid in different header-and-stretcher combinations. Parts of some of the walls of this building (e.g., walls W116 and W188) were composed of large ashlars laid in regular courses. The width of the walls varies from 65-95 cm. Sometimes the width equals the length of a header, or the length of a header plus the width of the stretcher. The walls in Squares D-E/8 of Stratum 4 are wider and of better construction than those of Strata 2 and 3. The large building in Squares A-B/2-3 erected close to the sea (or harbor) may have played an important administrative or commercial role, serving as a community center, as the residence of a high-ranking merchant or official, or perhaps as a warehouse.

Stratum 4 clearly represents the end of the Byzantime period (see discussion of the pottery, Ch. III B). The finds from the large building seem to indicate that it was in use for only a short period of time. Is this representative of Stratum 4 in general, or only of this particular building? Although it is still too early to answer this question definitively, the alterations and stages discernible in Squares D-E/8 suggest a longer period of usage.

Earlier Strata

The limited area of excavation and the local obstructions prevented us from drawing a clear picture of these levels. The earliest structural element is W201 in Square E/2, whose extension is still visible in the sea near the excavated area. This wall was apparently a pier connected to the port system of Herod's time. A large building was subsequently erected over it (at least in the excavated section) and was laid out along the same lines as the large building of Stratum 4. It was carefully constructed of large ashlars combined into thick walls set on even wider foundations. When considering the function of this building, one must take into account its connection with the port through a wide opening in W150 facing the sea. It seems that the large building, with its thick walls, was erected during the Roman period, apparently during the 2nd century C.E. It continued in use—with several alterations in floor level and other changes—until the beginning of the Byzantine period. Significant changes are evident in the excavated part of Square E/2, where walls W37 and W41 replaced the earlier and thicker walls W167 and W180. It seems that the orientation, dictated by the wide road, was already determined at the time of the construction of the earlier building. Although no signs of pavements (such as in Stratum 4) were found in the earlier levels of the wide roadway, we observed clear remains of two, possibly three, street levels, partly paved with *kurkar* and partly unpaved. These earlier street levels were found beneath the Stratum 4 road both in Square E/4 (next to the opening of a Stratum 3 well) and at the westernmost part of the road, where it was eroded by the sea. Limited soundings below Stratum 4 allow us to assign Stratum 5 (particularly in Squares D/8, E/2) to the Byzantine period. Between Stratum 5 and the Herodian "pier" were two or three strata, apparently dating to the 2nd-4th centuries C.E. Further excavations would undoubtedly provide additional information about other buildings that existed in this area as well as clarify the connection between the city and the port in the course of the various periods.

CHAPTER THREE

CERAMIC REMAINS

A. Pottery of the 8th–13th Centuries C.E. (Strata 1-3)*

N. Brosh

The pottery of the later strata in Caesarea dates to two main periods, early Islamic and Crusader, with the majority of the ceramic finds dating to the latter period. Some Fatimid pottery was unearthed as well. Most of these remains were fragmentary,[1] except for some oil lamps which were discovered intact. Few complete vessels could be reconstructed from the fragments.

EARLY ISLAMIC POTTERY
(Figs. 1-2; Pls. I-IV)

Most of the material from the early Islamic (8th-early 10th centuries) was unearthed during the 1975 season in a number of undisturbed loci (68, 83, 87, 93, 98, 126, 146, 157). Some material was found during the 1979 season in the same stratum which, however, was disturbed and contained intrusive material from later periods. Parallels for this pottery come from Khirbet el-Mefjer,[2] Ramla,[3] Khirbet-el-Kerak,[4] Yoqne'am,[5] and Abu Gosh.[6] Although most of the finds are dated to the Abbasid dynasty (after 750 C.E.), one may discern a definite continuation of the stylistic characteristics of Umayyad period pottery (661-750 C.E.). The Abbasid ceramic style first appears at the end of the 9th and the beginning of the 10th centuries and probably arrived in this region from Syria and Egypt. The Umayyad style in some respects continues the traditional Byzantine decorative techniques of the region, while at the same time infusing new life into this artistic form. Various decorative techniques were employed during this period: incision, combing, barbotine, stamping, painting, *Kerbschnitt*, and molding. These techniques demanded high professional skill, whereas later decoration is based on the comparatively simple technique of glazing.

Umayyad pottery has a number of distinctive features. The ware is almost always whitish-cream or pale pink, rather hard, and thinly potted. The surface of the vessels is smoothed, and the ribs which marked the Byzantine style are no longer prevalent. The decorative motifs consist largely of geometric and floral designs, and, to a small extent, calligraphic patterns which are very common in the Islamic style. The rims of jugs and jars are simple, the bases are flat; their forms resemble metalwork shapes. Most of the handles are adorned with thumb knobs, which probably reflect the influence of Sasanian pottery and metalwork.[7]

Bowls Derived from the Byzantine Style
(Fig. 1:1-2; Pl. II:2a)

A number of fragments exhibit traditional Byzantine features such as hard and thin metallic ware and identical decoration. Some of the bowls are in the form of small, deep cups which are at times painted white or black (Fig. 1:1). Other small bowls bear incised wave decorations (Pl. II:2a).

This form is an especially good demonstration of the similarity between the pottery of the Byzantine and early Islamic periods. Such vessels were also

* Plates and Figures for this section appear on pp. 72-89.

1. See ch. 2.
2. D.C. Baramki, "The Pottery from Kh. el-Mefjer," *QDAP* 10 (1942), 65-103, Pls. XVI-XXI. The comparative material discussed in this chapter refers only to the published material.
3. M. Rosen-Ayalon and A. Eitan, *Ramla Excavations, Finds from the VIIIth Century C.E.*, Israel Museum Catalogue No. 66 (Jerusalem, 1969).
4. P. Delougaz and R.C. Haines, *A Byzantine Church at Khirbat al-Karak* (Chicago, 1960).
5. A. Ben-Tor and R. Rosenthal, "The First Season of Excavations at Tel-Yoqne'am, 1977: Preliminary Report," *IEJ* 28 (1978), Figs. 7, 8:1-3.
6. R. de Vaux and A.M. Steve, *Fouilles à Qaryet el-'Enab Abū-Ghôsh, Palestine* (Paris, 1950).
7. R. Adams, "Tell Abū Sarīfa, A Sasanian-Islamic Ceramic Sequence from South Central Iraq," *Ars Orientalis* 8 (1970), 98, Fig. 8.

found at Khirbet el-Mefjer,[8] Beth She'an,[9] the Tyropoeon Valley in Jerusalem,[10] and at Yoqne'am.[11]

Cylindrical Bowls (Fig 1:3-4, Pl. I:7-8)

Several fragments of cylindrical bowls with flat bases were found. Some were made of hard black ware. The shape is typical of the Umayyad period, and is known in glass and stone.[12] The bowls are decorated partly with zigzag or other incised patterns (such as the ones described here), partly in *Kerbschnitt* style, and partly with red and black paint. Cylindrical bowls were popular in Mesopotamia and Iran.[13] Similar examples were found at Khirbet el-Mefjer[14] and Beth She'an.[15]

Molded Jugs (Fig. 1:7, Pls. III-IV)

Many fragments of molded jugs were unearthed in loci 85, 167, 184, and 197, yet no complete jugs were found.

This jug type is composed of a cylindrical neck, a spherical body, a flat base, and a handle. The different parts of the vessel were molded separately and then joined. The handle was also sometimes molded. In many of the fragments the joint is discernible, since this particular method of binding utilized an added band of clay. As a result, the design next to the joint is often slightly damaged (Pl. III:13-16).

Geometric patterns and stylized plant designs are executed in low relief, and are arranged in repeating panels and strips over the entire vessel. The neck design is usually arranged between two horizontal bands; the decoration consists of either one repeating design or two or three different designs in parallel. The body of the vessel is divided into horizontal panels of repeating designs. The area near the base is usually decorated with flowers or drops placed equidistantly one from the other (Pl. IV:2-4). The base decoration consists of arches and rosettes, and at times the artist's signature. One of the fragments found here bears the signature of an artist named 'Ali (Pl. IV:5).

Molded jugs continue a tradition stemming from Syria[16] and Egypt,[17] where molds were employed in making pottery vessels since Hellenistic and Roman times. With the emergence of Islam molded pottery began to appear in Mesopotamia and Iran at the end of the 8th and during the 9th centuries C.E. Such vessels, however, differ in style from those found in Palestine.[18] Nearly complete examples of this type were found at Ramla,[19] Khirbet el-Mefjer,[20] and Yoqne'am.[21] A ceramic mold for the neck of such jugs was found at Ramla. The molded vessels from Caesarea are dated to the 8th and 9th centuries C.E.

White Jugs (Fig. 1:8, 10-12; Pl. I:5-6)

During both the 1975 and 1979 excavations nearly complete examples of white jugs were found from loci 68, 84, 126, 197, and 575, as well as fragments. These jugs have simple rims, cylindrical necks, slanted shoulders, cylindrical bodies, and flat bases, thus exhibiting a sharp transition between the various parts of the vessel. The external surface of the vessel is smooth; ribs are visible on the inside surface only. The handle extends from the shoulder to the rim and sometimes has a thumb knob on its upper part. On the neck, below the rim, there are several incised horizontal bands. Such jugs are also known from Ramla,[22] Jerusalem,[23] and Abu Gosh.[24] The jugs are dated to a period between the 8th and the end of the 9th centuries C.E.

8. Baramki (above, n. 2), Figs. 6:17, 7:1-12, Pl. XXI:8.
9. G.M. Fitzgerald, *Beth-Shan Excavations 1921-1923, The Arab and Byzantine Levels*, III (Philadelphia, 1931), Pl. XXXIII:16, 23.
10. J.W. Crowfoot and G.M. Fitzgerald, "Excavations in the Tyropoeon Valley, Jerusalem," *PEFA* 5 (1927), 80, Fig. 17.
11. Ben-Tor and Rosenthal (above, n. 5), Fig. 7:9.
12. B. Klaus, "Das Omayyadische Schloss in Usais," *MDAI-Kairo* 20 (Mainz, 1965), Figs. 17, 42; G.L. Harding, "Excavations on the Citadel, Amman," *ADAJ* 1 (1951), Pl. II:17-19.
13. F. Sarre, *Die Keramik von Samarra, Die Ausgrabungen von Samarra* (Berlin, 1925), II, Pls. XXXVII:15, XXXVI; M. Rosen-Ayalon, *La Poterie Islamique* (Paris, 1974), p. 160, Figs. 371, 389.
14. Baramki (above, n. 2), 68, Fig. 6:1-3, 5, 20-25, Pl. XXI:5, 7, 9.
15. Fitzgerald (above, n. 9), Pls. XXVI:3, XXVII:1 XXX:8, XXXIII:20, 27, 31. For a summary of the cylindrical bowl, see E.J. Grube, *Islamic Pottery of the Eighth to the Fifteenth Century in the Keir Collection* (London, 1976), pp. 29-35; Sarre (above, n. 13), Pls. IX, X, XI.
16. Similar though not identical jars from the 9th-10th centuries were found in Syria; F. Day, "The Islamic Finds at Tarsus," *Asia* 41 (1941), Fig. 6; A. Lane, "Medieval Finds at Al-Mina in North Syria," *Archaeologia* 87 (1937), Pl. XX:2.
17. A. Lane, "Glazed Relief Ware of the Ninth Century A.D.," *Ars Islamica* 6 (1939), 56-65.
18. Delougaz and Haines (above, n. 4), pp. 43-44.
19. Rosen-Ayalon and Eitan (above, n. 3).
20. Baramki (above, n. 2), 71, Pl. XX:1, 2, Fig. 14:2, 3, 5.
21. Ben-Tor and Rosenthal (above, n. 5), 71, Fig. 7:5.
22. Rosen-Ayalon and Eitan (above, n. 3).
23. H. Geva, "Excavations in the Jerusalem Citadel, 1979-1982," *Qadmoniot* XV (1982), 73 (Hebrew).
24. de Vaux and Steve (above, n. 6), Pls. C:21-24; XVI.

Drinking Jugs (Fig. 1:13, 15; Pl. II:1a-b)

Two fragments of drinking jugs with Kufic Arabic inscriptions, found during the 1975 excavations, have parallels from Ramla,[25] Abu Gosh,[26] and the Tyropoeon Valley in Jerusalem.[27] According to Wilkinson, these jugs were used for drinking rather than for pouring liquids.[28]

Jars with Applied (Barbotine) and Stamped Decoration (Pl. I:1-3)

Three fragments of these jars were found in loci 192 and 197. Restorable examples of similar jars were found at Khirbet el-Mefjer[29] and Khirbet el-Kerak.[30] Barbotine is the technique whereby decorative clay elements are added before firing. These jars also feature impressed circular designs which were arranged in groups forming floral patterns. The plastic elements which were applied consist of horizontal ridges on the shoulder which are sometimes roped or twisted. The lower part of the vessel sometimes has combed decoration. The barbotine technique was mainly found in Mesopotamia during the 12th century C.E.

Zoomorphic Vessels (Fig. 2:1-4)

During the 1975 season a number of head fragments of zoomorphic vessels were found in loci 93 and 126. Nearly intact zoomorphic vessels were found at Ramla,[31] Khirbet el-Mefjer,[32] and Beth She'an.[33] Zoomorphic vessels were prevalent since ancient times. They are quite common at Islamic Umayyad sites,[34] but disappear entirely after the end of the Umayyad period (8th century). The style of the Islamic period is a continuation of the Byzantine style.

All the vessels are quite similar. They are small and have cylindrical bodies. The rear part contains the aperture for the liquids, and the mouths serve as spouts. The heads are distinguishable as either a ram with spiraled horn or a donkey with long, erect ears. The facial features, such as the eyes and mouths, are accentuated by coloring in white, black, and ochre.

Glazed Pottery (Pl. II:3a-c)

Two styles of glazed bowls were discovered during 1975.[35] The first consists of splayed-wall bowls with a flat base. These are of whitish-yellow ware. The decoration consists of spots in leaf green, very dark manganese brown, and pale ochre or amber on whitish ground; the whole is covered by a transparent glaze (Pl. II:3a, b). The second style includes bowls of straw-colored ware with a large, flat base and decoration of stylized floral patterns in brown and green (Pl. II:3c).

FATIMID POTTERY (10TH-12TH CENTURIES) (Fig. 2:5, 6; Pl. V:1-3)

Very little material of this period was unearthed. The glazed pottery falls into two main groups, lustre ware (Fig. 2:5, 6; Pl. V:2b, 3) and splashed ware (Pl. V:1c, d, g). The 1975 season yielded three fragments of lustre ware bowls. Two have typical lustrous reddish-brown decorations and "contour" panel designs which are heavily potted. The third fragment is decorated in lustrous olive green, with the peacock-eyes pattern typical of this ware in Mesopotamia and Egypt (Pl. V:1b).

The fragments of splashed ware bowls are decorated with spots and splashes in green, manganese purple, and ochre. Some bear simple designs, such as circles and stripes.[36]

POTTERY OF THE CRUSADER PERIOD (1099-1291 C.E.) (Figs. 2-5, Pl. VI)

In the upper layers of the 1979 season's excavation the dominant material found dates to the Crusader

25. Rosen-Ayalon and Eitan (above, n. 3).
26. de Vaux and Steve (above, n. 6), Pl. C:14.
27. Crowfoot and Fitzgerald (above, n. 10), Pl. XVI:10.
28. C.K. Wilkinson, "Water, Ice and Glass," *Metropolitan Museum of Art Bulletin* (1943), 74.
29. Baramki (above, n. 2), 66-67, Fig. 5:15-16, Pl. XIX:3, 4.
30. Delougaz and Haines (above, n. 4), pp. 37-39, Pl. 42.
31. Rosen-Ayalon and Eitan (above, n. 3).
32. Baramki (above, n. 2), Fig. 16:10-12, 18-20; Pl. XVII:2.
33. Fitzgerald (above, n. 9), Pls. XXIX:4, XXX:5.
34. E. Oren, "Early Islamic Material From Ganei-Hamat (Tiberias)," *Archaeology* 24 (1971), 276; D.C. Baramki, "An Early Christian Basilica at 'Ein Hanniya," *QDAP* 3 (1933), Pl. XLI; idem and M. Avi-Yonah, "An Early Christian Church at Khirbat 'Asida," *QDAP* 3 (1933), Pl. XII:2; Y. Aharoni and R. Amiran, "Excavations at Tel Arad: Preliminary Report on the First Season, 1962," *IEJ* 14 (1964), 138, Pl. 38D; Ben-Tor and Rosenthal (above, n. 5), Fig. 7:3.
35. The glazed fragments found at Caesarea are quite different from those uncovered at Kh. el-Mefjer, Kh. el-Kerak, and Tarsus. See Baramki (above, n. 2), Pl. XVI:4, 5; Delougaz and Haines (above, n. 4), pp. 40-43, Pl. 62:1, 46; Day (above, n. 16), Fig. 2; and Geva (above, n. 23), 73.
36. de Vaux and Steve (above, n. 6), Pls. A, XV:1-2.

period. It was found on the floors of level 2a and in some cases on the floors of level 2b—in places where level 2a was missing and in places where this material had penetrated into the earlier material of level 2b.

This pottery resembles material finds from 'Atlit,[37] Emmaus el-Qubeibeh,[38] Bethany,[39] 'Afula,[40] Yoqne'am,[41] and Al-Mina.[42] The Crusader period pottery is almost invariably in the Islamic ceramic style and was thus probably the work of local potters. Several features characterize Crusader pottery. The ware is usually glazed in shades of yellow, brown, or green coated on the slip and the interior of the vessel, up to the exterior of the rim. Besides the monochrome glazing, there are two distinctive techniques of decoration: Sgraffito and painting under transparent glaze. The ware is invariably brick-colored, similar to *ḥamra* soil. The quality is coarse and the ware is poorly-fired. Most of the glazed vessels are bowls which did not lend themselves to fine potting. The bowls are usually shallow, with a ring base and everted, flat rim.

Monochrome Glaze (Fig. 2:7-15; Pl. VI:1c)

Many fragments of bowls and some jugs are coated with monochrome glaze in various shades of green and yellow-brown. The bowls are mostly shallow, with a large, everted, and flat rim. A few have an incurved and rounded rim. The bowls are of brick ware. This pottery was common in this region from the Crusader to the Mamluk periods.[43]

Bowls with Splashed Decorations (Fig. 2:16-19; Pl. VI:1a, b)

A considerable number of fragments of these bowls were found during the 1979 excavations. The bowls are covered with creamy yellow glaze and slight green splashes. A few have green glaze with yellow splashes. The bowls are usually pink and are covered with a slip. The rims are incurved and rounded, the bases of ring form.

Sgraffito Ware (Figs. 2:20-22; 3:1-10; Pl. VI:8-10)

The term "Sgraffito" is generally applied to any kind of pottery with carved or engraved design on the surface under a transparent glaze. The decoration is cut through the coat of white slip (with which the vessel was fired) and consequently appears dark against the light surface. As previously mentioned, this was a popular technique during this period, employed in Islamic pottery from the 9th century and developed simultaneously in Iran, Mesopotamia, and Egypt.[44] During the 10th and 11th centuries, the Sgraffito technique reached Byzantine lands.[45] Most of the vessels found at Caesarea resemble especially the ware manufactured along the east Mediterranean coast and those at Constantinople,[46] Corinth, and Cyprus.[47] The style of this "later Sgraffito" is characterized by a pattern of decorative design to which little color, apart from the addition of splashes, was applied. In the earlier Sgraffito ware it was color that played the dominant role.

Many types executed in Sgraffito technique were found at Caesarea, some imported from Byzantium (Fig. 3:9) and some locally made. They may be classified under five styles:

1. Bowls, probably locally made, with green and yellowish-brown glaze and fine incisions which barely penetrate the slip into the body, bearing abstract designs such as circles and lines (Fig. 2:20-21; Pl. VI:8).[48]

2. The "'Atlit" type, in which the decoration consists of circular and plant designs with splashes of green and brown. This type also includes bowls on

37. C.M. Johns, "Medieval Slip-Ware from Pilgrims' Castle, 'Atlit (1930-31)," *QDAP* 3 (1933), 137-144.
38. B. Bagatti, *I Monumenti di Emmaus el-Qubeibeh e dei Dintori* (Jerusalem, 1947), pp. 106-139.
39. S.J. Saller, *Excavations at Bethany (1949-1953)* (Jerusalem, 1957).
40. M. Dothan, "The Excavations at 'Afula," *'Atiqot* 1 (1955), 25-27.
41. A. Ben-Tor, Y. Portugali and M. Avissar, "The Second Season of Excavations at Tel Yoqne'am, 1978: Preliminary Report," *IEJ* 29 (1979), Fig. 5:8-13.
42. Lane (above, n. 16), 19-78.
43. Comparative materials: Saller (above, n. 39), Fig. 55:2961, 19, 20; Ben-Tor *et al.* (above, n. 41), Fig. 5:1; de Vaux and Steve (above, n. 6), Fig. 32:6, 10, 13; R.H. Smith, *Pella of the Decapolis* (London, 1973), Pls. 58: 948, 51; 93c:967, 996, 1001.
44. A. Lane, "The Early Sgraffito Ware of the Near East," *Transactions of the Oriental Ceramic Society* (1937-1938), 33-51.
45. D. Talbot Rice, *Byzantine Glazed Pottery* (Oxford, 1930), pp. 32-35, 82, 90.
46. A.H.S. Megaw, "Zeuxippus Ware," *Annual of the British School at Athens* 63 (1968), 67-88.
47. J. du Plat Taylor and A.H.S. Megaw, "Cypriot Medieval Glazed Pottery–Notes for a Preliminary Classification," *Report of the Department of Antiquities, Cyprus* (1937-1939), 1-13, Pls. 1-11.
48. Megaw (above, n. 46), Pls. 16c, 19c.

high bases with a shield design (Fig. 3:5; Pl. VI:9a, b).[49]

3. Heavily potted bowls with yellowish or creamy glaze, bearing very fine incisions (Figs. 2:22; 3:3; Pl. VI:9a).[50]

4. Similar to (3), but with broad and coarse incisions (Fig. 3:4, 5, 8; Pl. VI:9c, e).

5. "Garrus" ware, bearing a design created by the carving off of the layer of slip and the cutting away of the ground, allowing the pattern to appear in relief. This ware is most probably locally made (Fig. 3:2, 10; Pl. VI:10).[51]

Underglaze Painting (Fig. 3:11-19; Pl. VI:2-7)

As mentioned above, one of the frequently used techniques consisted of painted designs under a colorless transparent glaze. The following decorative forms are distinguishable.

1. Manganese purple on white ground. A rather large number of bowl fragments (usually bases) of this type were found in the upper stratum. The most common decorative pattern is that of a stylized plant. Such fragments were also found at Beth She'an,[52] Apollonia,[53] Fustat,[54] and Al-Mina.[55] Lane terms this "Ayyubid" pottery, and proposes that it originated in Egypt.[56] The large quantity of fragments of this type found at Caesarea and other sites in Palestine (as yet unpublished) hints that a local imitation was produced in this region following Egyptian inspiration (Fig. 3:12, 13; Pl. VI:2a, b, 3, 4).

2. Underglaze slip painting. Many fragments of shallow bowls and some of jugs with a brown and yellow or green and black color scheme were found. The fragments are of a type common in this region and, to a small extent, outside of it, at Hama[57] and Fustat.[58] This type probably first appeared during the Crusader period[59] and continued into the Mamluk period.[60] The ware of the vessel is always brick red. They have flat, everted rims, and ring bases, and are sometimes covered by a slip, depending upon the pottery of the vessel. Designs were painted on the vessels in brightly tinted slip and afterwards coated with a glaze. The designs are simple, consisting mainly of geometric patterns such as lines, points, and spirals, which create a light-colored design on a dark ground (Fig. 3:11, 13-19; Pl. VI:2c, d, 5).

3. "Proto-maiolica ware." A small number of sherds, mainly rim fragments, were found in the upper stratum. The fragments are of white-buff ware with a pointed loop design in blue and brown-black on an opaque white ground. Similar examples were unearthed in large quantities at 'Atlit,[61] and in smaller amounts in Syria at Al-Mina,[62] and in Greece and Italy.[63] The design of the rims found at Caesarea is similar to that found at Al-Mina. This ware was produced in southern Italy and Sicily and imported from there to the eastern Mediterranean.

Unglazed Vessels (Figs. 4, 5; Pl. VI:12)

Sherds of jugs and jars of the Crusader period, characterized by pink or gray ware of coarse quality and poor potting, were found. Ribbing, which is found on Byzantine vessels and which was less popular during the Umayyad period, reappears on these vessels. The ribbing on Crusader period vessels is very coarse as compared to the fine ribbing characteristic of Byzantine pottery. The rims of these vessels are usually folded outwards and the necks have ridges.

It is interesting to note that a large amount of fragments of gray ware with white painting, characteristic of Byzantine and early Islamic pottery, was found (Fig. 5:3; Pl. VI:12).

49. Saller (above, n. 39), Fig. 55:22, 25, 27, 325; P.J. Riis and Vagn Poulsen, *Hama–Fouilles et Recherches de la Fondation Carlsberg, 1931-1938,* IV2: *Les Verreries et Poteries Médiévales* (Copenhagen, 1957), Figs. 819-820.
50. Lane (above, n. 16), 43, Pl. XX:A-D.
51. G. Fehér, *Islamic Pottery, A Comprehensive Study Based on the Barlow Collection* (London, 1973), pp. 65-66.
52. Fitzgerald (above, n. 9), Pl. XXVII:3.
53. I. Roll and E. Ayalon, "Apollonia/Arsur — A Coastal Town in the Southern Sharon Plain," *Qadmoniot* XV (1982), 20 (Hebrew).
54. G.T. Scanlon, "The Fustat Mounds: A Shard Account, 1968," *Archaeology* 24 (1971), 230; A.B. Bahgat, *La Céramique Musulmane de l'Egypte* (Cairo, 1930), Pls. XXX:4, 9; XXXI:5, 7.
55. Lane (above, n. 16), Fig. 9.
56. *Ibid.*, 60.
57. Riis and Vagn Poulsen (above, n. 49), Fig. 822-831.
58. Scanlon (above, n. 54), 229.
59. Baramki (above, n. 2), Pl. XX:3; Johns (above, n. 37), Pl. XXVII; Bagatti (above, n. 38), Pl. 56; Dothan (above, n. 40), 26, Fig. 7:8-20; Saller (above, n. 39), Fig. 55:5633, 7321, 7324, 21, 23, 590; Pl. 124:5; Smith (above, n. 43), Pl. 93:494, 1172.
60. de Vaux and Steve (above, n. 6), Fig. 32, Pl. XVIII:2; Ben-Tor and Rosenthal (above, n. 5), Fig. 5:1, 3; Ben-Tor *et al.* (above, n. 41), Fig. 5:2; M. Rosen-Ayalon *et al.*, "Sondages à Khirbet el-Minyeh," *IEJ* 10 (1960), 237.
61. Johns (above, n. 37), 137-138, Pls. XLIX-LIII.
62. Lane (above, n. 16), 54-58, Pl. XVII:2.
63. D. Pringle, "Some More Proto-Maiolica from 'Athlit (Pilgrims' Castle) and a Discussion of Its Distribution in the Levant," *Levant* 14 (1982), 104-117, Pls. IX-XI.

Pots and Pans (Fig. 4:15-21; Pl. VI:11a, b)

Many fragments of pots and pans were found. One pan was completely restored (Fig. 4:15). The fragments are distinguished by their light and dark brown glaze on the interior surfaces. The pans have flat bases, shallow, cylindrical bodies, and ear or ledge handles.[64] Similar pans made their first appearance during the 9th and 10th centuries and persisted until Mamluk times.[65]

Oil Lamps (Figs. 5:9-15; 6; Pl. VII)

In 1975 and again in 1979 many fragmentary and complete oil lamps were found, belonging to the Umayyad and Crusader periods.[66]

Umayyad Oil Lamps (Fig. 5:9-12; Pl. VII)

Lamps of this period follow the Byzantine tradition. They were produced in molds in the form of a flat, pointed oval. The upper section generally depicts reliefs of geometrical and floral patterns. The lower and upper parts meet in an angular joint. The filling hole is in the center and the wick hole is at the tip of the nozzle. The lamps may be divided into two types. The first, with geometrical patterns in high relief, has a knob handle and a ring base with an E-shaped hallmark. This type seems to resemble the Byzantine style and probably dates to the earliest stages of the Umayyad period (Fig. 5:10; Pl. VII:6a).[67] The second type, which occurs in various sizes, is marked by low relief decoration of floral motifs, mainly vine leaves, bunches of grapes, fruits, stylized flowers, and purely geometric patterns stemming from the local Hellenistic-Byzantine tradition. These lamps are fitted with a small lug handle and a flat base. The ware is whitish-cream or pale pink. This lamp style was widely used during the period and is found at many sites in Palestine.[68] A less common form of this type bears animal designs (Fig. 5:12) and Arabic inscriptions (Fig. 5:9). Certain lamps were coated with a dark green lead glaze (Pl. VII:6a), a color typical of glazes in the early Islamic period (Fig. 5:9, 11, 12; Pl. VII:2-8).[69]

Crusader Oil Lamps (Figs. 5:13-15; 6:1-4)

Lamps of this period were not mold-made, but rather were thrown on the wheel. They are generally small. The body which contained the oil is usually bowl-shaped. Most lamps are coated with the green or ochre glaze typical of the period. Two main types are known. The first has a pear-shaped reservoir with the wick resting on a nozzle protruding from the side (Fig. 6: 2-4).[70] The second type has two parts which were separately turned on the wheel. The bottom part takes the form of a round saucer on a small flat foot. The upper part is hemispherical, with a central filling hole bordered by a collar to which the handle was attached. Opposite this is an aperture for the wick. This oil lamp is typical of the 12th through 15th centuries and is found both at Crusader and Mamluk sites (Figs. 5:13-15; 6:1).[71]

64. Johns (above, n. 37), Pl. LVII:3; Ben-Tor and Rosenthal (above, n. 5), Fig. 6:8-14; Ben-Tor *et al.* (above, n. 41), Fig. 5:6-7, 11-12.
65. Lane (above, n. 16), Fig. 5G; Ben-Tor *et al.* (above, n. 41), Fig. 6:4.
66. Major studies: F. Day, "Early Islamic and Christian Lamps," *Berytus* 7 (1942), 65-79; C.A. Kennedy, "The Development of the Lamp in Palestine," *Berytus* 14 (1965), 67-115; W.B. Kubiak, "Medieval Ceramic Oil Lamps from Fūsṭaṭ," *Ars Orientalis* 8 (1970), 1-8.
67. Comparative material: Baramki (above, n. 2), Pl. XVII:1, 4, 5, 8; Harding (above, n. 12), Pl. III:55-56.
68. Comparative material: Rosen-Ayalon and Eitan (above, n. 3); Baramki (above, n. 2), Pls. XVII:1, 8; XVIII:1-3, 5-6.
69. Lane (above, n. 16), 57, Fig. 6B.
70. Comparative material: Johns (above, n. 37), Pl. LVIId; Ben-Tor and Rosenthal (above, n. 5), Fig. 5:12; Kubiak (above, n. 66), Figs. 7a, 7b.
71. Comparative material: Johns (above, n. 37); Rosen-Ayalon *et al.* (above, n. 60), 239, Pl. 30:20-21; Ben-Tor and Rosenthal (above, n. 5), Fig. 5:11; Riis and Vagn Poulsen (above, n. 49), Figs. 1064-1067; Kubiak (above, n. 66), Figs. 12a, 12b, Pl. 3:15-16.

Fig. 1: Strata 1-3, Um/EI, 8th-early 10th centuries

Form	Locus	Reg. No.	Description
1. cup	59	564/8	pinkish-orange surface; metallic gray core; white slip; painted in black, half palmette pattern
2. cup	98	446/3	thin metallic red ware
3. bowl	197	695/6	hard black ware; white grits; incised zigzag decoration
4. bowl	67	596/4	pinkish-orange ware; deeply incised zigzag decoration; yellow and maganese-purple paint
5. bowl	193	620/7	reddish-brown ware; white paint
6. bowl	68	525/1	buff ware; polished surface, deeply cut decoration
7. jug	157	467/5	cream-colored ware; molded
8. jug	68	525/2	gritty cream-colored ware; polished surface, ribbed inside
9. jug	98	446/7	pinkish-orange ware; brown core; deeply cut decoration
10. jug	197	695/7	gritty cream-colored ware
11. jug	197	695/19	gritty cream-colored ware
12. jug	197	695/8	gritty cream-colored ware; polished surface
13. jug	193	620/20	hard, thin, cream-colored ware; pinkish core
14. jug	193	620/16	gritty cream-colored ware; polished surface, ribbed inside
15. jug	197	695/22	hard, thin, cream-colored ware
16. flask	507	1597	grayish ware; pink core
17. pan	519	1879	brick ware; blackened by use
18. jar	524	1876	whitish gray ware; ridge on handle
19. jar	520	1893	pink ware
20. handle	520	1661	grayish-white ware
21. handle	507	1583	whitish buff ware; applied decoration

Fig. 1. Strata 1-3, Um/EI, 8th-early 10th centuries.

Fig. 2: Strata 1-3, Um/EI, 8th-early 10th centuries

Form	Locus	Reg. No.	Description
1. zoomorphic vessel	126	373	pinkish-ware; gray core; white and red-brown painted decoration
2. zoomorphic vessel	157	467/12	pinkish ware; white grits; red and white painted decoration
3. zoomorphic vessel	93	483	pinkish ware; white grits; painted white and black with orange-red decoration
4. zoomorphic vessel	47	217	reddish-orange ware
5. bowl	356	1152/2	pale pinkish ware; yellow lustre decoration on white glaze
6. bowl	68	525/3	pale pinkish ware; reddish-brown lustre decoration on white glaze
7. jug	28	243/1	brick ware; white grits; ochre-brown glaze
8. bowl	409	1566	pink ware; green glaze
9. bowl	60	246/5	brick ware; yellow-brown glaze
10. bowl	407	1222	brick ware; white grits; yellowish creamy glaze inside
11. bowl	409	1239/3	brick ware; pale green-brown glaze inside
12. bowl	409	1253/4	brick ware; brown slip; yellow-brown underglaze and decoration inside
13. bowl	409	1240/3	pinkish-orange ware; white grits; green glaze inside
14. bowl	410	1294	brick ware; green-brown glaze inside
15. bowl	419	1275	pale pinkish ware; light slip; green glaze
16. bowl	101	9/8	pinkish ware; yellow glaze with green splashes
17. bowl	409	1239	brick ware; cream-colored glaze with green splashes inside
18. bowl	409	1240	brick ware; cream-colored glaze with green splashes inside
19. bowl	409	1268	pinkish-orange ware; cream-colored glaze with green splashes
20. bowl	152	460/6	brick ware; green glaze and thin incised Sgraffito decoration inside
21. bowl	104	2/16	brick ware; ochre glaze and thin incised Sgraffito decoration inside
22. bowl	44	359/8	brick ware; white grits; yellow glaze with thin incised Sgraffito decoration

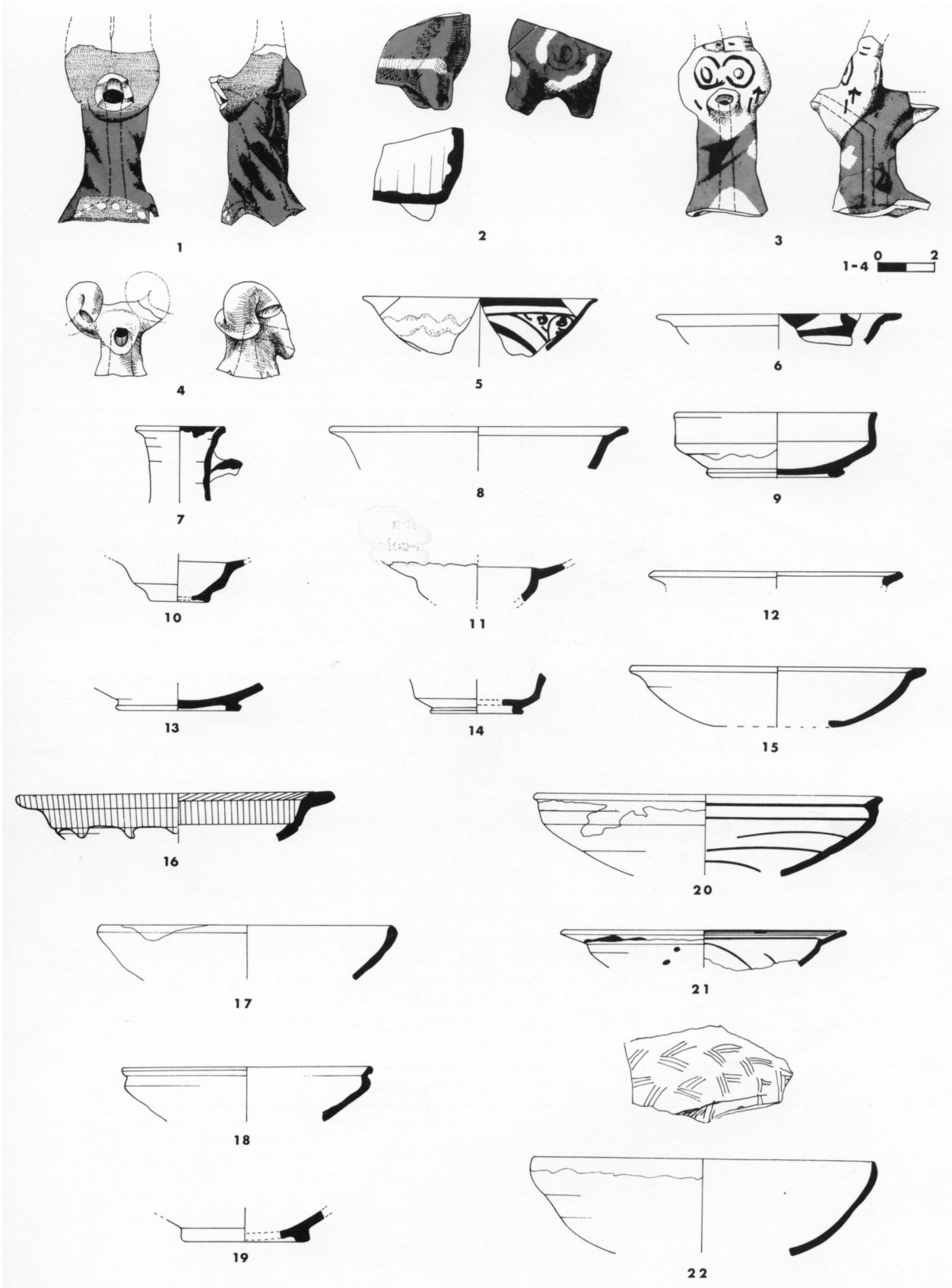


Fig. 2. Strata 1-3, Um/EI, 8th-early 10th centuries.

Fig. 3: Crusader Pottery

Form	Locus	Reg. No.	Description
1. bowl	21	323/16	buff ware; cream-colored glaze; incised Sgraffito decoration with green and ochre splashes inside
2. bowl	69	385/1	brick ware; white grits; pale yellow glaze with yellow and green splashes; carved decoration
3. bowl	104	2013	brick ware; white grits; yellow glaze; thin incised Sgraffito decoration
4. bowl	515	1610	pinkish orange ware; cream-colored glaze; broad incised Sgraffito decoration
5. bowl	16	190/4	pale pinkish gray ware; cream-colored glaze; broad incised Sgraffito decoration
6. bowl	21	323/14	buff ware; cream-colored glaze; incised Sgraffito decoration with green and ochre splashes inside
7. bowl	435	212/9	whitish buff ware; white glaze with painted brown and blue decoration inside
8. bowl	16	190/1	pinkish orange ware; pale yellow glaze; broad incised Sgraffito decoration
9. bowl	33	235/5	orange ware; creamy glaze; incised Sgraffito decoration with brown splashes
10. bowl	33	235/3	orange ware; yellow glaze; carved decoration
11. bowl	402	1212	brick ware; white grits; underglaze painting of green on brown background
12. bowl	21	323/9	buff ware; cream-colored glaze; manganese-purple painted on white
13. bowl	21	323/6	pale orange ware; cream-colored glaze; manganese-purple painted on white
14. bowl	409	1577	pinkish-orange ware; white grits; monochrome ochre glaze
15. bowl	104	2/17	brick ware; white grits; underglaze painting of green on brown background
16. jug	28	243/2	brick ware; outside underglaze painting of yellow on brown background
17. bowl	402	1219	brown ware; gray core; underglaze painting of green on brown background inside
18. bowl	21	323/5	brick ware; white grits, underglaze painting of green on brown background
19. bowl	409	1239	brick ware; outside underglaze painting of yellow on brown background

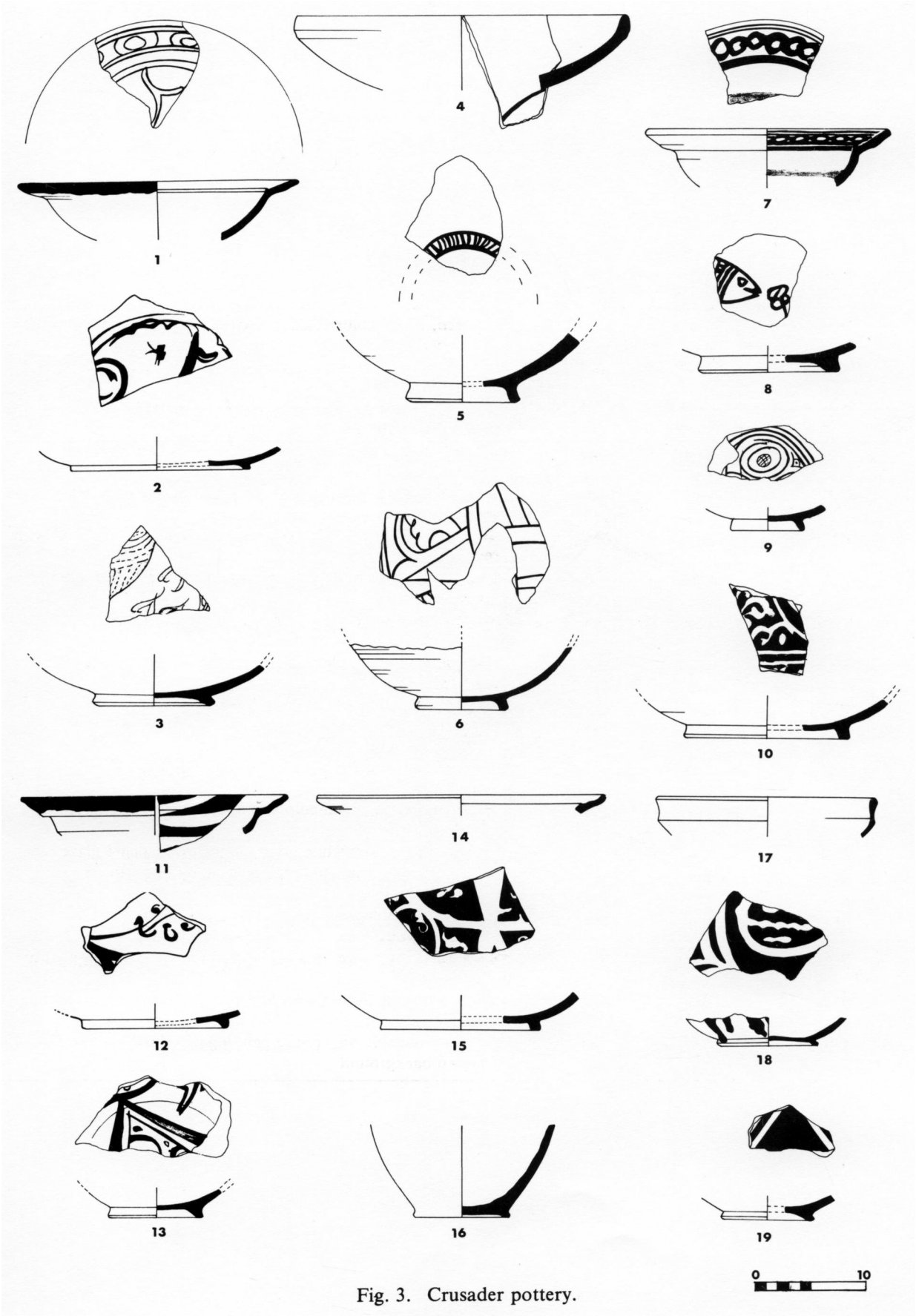


Fig. 3. Crusader pottery.

Fig. 4: Crusader Pottery

Form	Locus	Reg. No.	Description
1. pot	515	1610	brick ware; brown glaze inside
2. pot	402	1219	brown ware; blackened by use
3. pot	409	1575	brick ware; white grits; brown glaze drops inside
4. pot	514	1596	brick ware; white grits; brown glaze inside
5. pot	407	1237	brick ware; brown glaze inside and on rim; brown slip
6. pot	414	1266/2	brick ware; brown glaze inside and on rim
7. pot	409	1239	brick ware; white grits; brown glaze inside
8. pot	409	1253/2	brick ware
9. pot	409	1253	brick ware; gray core; white grits; brown glaze inside and on rim; blackened by use
10. pot	414	1266/2	brick ware; brown glaze inside and on rim
11. pot	159	791/5	brick ware; brown glaze inside
12. pot?	318	762/1	brick ware; pale brown glaze on bottom
13. lid	405	1242	pinkish-orange ware; white grits; inside blackened by use
14. pot handle	402	1231	brown ware; blackened by use
15. pan	318	762/1	brick ware; brown glaze on bottom
16. pan	418	1603	brick ware; brown glaze inside; blackened by use
17. pan	21	323/2	brick ware; gray core; brown glaze inside
18. basin	405	1242	coarse orange ware; gray core; broad incised decoration
19. basin	405	1242	coarse orange ware; gray core; broad incised combed decoration
20. basin	412	1271/1	coarse orange ware; white grits
21. basin	409	1268	coarse orange ware; white grits

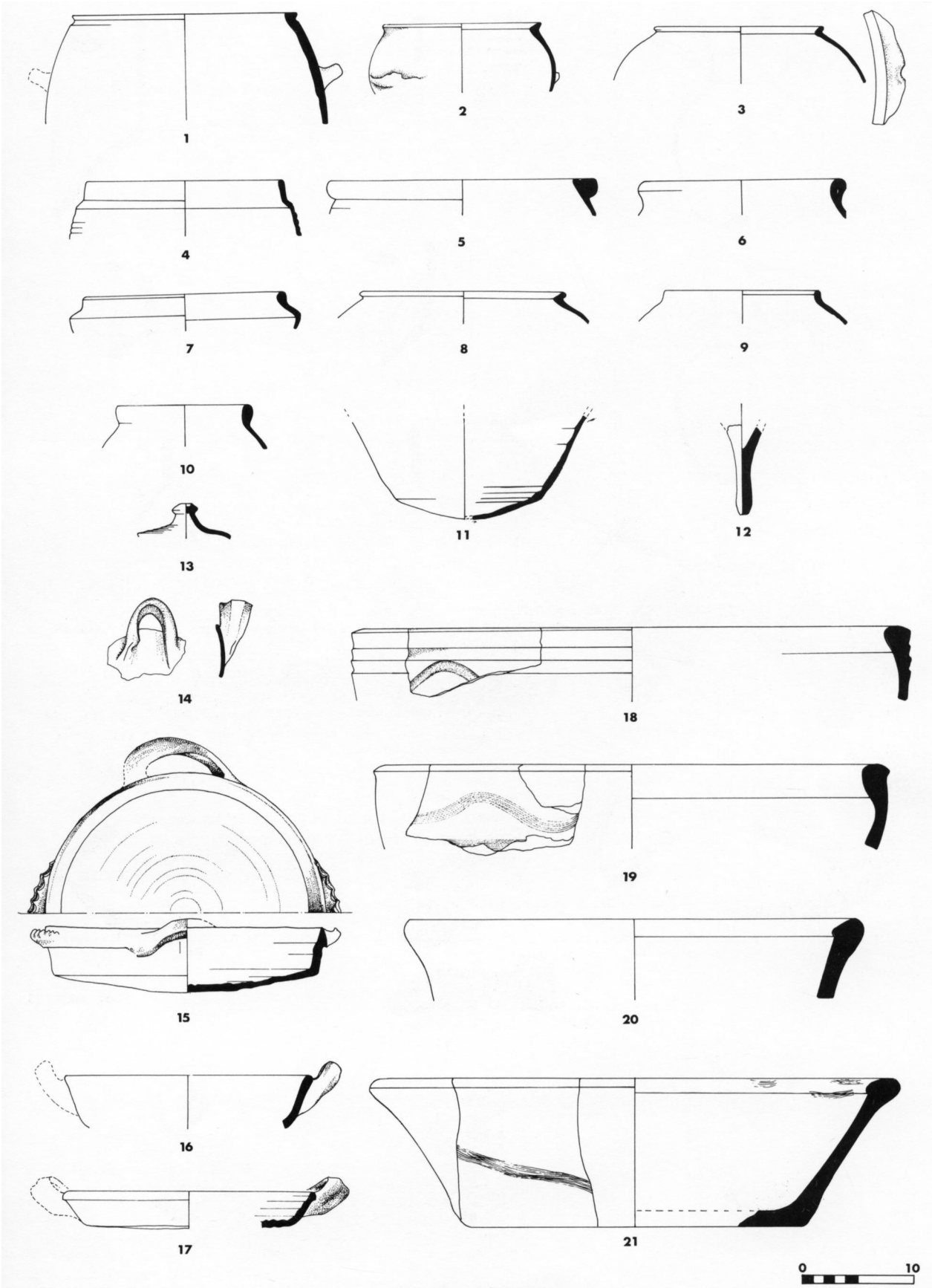


Fig. 4. Crusader pottery.

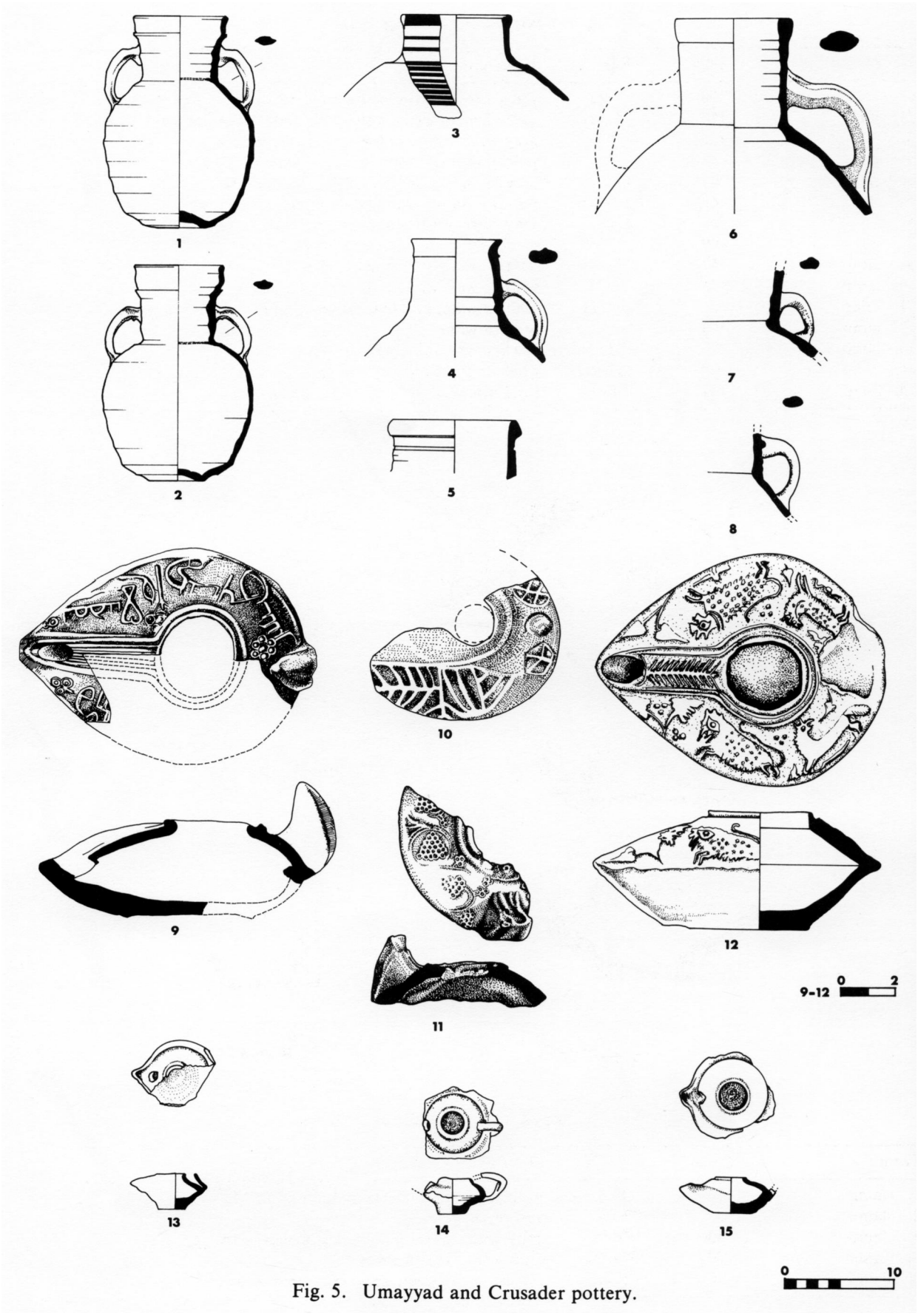


Fig. 5. Umayyad and Crusader pottery.

Fig. 5: Umayyad and Crusader Pottery

Form	Locus	Reg. No.	Description
1. jar	150	791/2	gritty brown ware; white grits; buff slip
2. jar	150	791/1	gritty brown ware; white grits; buff slip; filter inside
3. jar	575	1887	gray ware; white grits; white stripe decoration
4. jar	414	1246	pale gray ware; white grits; cream-colored slip
5. jar	402	1205	pinkish-orange ware; white grits
6. jar	409	1254/1	pinkish-orange ware; white grits
7. jar	409	1253	gray ware; creamy slip
8. jar	409	1566/2	brick ware; white grits; pale pink slip
9. lamp	157	467/7	whitish ware; black grits; relief decoration of Kufic inscription
10. lamp	74	284/2	whitish ware; nozzle blackened by use
11. lamp	157	467/11	whitish ware; low relief decoration of bunches of grapes
12. lamp	460	—	pinkish ware
13. lamp	93	673	brick ware; creamy slip; spout blackened by use
14. lamp	67	457/1	brick ware; white grits; spout blackened by use
15. lamp	39	208/1	brick ware; white grits; spout blackened by use

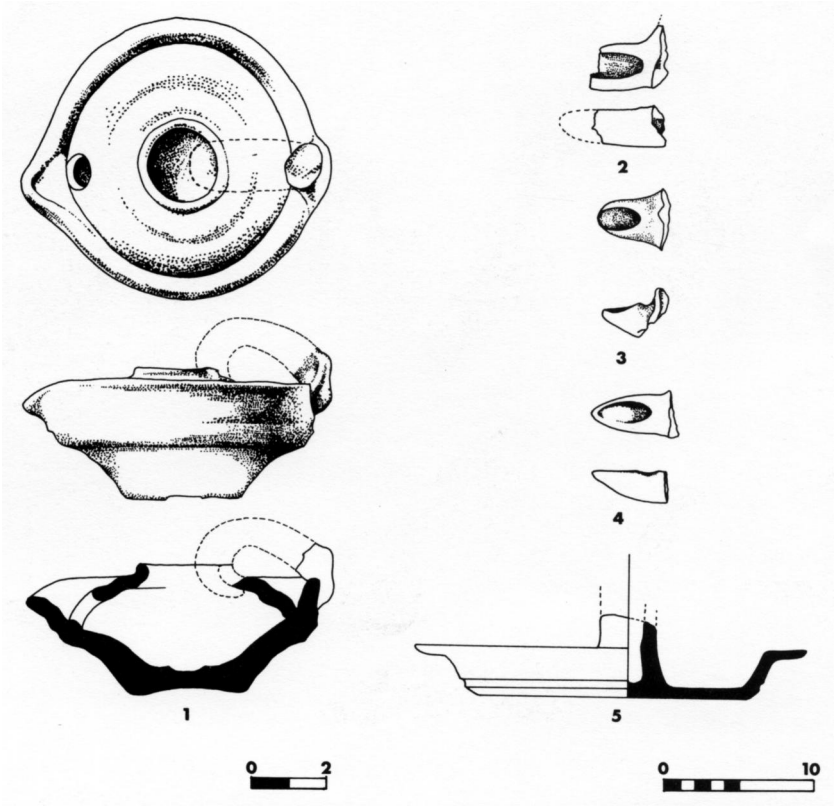
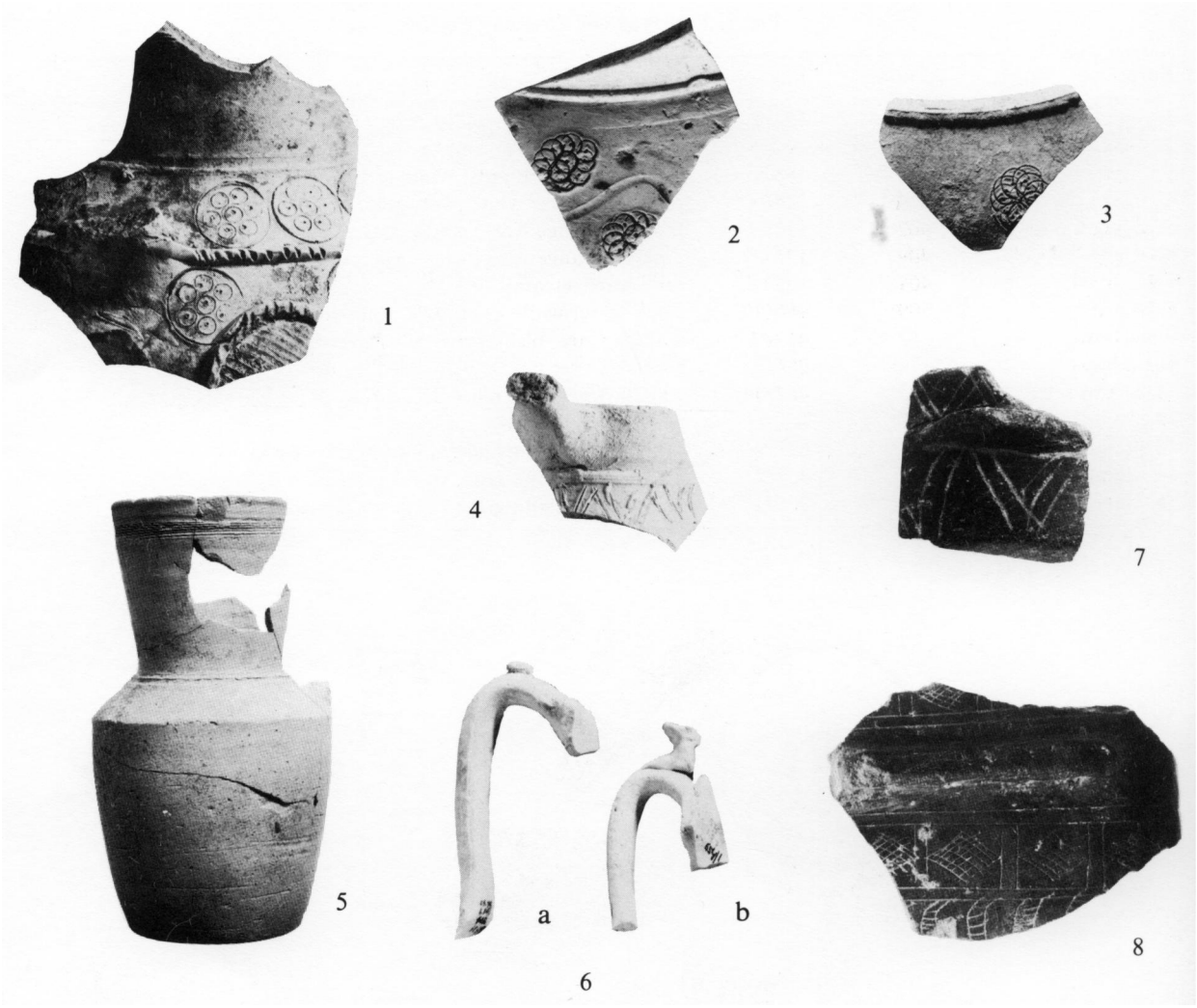


Fig. 6: Crusader Pottery

Form	Locus	Reg. No.	Description
1. lamp	162	640	brown ware; cream-colored slip; green glaze
2. lamp	33	235/1	buff ware; green glaze
3. lamp	83	496/1	brick ware; green glaze; spout blackened by use
4. lamp	70	259/25	brick ware; yellow glaze
5. lamp	68	355/1	pinkish ware; white grits; leaf-green glaze



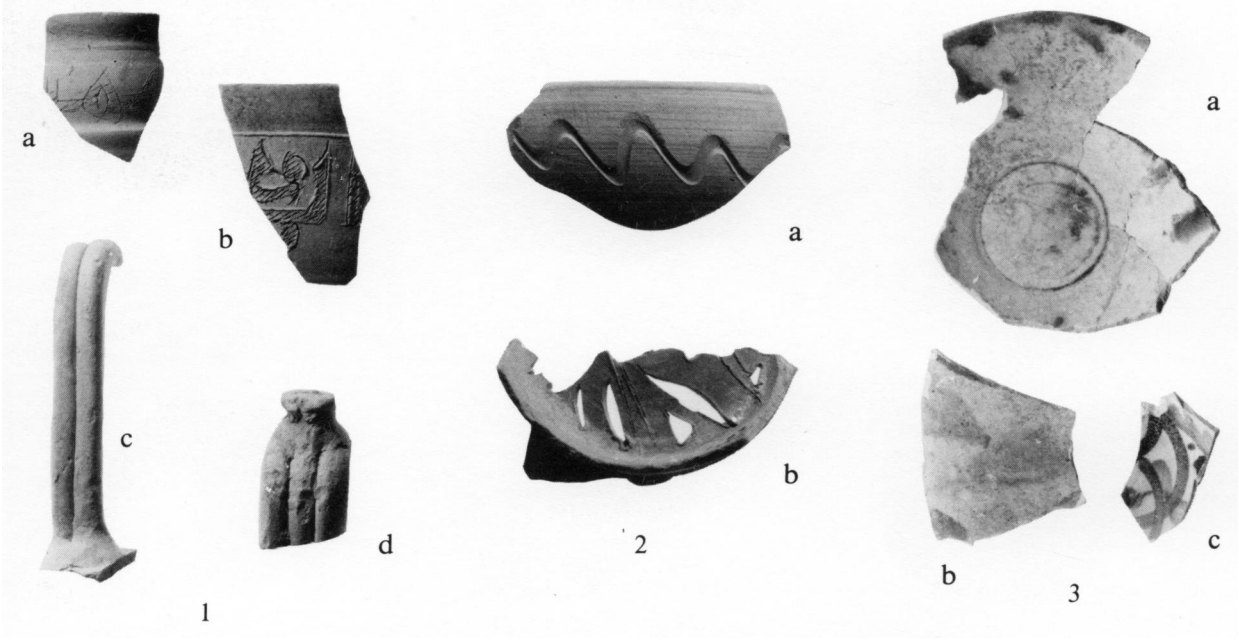
Pl. I. Umayyad pottery.

Pl. I: Umayyad Pottery

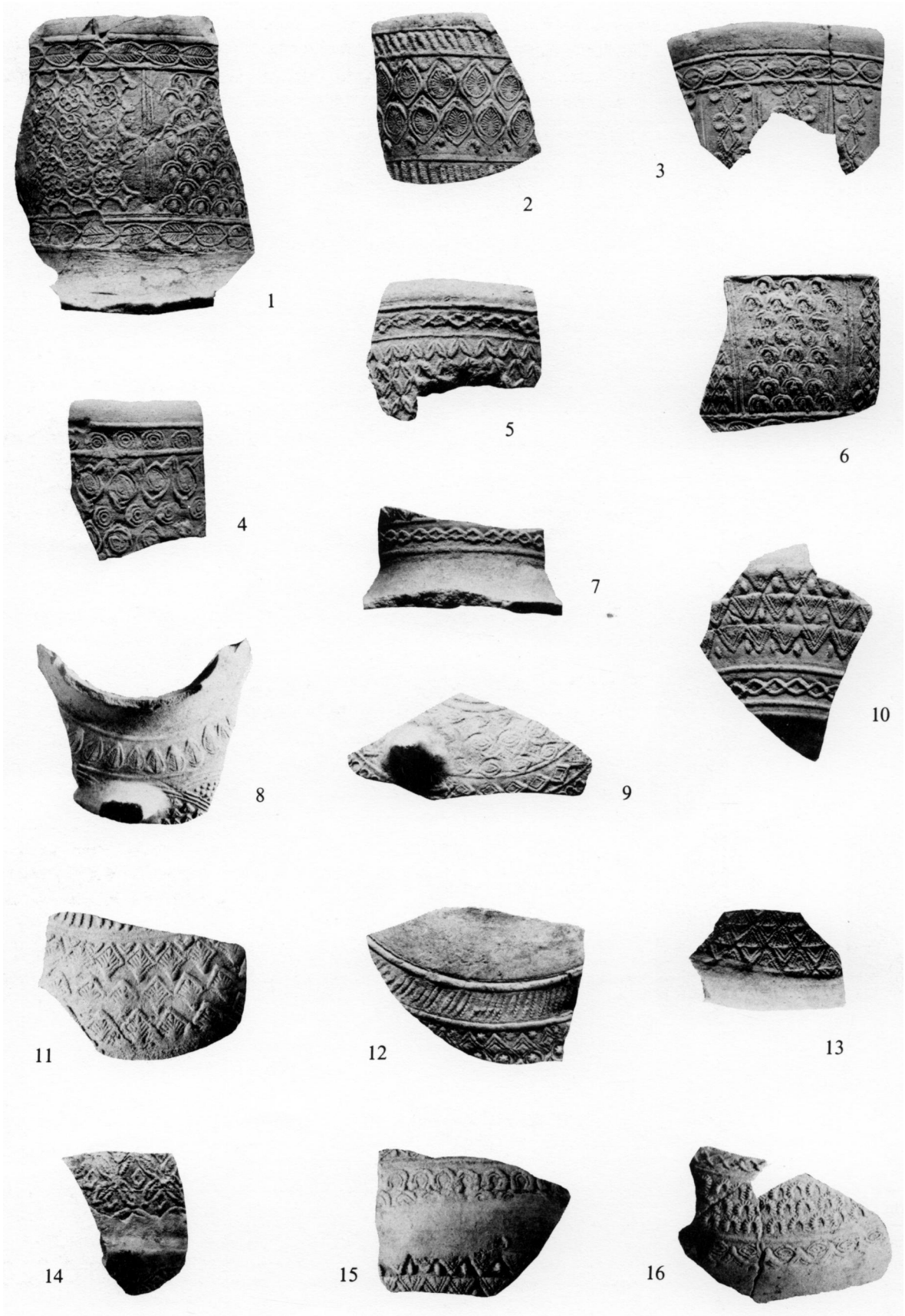
Form	Locus	Reg. No.	Description
1. jar	162	636/19	cream-pinkish ware; applied and stamped decoration
2. jar	162	636/3	whitish-cream ware; stamped decoration
3. jar	197	695/16	whitish-cream ware; stamped decoration
4. jug	243	780/7	whitish-cream ware; incised decoration
5. jug	68	525/7	whitish-cream ware
6a. knob handle	197	695/9	white ware
6b. knob handle	187	654/9	white ware
7. bowl	197	695/6	hard black ware; white grits; incised zigzag decoration
8. bowl	575	1881	hard black ware; white grits; incised decoration

Pl. II: Umayyad Pottery

Form	Locus	Reg. No.	Description
1a. jug	83	681/7	thin white ware; incised decoration
1b. jug	83	681/4	whitish-pink ware; incised decoration
1c. jug handle	126	375/20	white ware; pink core; white grits
1d. jug handle	126	375/18	white ware; pink core
2a. bowl	55	296/11	pink ware with white-gray spots
2b. filter	83	496/5	thin brown-red ware; white grits
3a. bowl	318	762/2	white ware; glaze, white ground; green and manganese-purple splashes
3b. bowl	126	375/29	pink ware; cream slip; manganese-purple spots; glaze inside only
3c. bowl	126	384/8	pink ware; green and manganese-brown decoration



Pl.II. Umayyad pottery.



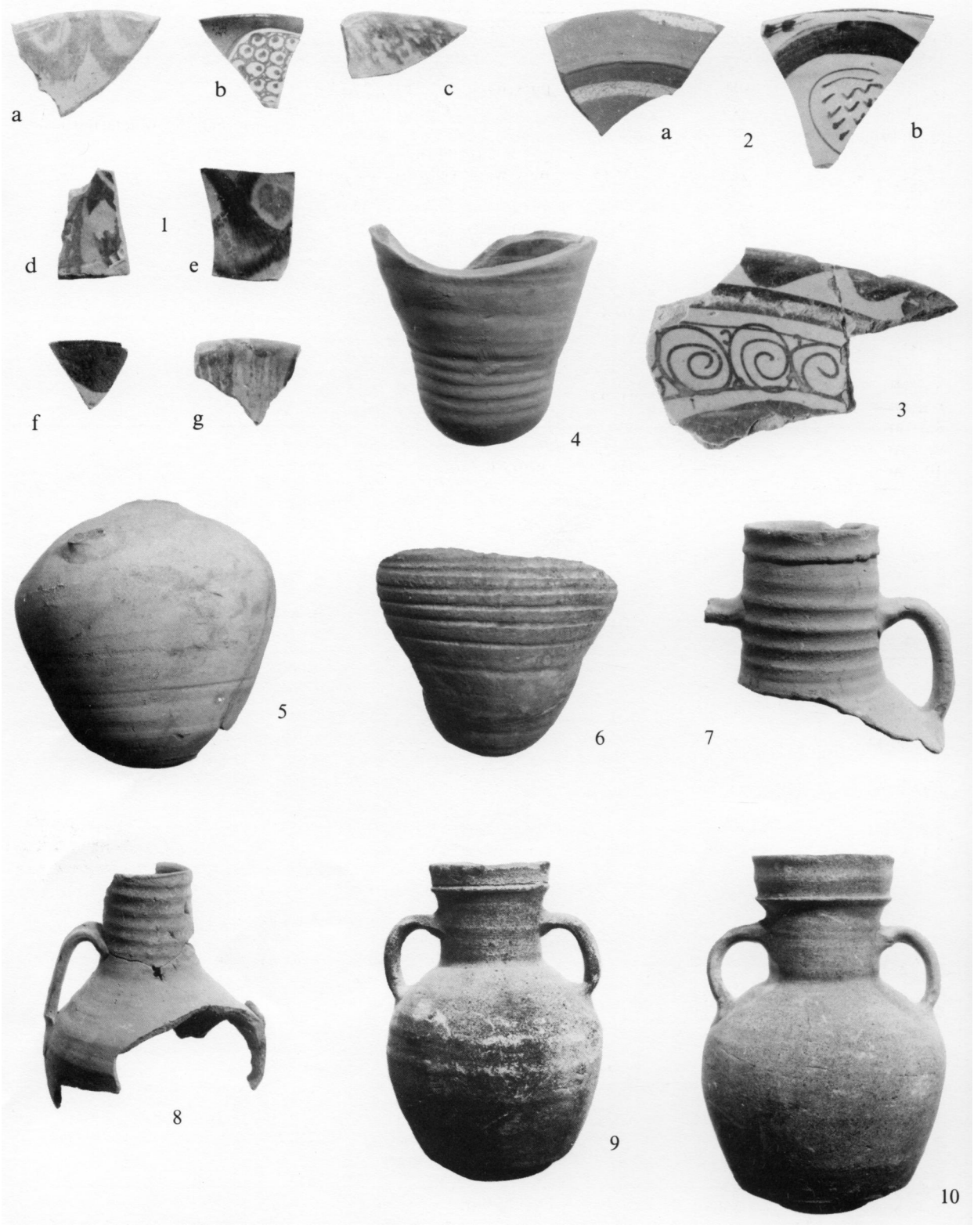
Pl. III. Umayyad pottery.

Pl. III: Umayyad Pottery

Form	Locus	Reg. No.	Description
1. jug	157	467/5	cream-colored ware; molded
2. jug	162	636/17	cream-white ware; molded
3. jug	197	695/7	pinkish-white ware, molded
4. jug	98	446/4	pinkish-white ware; molded
5. jug	197	695/19	cream-white ware; molded
6. jug	157	467/10	cream-white ware; molded
7. jug	197	695/14	cream-white ware; molded
8. jug	157	467/13	cream-white ware; molded
9. jug	162	636/13	buff ware; molded
10. jug	197	695/24	cream-white ware; molded
11. jug	157	528/1	cream-white ware; molded
12. jug	197	695/17	cream-white ware; molded
13. jug	197	695/23	white-cream ware; gray core, molded
14. jug	162	636/10	cream-buff ware; molded
15. jug	197	695/18	white ware; molded
16. jug	162	636/21	white-cream ware; molded

Pl. IV: Umayyad Pottery

Form	Locus	Reg. No.	Description
1. handle	197	697/10	white-cream ware; molded
2. jug	197	695/22	pink ware; molded
3. jug	162	636/11	white-cream ware; molded
4. jug	162	636/11	pinkish-buff ware; molded
5. jug	84	526/6	white-cream ware; molded



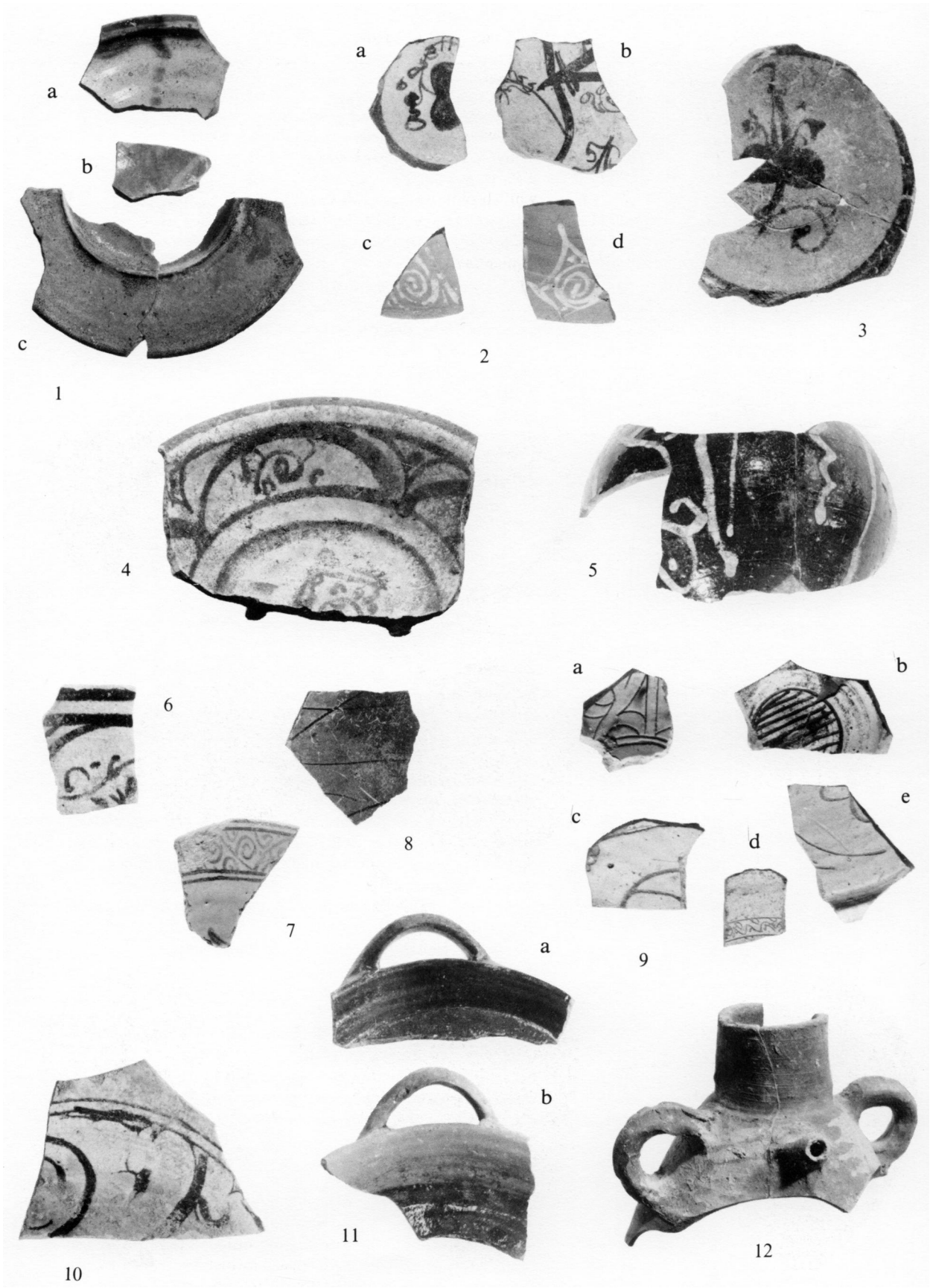
Pl. V. Fatimid pottery.

Pl. V: Fatimid Pottery

Form	Locus	Reg. No.	Description
1a. bowl	126	375/28	pink ware; green and yellow decoration; glaze inside
1b. bowl	101	14/5	pink ware; yellow-olive green lustre decoration
1c. bowl	193	620/10	pink ware; yellow glaze, green splashes inside
1d. bowl	62	251/5	orange ware; white grits; green, brown and yellow splashes inside; green glaze outside
1e. bowl	353	1106/4	pink ware; yellow-ochre ground
1f bowl	575	1881	manganese-brown and green decoration inside
1g. bowl	575	—	pinkish-gray ware; olive-and leaf-green splashes inside; spots of green outside
2a. bowl	21	323/10	orange ware; white grits; white painting
2b. bowl	110	14/5	white ware; olive-green lustre decoration
3. bowl	67	497/2	pale pink ware; reddish-brown lustre decoration on white glaze
4. jar	150	791/11	pinkish-orange ware
5. jar	150	791/26	grayish-pale brown ware; white grits; buff slip
6. jar	150	791/25	brick ware; white grits; buff slip
7. jar	150	791/22	orange ware; white grits
8. jar	150	791/15	orange ware; white grits
9. jar	150	791/2	gritty brown ware; white grits; buff slip
10. jar	150	791/1	gritty brown ware; white grits; buff slip; filter inside

Pl. VI: Crusader Pottery

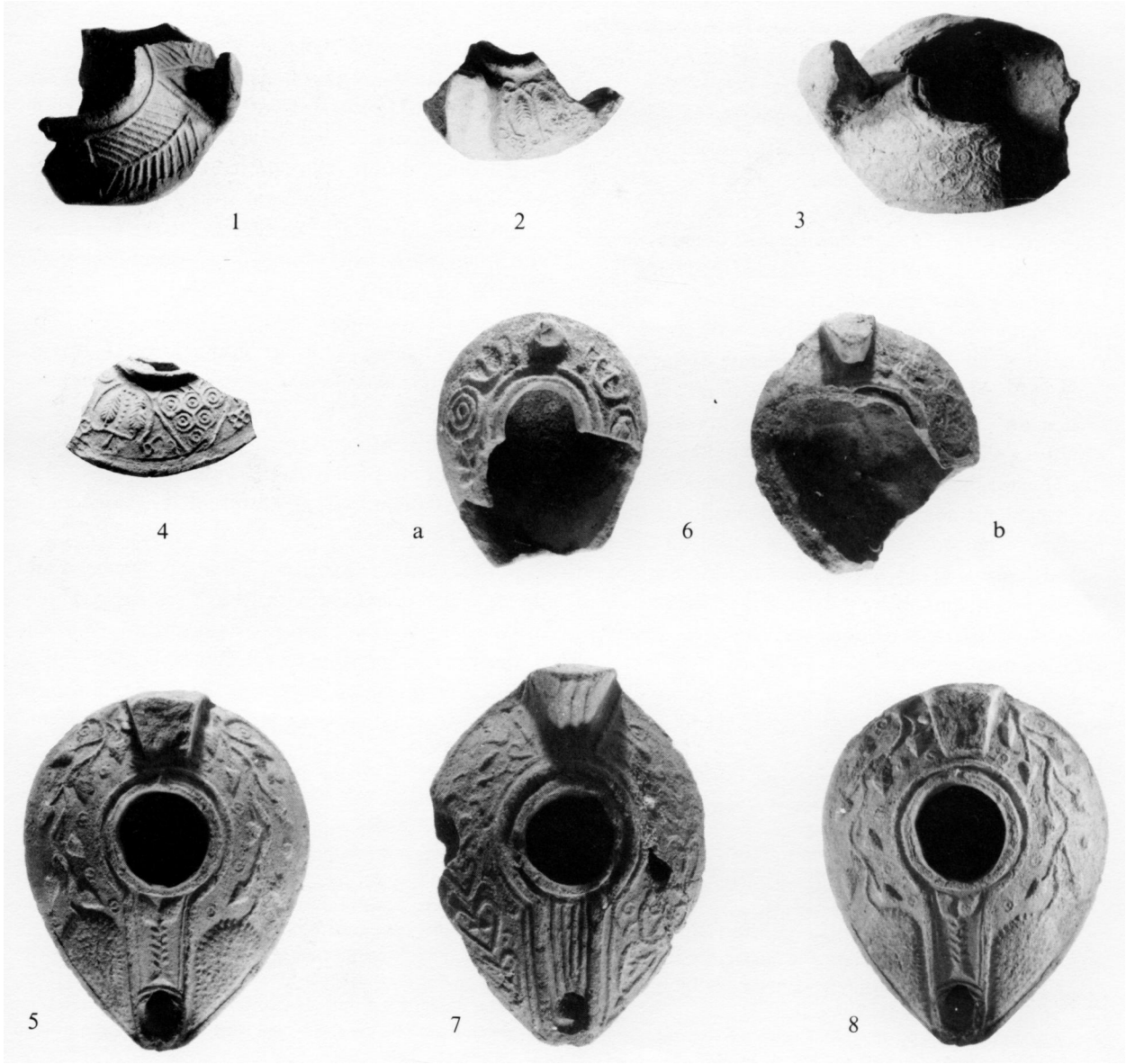
Form	Locus	Reg. No.	Description
1a. bowl	507	1597	brick ware; white grits; cream slip and glaze; green splashes
1b. bowl	503	1560	brick ware; white grits; green glaze; yellow slpashes
1c. bowl	409	1575	brick ware; cream slip; green-brown glaze on inside only
2a. bowl	508/509	1623	pink ware; white grits; white slip; manganese-purple painting under a transparent glaze
2b. bowl	411	1276	pink ware; white slip; manganese-purple painting under a transparent glaze
2c. bowl	410	1221/1	brick ware; yellow glaze inside; cream-white painting under glaze
2d. bowl	419	1552	brick ware; white grits; ochre glaze; cream-white painting under glaze
3. bowl	198	738/5	pink ware; white slip; manganese purple painting under transparent glaze
4. bowl	197	695/2	pink ware; cream slip; turquoise glaze inside only; manganese-purple painting
5. jug	152	460/3	gray ware; white grits; brown-green glaze; green decoration under glaze
6. bowl	67	497/1	pink ware; white slip; manganese-purple decoration under transparent glaze
7. bowl	28	243/5	pink ware; white slip; blue decoration under transparent glaze
8. bowl	124	11/5	brick ware; green glaze; Sgraffito decoration
9a. bowl	125	141/1	buff ware; cream glaze inside; green and ochre splashes
9b. bowl	523	1639	brick ware; pale yellow glaze; Sgraffito decoration
9c. bowl	16	190/12	pale brown-orange ware; white grits; pale yellow glaze inside; Sgraffito decoration
9d. bowl	405	1234	brick ware; pale yellow glaze
9e. bowl	406	1235	brick ware; pale ochre glaze
10. bowl	69	385/1	brick ware; white grits; pale yellow glaze with yellow and green splashes; carved decoration
11a. pan	83	496/6	brick ware; white grits; brown glaze inside; blackened by use
11b. pan	83	496/9	brick ware; white grits; brown glaze inside; blackened by use
12. small jar	515	1609	pink gray white ware; gray slip; black grits; white painting



Pl. VI. Crusader pottery.

Pl. VII: Umayyad Oil Lamps

Form	Locus	Reg. No.	Description
1. oil lamp	162	636/1	pink ware
2. oil lamp	197	695/5	pink ware
3. oil lamp	68	355/5	white ware; blackened by use
4. oil lamp	98	446/5	pink ware
5. oil lamp	456	—	whitish-pink ware; cream slip; blackened by use
6a. oil lamp	126	375/1	white ware; sign of " ϵ " on base; blackened by use
6b. oil lamp	146, 436	—	orange-pink ware; white grits; green glaze
7. oil lamp	456	1437	orange-pink ware
8. oil lamp	456	—	white ware; blackened by use



Pl. VII. Umayyad oil lamps.

B. The Pottery from the Late Byzantine Building (Stratum 4) and its Implications*

D. Adan-Bayewitz

INTRODUCTION

The Late Byzantine Building was the largest and most impressively built structure uncovered in the course of the Caesarea excavations. A significant corpus of pottery and other artifacts was found in the debris on the floors of the Building and in a cistern (L. 355) below one of the rooms (L. 354).[1] These finds presumably date to the last decades in the use of the Building, and were subsequently mixed with the debris of the disused structure. The half meter to meter of sand and earth covering these remains is followed by the Arab, Crusader and Bosnian levels.

A small amount of pottery was also recovered from below the plaster and beaten earth floors, and from their make-up.[2] These relatively few fragments and the associated coins were close in date to the pottery from above the floors and from the cistern (L. 355).[3] Hence, any attempt to segregate and present pottery groups based on stratigraphy would not be meaningful. The pottery from the Building is therefore treated as a single, homogeneous corpus deposited in the late Byzantine period. Chronology is based on the estimated deposition dates of 28 identifiable coins[4] found below, within and above the floors, and the estimated dates of comparable ceramic ware recovered at other excavations.

The three contiguous north-south rooms of the Building are represented by loci 127, 354, and 359, and the probe trenches cut through and below the floor in each of the rooms by loci 271, 361-362, and 363-364, respectively.[5]

The types and relative proportions[6] of the pottery recovered are, of course, directly related to the chronological range and function of the rooms. The pottery excavated at the Caesarea hippodrome and published by J. Riley[7] is of a much broader and generally earlier chronological range, and was recovered from a different functional context. Nevertheless, Riley's classification was found to be generally applicable, particularly with respect to the amphoras, and amenable to expansion, and is adopted wherever possible in order to avoid the confusion of two systems of classification.

In the following presentation the pottery forms are described and classified. The evidence for the contents of several of the amphoras is discussed, and information relating to the distribution and possible provenience of many of the vessels is noted. The pottery is quantified and presented according to locus in Table 2.

In the concluding section, Table 2 is discussed and the data are compared with Riley's statistics. This is followed by a discussion of the implications of the pottery corpus relating to the Building itself and to the broader questions regarding the trade relations of Late Byzantine Caesarea. Also presented are inferen-

* Figures for this section appear on pp. 122-129.

1. For a description of the excavation of the Building and its architecture, see pp. 44-48 above.
2. This pottery comprised about 10% of the total rims, handles, and bases of the Building pottery corpus (See Table 2). The floors of L. 127 and L. 354 were of plaster, while that of L. 359 was of beaten earth. See below, pp. 118-119.
3. Except for a higher proportion of residual ware. Four of the eight early Roman fragments were from the fill which comprised these floors (See Table 2).
4. For the coins, see pp. 137-148. The identifiable coins from the Building are: *L. 271*: C 142, C 211; *L. 361-362*: C 98; *L. 363*: C 248, C 249, C 250; *L. 355*: C 96, C 231, C 237, C 238, C 239, C 240; *L. 354*: C 216, C 217, C 218, C 219, C 220, C 222, C 224, C 225, C 227, and *L. 359*: C 232, C 233, C 234, C 235, C 242, C 245, C 246.
5. The stone column with the Hebrew word "shalom" (peace) incised upon it was found in the debris of L. 127 during the 1975 season. See pp. 45-46 and n. 179 below. Relatively little pottery was recovered from that room.
6. The pottery from the Building was sorted and body sherds were discarded some time before I first examined the assemblage. The remaining corpus of rims, handles, and bases from the Building was intact, with the few discarded exceptions recorded. The rims, handles, and bases are quantified in Table 2.
7. J. Riley, "The Pottery from the First Session of Excavation in the Caesarea Hippodrome," *BASOR* 218 (1975), 25-63.

ces relevant to the nature of the Byzantine-Moslem transitional phase at Caesarea, as well as to the identity of the occupants of the Building.

Several complete or nearly complete, apparently imported amphoras could not be identified with vessels previously classified in the literature. In order to facilitate their future identification, I have asked P. Goldberg of the Hebrew University to prepare a petrological report of these amphoras, appended to this chapter (see below, pp. 130-131).

AMPHORAS

The amphoras account for about 56% of the pottery rims, handles, and bases (RHB) recovered from the Late Byzantine Building. Together with the amphora lids and stoppers, the proportion increases to about 59%.

Amphora Type 1

Five residual rim fragments of relatively early "bag-shaped" amphoras were found in the Building. Two (Fig. 1:2) correspond to Riley's type 1A, catalog no. 8. The lip is a simple, slightly widened extension of the rim. Rims are 4.5-5.0 cm. high, with a ridge at their base. Section color is typically "brownish orange" (2.5 YR 5/8, 5 YR 5/8).[8]

Two rim fragments display traits of both Riley types 1A and 1B (Fig. 1:3). The rims are considerably lower than in the above examples (c. 3.3 cm.), but they retain the ridge at their base. The lip is triangular in section. Section color is "moderate orange" (2.5 YR 6/8, 5 YR 7/8) and varies somewhat on the exterior.[9]

The last example (Fig. 1:1) is typologically the earliest, comparable vessels having been found in first century C.E. contexts.[10] The tall flaring neck with a ridge at its base and the bright "moderate orange" (2.5 YR 6/8) section and exterior color[11] are characteristic of the type.

The above five fragments account for about 4% of the amphora rims, handles, and bases.

Amphora Type 1B

This "bag-shaped" amphora with two ring handles on the shoulder was the most common type found in the Building, accounting for about 39% of the amphora RHB (Fig. 1:4-7).

The very narrow shoulder grooving and relatively low rims differentiate these amphoras from Riley's examples (nos. 1, 2), and are presumably characteristic of the later Byzantine form of the vessel.[12]

The rim is vertical with an outer bulge at about midheight. Rim heights are generally 2.5-3.0 cm., while their diameters range from approximately 9 to 10 cm.[13] The lip is plain but is in some cases flattened or rounded to varying extents. There is no ridge at the base of the rim.

The shoulder is invariably grooved with very narrow (4-6 per cm.) and often very shallow grooves; the body and base grooving is wider (1.5-2.0 per cm.). There is an ungrooved area of 1.5-2.5 cm. where the shoulder meets the body. The base is rounded.

Clay accretions are generally found on or just below the rim and on the shoulders. Some of these may well be attributed to the use of a wet chuck in the manufacturing process.[14]

The color of amphora type 1B is very uniform.

8. One example was fired to a darker and duskier "light grayish reddish brown" (5 YR 6/2) exterior.
   Colors are according to the *Munsell Soil Color Charts* (Baltimore, 1975). The color name equivalents are taken from R.H. Smith, *Pella of the Decapolis* (The College of Wooster, 1973), I, pp. 244-246; these are more distinctive than the *Munsell Soil Color Chart* equivalents.
   For a discussion of ceramic color, see A.O. Shepard, *Ceramics for the Archaeologist* (Washington, D.C., 1957), pp. 102-113.
9. "Pale orange yellow" (10 YR 8/4) and "moderate yellowish pink" (5 YR 7/6) in our examples.
10. See, e.g., R. de Vaux, "Fouille au Khirbet Qumrân, Rapport Préliminaire," *RB* 60 (1953), 96-97, Fig. 2:2 for an amphora of cylindrical form with a similar rim.
11. In our example, the exterior was discolored in firing to a "light grayish brown" (7.5 YR 6/2).
12. Riley (above, n. 7) notes that "some later versions had very narrow grooving on the shoulder" (p. 26), and one upper amphora fragment is illustrated (no. 3) and referred to as type 1C. But the rim is much higher than in our examples and it lacks the mid-rim bulge characteristic of the type found in the Building. No type 1C rim fragments are recorded in Riley's tables; forty-four body sherds of type 1C are noted in the latest hippodrome level, H4A (Table 8).
13. In four examples the rim leans slightly inward. Two other amphoras of this type have unusually high rims (3.6 cm.). Other exceptional rims include one of 2.1 cm. and one of 2.4 cm. in height, two of 8 cm. in diameter and one of 11 cm. in diameter. The proportions measured are of course quite arbitrary; these amphoras are otherwise indifferentiable from the majority of the 1B vessels.
14. See J. Landgraf, "Keisan's Byzantine Pottery," in: J. Briend and J.B. Humbert, *Tell Keisan* (Paris, 1980), pp. 71-72 and Fig. 23a.

Ill. 92. Amphora type 1B, upper vessel fragment.

Section color is "light brown" to "moderate orange" while exterior color is "moderate yellowish pink."[15] A petrological account of the 1B fabric by D.P.S. Peacock is appropriate to our examples and is appended to Riley's report.[16]

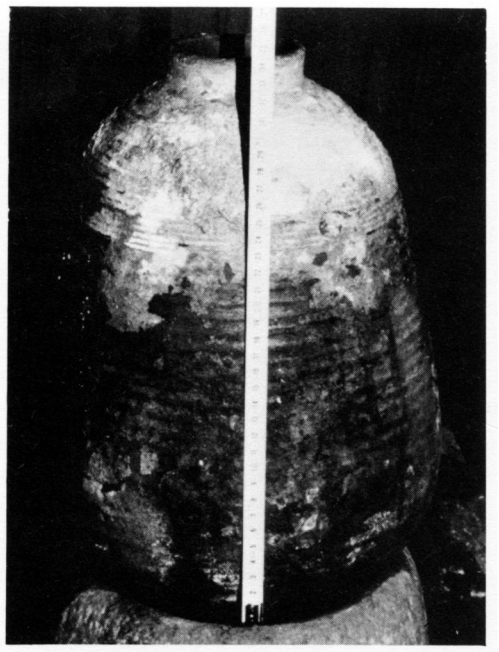
One or more small holes, 0.4 to 0.6 cm. in diameter, had been drilled into ten of the type 1B amphoras recovered.[17] In nine of those vessels the holes were drilled in the lower shoulder area, between the midpoint of the handle and the lower point of its attachment, or just below that point. In one case (Fig. 1:4, Ill. 92) a hole appears in the upper body, about 3 cm. below the shoulder.

In only eight other type 1B fragments has the shoulder been preserved to the area in which holes were drilled. Since the average arc of amphora shoulder circumference preserved in the eighteen examples is only about 23% of the total shoulder circumference, and ten of eighteen fragments (about 56%) had holes drilled in them, it would seem that a large proportion of the type 1B amphoras in the Building were so punctured.[18]

A drilled hole of similar dimensions was found in the shoulder or body of several types of amphoras dating to the Roman and Byzantine periods, from Caesarea and other sites.[19] About half of the necks or upper shoulders and two of the stoppers preserved in resin-lined amphoras (assumed to have been used for wine) at the late 6th-mid-7th century Monastery of Epiphanius at Thebes (of the same form as Caesarea type 7) were also punctured in this fashion.[20]

Two explanations for the shoulder holes have been offered: to provide an outlet for the escape of carbon dioxide emitted during the continuing fermentation of new wine, after the initial fermentation (the hole could have been subsequently sealed); to allow pouring without the need to open the stopped and sealed vessel; or, for both the former and latter purposes.[21] Although the former explanation seems tenable, further discussion is warranted on this phenomenon and its possible purpose.

15. The name equivalents do not reflect the uniformity of color in this case. Of the rim section colors, the hue (the position of the color in the spectrum) is medium yellow-red (5 YR) in 35 examples and slightly redder (2.5 YR) in four. The values (lightness) are light (22 fragments with the value of 6 and 15 of 7), with one moderate example (5), while the chroma (brightness or purity) is pure (20 of 6 and 18 of 8). The most common section colors are 5 YR 6/6, 5 YR 7/6 and 5 YR 6/8, each in 10 examples. There is a visible core ("light grayish yellowish brown" — 10 YR 6/3-7/3) in only two examples.
Exterior color varies even less. Hue is medium yellow-red (5 YR) in 34 examples, redder (2.5 YR) in 3, and yellower (7.5 YR) in one example. Thirty-three fragments are very light (25 valued at 7 and 8 at 8) and 5 are light (6). The chroma is moderate (26 of 6 and 10 of 4), two examples pure (8). The prevalent exterior colors are 5 YR 7/6 in 22 examples and 5 YR 8/4 in 7 examples. Two fragments were discolored to a yellowish hue ("pale orange yellow" — 10 YR 8/3-8/6) on portions of their exterior.
16. Riley (above, n. 7), p. 30. Also see below.
17. Three vessel fragments with more than one hole were recovered. These were drilled at approximately the same height. In one fragment, two holes are at a distance of 1.1 cm., in another, at an arc distance of 20.0 cm., while in a third, five or six holes were drilled along an arc of 18.4 cm. Regarding multiple adjacent holes, see below, n. 30. In one case the hole is approximately 1 cm. in diameter, but the area of the hole was worn away, perhaps after the vessel was discarded. The ten punctured vessels include one body sherd.
18. The average circumference at the shoulder base of type 1B is 80.5 cm. (based on measured drawings). The only example in which the entire shoulder was recovered (Fig. 1:4) measures 80.6 cm. at its base. The average shoulder circumference recovered in the ten punctured amphoras is 20.8 cm., while in the eight non-punctured examples the average is 16.2 cm. The amphoras tended to break where the holes were drilled, their weakest point; in only two examples has the complete circumference of the hole been preserved.
19. For example, Caesarea types 2, 3, and 10 below. Also see A. Zemer, *Storage Jars in Ancient Sea Trade* (Haifa, 1977), Pl. and Fig. 56 (Caesarea type 1B, recovered off the coast of Atlit), and U. Zevulun and Y. Olenik, *Function and Design in the Talmudic Period,* Ha'aretz Museum (Tel-Aviv, 1979), Figs. 103-105, 123, 125, and 128. Cf. Y. Aharoni, "The Caves of Nahal Hever," *'Atiqot* 3 (1961), 155, Fig. 8:11; Pl. 21:3. My thanks to A. Zemer for allowing me to examine publications he collected in the course of the preparation of his book.
20. See H.E. Winlock and W.E. Crum, *The Monastery of Epiphanius at Thebes* (New York, 1926), I, pp. 78-79, 98-103, Pl. XXIX, A. Also see A. Lucas and J.R. Harris, *Ancient Egyptian Materials and Industries*[4] (London, 1962), pp. 18-19; cf. C. Hope, *Jar Sealings of the 18th-Dynasty: A Technological Study* (Warminster, 1977), p. 7.
21. See references in n. 20; also see Y. Brand, *Klei Haḥeres Besifrut Hatalmud (Ceramics in Talmudic Literature)* (Jerusalem, 1953), pp. 136-143; S. Avitzur, *Man and His Work* (Jerusalem, 1976), p. 96 (Hebrew); Zemer (above, n. 19), pp. 115-116 (who also suggests other explanations for perforated

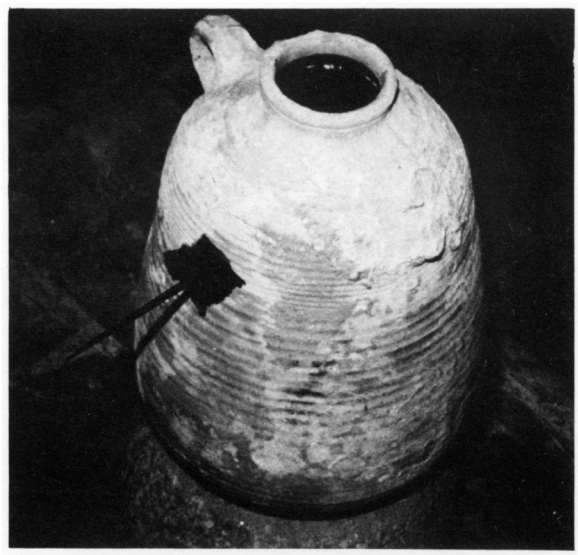


Ill. 93. Experiment amphora.

If we assume, for the moment, that amphora type 1B contained wine, the small hole in the wall of the vessel would seem ostensibly counterproductive. If the hole were not sealed, air would enter via this outlet, and, since the vessel would not be filled above the level of the hole, there would be considerable airspace (or "headspace") above the liquid. The presence of oxygen has generally been considered detrimental to the fermentation of wine; it is well known that airborne microorganisms cause wine to become acetic, hence alcoholic fermentation and processing of most wines is usually conducted under nearly anaerobic conditions.[22]

On the other hand, it is also clear that a small amount of oxygen is essential for the normal maturation of certain (particularly red) wines. In modern wine technology, oxygen enters the wine during several stages of the processing; the common wood tank or barrel used in the ageing of certain wines is porous, allowing oxygen to slowly penetrate. This limited amount of oxygen is considered beneficial to the quality of the wine. Furthermore, recent studies have led to a better understanding of the beneficial effects of controlled oxidation upon certain wines, and particularly on their aroma. Controlled oxidation is now deliberately employed to improve the aroma or accelerate the maturation of certain wines.[23]

In their instructions for the preparation of special aromatic wines, Cato and the rabbinic sources of the Roman period emphasize that the amphora should not be filled to the top. Pliny extends this instruction to all wines.[24] Hence the beneficial effects of limited



Ill. 94. Experiment amphora, filled and stopped.

amphoras found in tombs); Zevulun and Olenik (above, n. 19), pp. 26*-27*, 46-50, Figs. 103-104; M.H. Callender, *Roman Amphoras* (London, 1965), pp. 43-44. H.S. Robinson explains the hole in the shoulder of narrow-necked fusiform amphoras (close to Caesarea type 4) as evidence of the reuse of these vessels for drawing water; *Pottery of the Roman Period, V: The Athenian Agora*, p. 17.

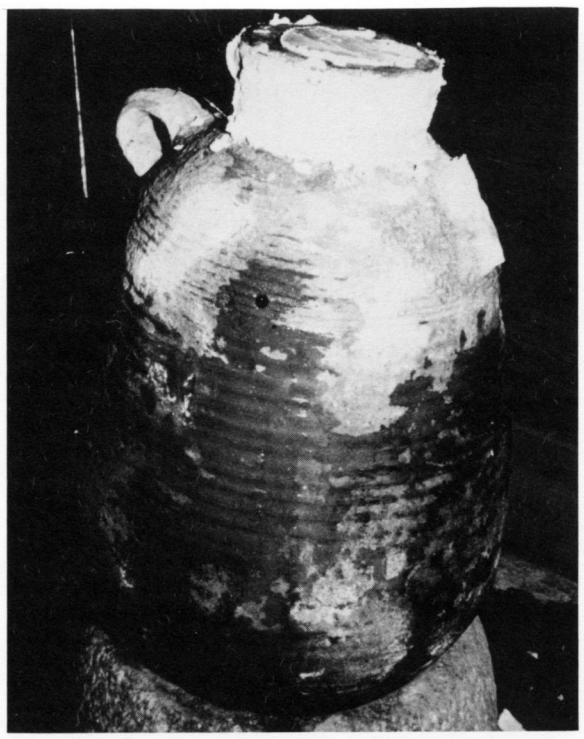
22. See M.A. Amerine, H.W. Berg, and W.V. Cruess, *The Technology of Wine Making*[3] (Westport, Conn., 1972), pp. 199-200 and M.A. Amerine and V.L. Singleton, *Wine* (Berkeley, 1975), pp. 58, 60.

23. See Amerine *et al.*, (*Technology*, above, n. 22), pp. 282-284. For a recent study on the aroma components of red wine, see M. Bertuccioli and R. Viani, "Red Wine Aroma: Identification of Headspace Constituents," *Journal of the Science of Food Agriculture* 27 (1976), 1035-1038. For accelerated maturation, see Amerine *et al.* (*Technology*, above, n. 22), pp. 288-289. A few wines (flor sherry and other "madeirized" wines) are subjected to extensive oxidation (*ibid.*, pp. 415-418; Amerine and Singleton [above, n. 22], pp. 162-163, 167-168).

My thanks to Y. Gat, enologist at the Carmel Oriental Wineries in Rishon le-Zion, Fr. B. Rami of the Trappist Monastery of Latroun, Fr. M. Frasci of Cremisan, and E. Shorr of Zion Wineries in Jerusalem for their explanations of the role of oxidation in the ageing and maturation of some red wines.

24. See Cato, *On Agriculture*, LCL (London, 1960), CXIII; *Mishna Menaḥot* 8, 7; *Tosefta Menaḥot* 9, 10; Pliny, *Natural History*, LCL, XIV: 135. Also cf. the generalized interpretation of the above Tosefta by Zevulun and Olenik (above, n. 19), pp. 27*, 46.

This and subsequent discussions are based on the generally accepted assumption that the techniques of winemaking and storage, and the storage of other products, underwent insig-



Ill. 95. Experiment amphora, filled and sealed, unstopped.

amounts of air on the aroma of certain wines seem to have been well known in the Roman, and presumably Byzantine periods. A small hole in the wall of the amphora, such as the holes under discussion, coupled with headspace, may have allowed the limited presence of air thought necessary for maturation and improving the aroma of certain wines.[25]

The second suggestion for the use of the hole, i.e., to allow pouring without the need to open the stopped and sealed vessel, would seem unreasonable, *a priori*, as anyone who has tried pouring from a can of juice or other sealed vessel containing a liquid after providing a single small hole can attest; an additional opening is required in order to obtain a constant, steady flow of liquid. If an additional opening is not provided, depending on the size of the extant hole, either atmospheric pressure will prevent the issue of the liquid, or the flow will be irregular and inconvenient, spurting out as small amounts of air are admitted.

However, in order to provide a conclusive solution to the question of the efficacy of a single small hole as a pouring outlet in ancient amphoras, I decided to investigate the problem, employing a Byzantine amphora, complete except for a hole of 0.6 cm. diameter drilled in the shoulder (and broken handle) (Ills. 93, 94, 95).[26] The amphora was filled with water in which sugar had been dissolved, to obtain a liquid with viscosity somewhat similar to that of wine.[27] The vessel was then either left open, stopped with a pottery stopper, or stopped and sealed with the pottery stopper and plaster, means which were employed to seal amphoras in antiquity[28] (Ill. 95). The amphora was then tilted to the side with the hole.

It was found that the small hole could be used for pouring only when a supplementary opening was provided. When no such additional opening was provided, and the vessel was filled to below the level of the hole (and stopped and sealed), the liquid issued in spurts when the amphora was tilted, with much liquid pouring down the side of the vessel. When the sealed amphora was filled above the level of the hole (after the hole was stopped), and the hole was opened, the spurts were smaller in quantity and more irregular. At near capacity, almost no liquid left the vessel (Ills.

nificant change in Palestine during the Roman and Byzantine periods. For descriptions of these techniques in Palestine, see Avitzur (above, n. 21).

25. Cf. B. Cizik who suggests that the above *Menaḥot* texts may refer to a type of sherry (*Otzar HaTzmachim* [Tel Aviv, 1952], pp. 547-8, 553). The extent of air seepage through the walls of pottery amphoras has not been studied. Many amphoras were lined with resin (rosin), as attested by the archaeological evidence and literary sources (see, e.g., Lucas and Harris [above, n. 20], pp. 19-20 and *'Avot de Rabbi Nathan* A, 14). Also see p. 00 and n. 35 below. A small shoulder hole would have also been an effective safety valve during later malolactic fermentation. In the course of this capricious fermentation, which occurs especially in red wines, carbon dioxide is also emitted, and an outlet is essential. However, the extent of the acquaintance with this fermentation in the Roman-Byzantine period is questionable. See Amerine and Singleton (above, n. 22), pp. 60-62; Amerine *et al.* (*Technology*, above, n. 22), 284-288, 584-587.

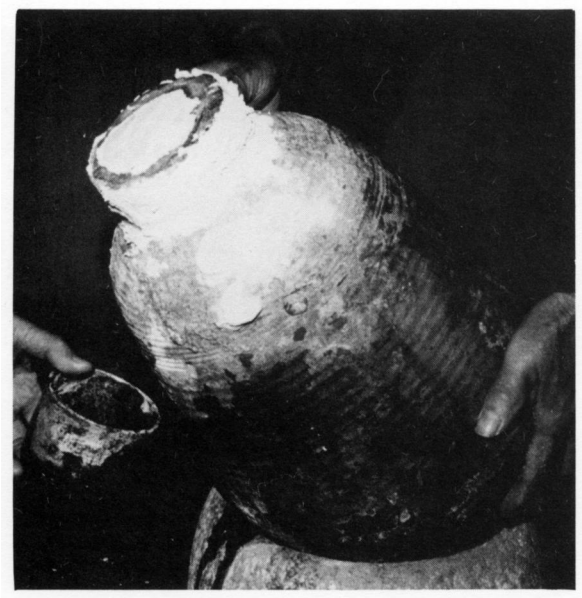
26. The experiments were conducted with the kind permission and assistance of A. Eitan, Director of the Department of Antiquities and Museums, and Dr. L.Y. Rahmani, Curator of Antiquities of the State of Israel, and with the cooperation and assistance of V. Sussman, D. Kiel, and especially S. Nahmani. My thanks to all.
The amphora used was excavated at 'Ara, 17.5 km. east of Caesarea, by F. Berger and G. Edelstein. The pottery from this excavation was published by V. Sussman, "A Burial Cave at Kefar 'Ara," *'Atiqot* 11 (1976), 92-101. For perforated amphoras from this excavation, of the same form as that used in the experiment, see *ibid.*, Pl. 29:4 and Zevulun and Olenik (above, n. 19), Figs. 105, 128.

27. See *Mishna Sukka* 4, 9. Two kilos of sugar were dissolved in the water. The capacity of the amphora used is approximately 12.7 liters; 11.4 liters are contained up to the level of the hole.

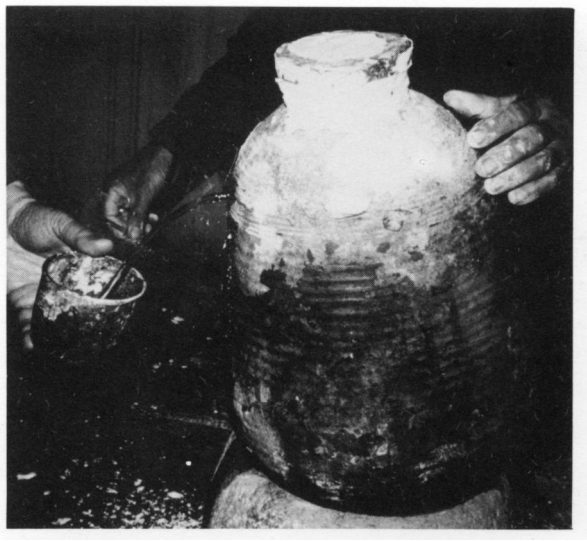
28. See, e.g., *Mishna Kelim* 10, 2.

95, 96). When the vessel was then vigorously rocked, very small and irregular spurts left the hole as small amounts of air were admitted.

Hence the drilled hole, generally 0.4-0.6 cm. in diameter, could not have served for pouring without an additional opening. When such an opening is provided, and even freeing the stopper while leaving it in place is sufficient for this purpose, the liquid pours out in a steady narrow stream, and a cup may be filled without spillage (Ill. 97). The amphora can be subsequently set vertical and the hole stopped (Ill. 94). The small hole could have thus served as a useful outlet for gradual consumption of a liquid content, but only when an additional opening was provided. The tapping of amphoras from the side, as attested in the rabbinic literature of the Roman and Byzantine periods,[29] should be understood in light of these experiments.



Ill. 96. As Ill. 95. Amphora tilted.



Ill. 97. Experiment amphora, seal broken.

Thus, if amphora 1B was indeed used for wine, the small drilled hole apparently could have served one or more important functions (outlet for continuing fermentation and gradual consumption, inlet for oxidation). But the small hole could have served for gradual consumption of other liquids as well.[30]

The problem of the contents of amphoras in antiquity, a crucial issue in the interpretation of archaeological evidence relevant to ancient trade, is not easily investigated. Actual remains of contents are usually recoverable only in underwater excavations; painted inscriptions are rare and often difficult to decipher and interpret; and amphoras were often reused to contain other products. Pottery amphoras served as the standard storage container in the geographical and chronological context under discussion. They were used for a wide range of solid and liquid contents, as attested by both the archaeological evidence and literary sources.[31] When larger consignments of amphora-borne products were involved, a definite

29. See especially *Mishna Shabbat* 22. 3, *Mishna Kelim* 12, 5, *Tosefta Menaḥot* 9, 10 and *B Shabbat* 146a. Cf. Brand (above, n. 21), pp. 137-138, and nn. 338, 345 and 361. Rabbinic references to holes in amphora walls, mostly from tannaitic sources of Roman Palestine, and Amoraic Babylonian texts, have been collected and discussed by Brand, *ibid.*, pp. 134-139. Also see J.N. Epstein. "Notes on Post-Talmudic Aramaic Lexicography," *JQR* 12 (n.s.) (1921-1922), 349-350. Presumably, when wine was to be checked (e.g., *Mishna Gittin* 3, 8 and Columella, *On Agriculture*, LCL [Cambridge, Mass., 1968], XII, 30; Brand [above, n. 21], p. 140), or separated from the lees, the hole in the vessel wall could have also served as a convenient outlet. For alternative means of extracting liquid from amphoras, see Brand, *ibid.*, pp. 136-143 and Zevulun and Olenik (above, n. 19), pp. 27*-28*, 50-51.

30. Multiple adjacent holes found in amphora fragments on rare occasions would probably have served to ultimately empty a vessel, when the seal and stopper were difficult to dislodge. Mr. Nahmani and I found the freeing of the sealed amphora stopper, without injuring the amphora, a very tedious task. For amphora fragments with multiple holes, see n. 17 above and M. Egloff, *Kellia, La Poterie Copte* (Geneva, 1977), II, Pl. 22:11 (type 187).

31. For a presentation of the contents of amphoras recovered in a number of underwater excavations, see J.-P. Joncheray, *Essai de Classification des Amphores Découvertes lors de Fouilles Sous-marines* (Frejus, 1976). For amphora contents mentioned in rabbinic literature, see Brand (above, n. 21), pp. 151-162.

relationship of form to content would seem intuitively reasonable; in such shipments, the amphoras used would presumably have been appropriate to the product carried, and the product could have been easily identified by its container. However, this relationship of one amphora form to one use has been convincingly resolved in rather few cases (Dressel 1-4, 20, perhaps also 7-13). For small-scale commerce, and especially local trade in small numbers of amphoras, and for storage in the home, archaeological evidence and the rabbinic sources seem to indicate that similar amphoras were used for diverse contents.[32]

Further support for this contention is suggested by the recent publication of 3rd-4th century amphoras from Meiron in the Galilee, and from Qedumim, about five kilometers south of Samaria-Sebastia. The Meiron amphoras were found containing wheat, fûl beans, barley and walnuts, while those from Qedumim, of very similar form, were found in an olive press installation, with other vessels and equipment appropriate for the processing and storage of olive oil.[33]

On the other hand, there is important evidence of the suitability in form or fabric of particular amphora types for specific products, or groups of products, or their adaptation for use with certain products. Thus amphoras of the Roman period which were used for the carriage of fish products, based on painted inscriptions and actual remains of fish, are characterized by a wide, splaying rim, 14-20 cm. in diameter, with still wider exceptions.[34] The fabric of one of the Caesarea amphoras, type 3, seems to have been particularly well suited for oil (see below); and amphoras bearing wine, fish and fish sauce were often adapted for their task by the provision of a resinous lining.[35]

What, then, were the likely contents of amphora type 1B, by far the most common amphora type in the Late Byzantine Building and close in form and fabric to the overwhelmingly most common amphora in the Byzantine levels of the Caesarea hippodrome?[36] The common occurrence of the small holes would seem to rule out a solid or semi-solid content, which would not have been a useful feature for such products. As we have seen, the drilled holes could have served for liquid products, and perhaps served more than one function if the vessels were used for wine.

The possibility that amphora type 1B was indeed used for wine is supported by both archaeological evidence and rabbinic sources which attest to the importance of wine production and trade to the economy of Roman-Byzantine Caesarea. Among the few inscriptions recovered from Caesarea, two mention wine dealers.[37] The grapes of Caesarea and a wine press which served as a landmark of that city are mentioned in early rabbinic literature.[38] In comparison, the production or processing of olives is not similarly noted. Indeed, the Galilee and other hilly

32. On the question of the relationship between form and content of amphoras, see A. Tchernia, "Les amphores romaines et l'histoire économique," *Journal des Savants* (1967), 225-229 and F. Zevi in *The Journal of Roman Studies* 57 (1967), 234-238 (both reviews of Callender [above, n. 21]); A.J. Parker, "Roman Amphoras: A Review Article," *The International Journal of Nautical Archaeology and Underwater Exploration* 1 (1972), 226 and idem, "The Evidence Provided by Underwater Archeology for Roman Trade in the Western Mediterranean," in *Marine Archaeology*, Proceedings of the Twenty-Third Symposium of the Colston Research Society (London, 1973), p. 366; Callender, *ibid.*, pp. 13-18 (especially forms 4, 6-8); and the summary by K. Muckelroy, *Marine Archaeology* (Cambridge, 1978), p. 74. On the rabbinic sources, see Brand (above, n. 21), pp. 151-162; and see p. 00 and n. 71 below.

33. See E.M. Meyers, J.F. Strange and C.L. Meyers, *Excavations at Ancient Meiron* (Cambridge, Mass., 1981), pp. 60-68; I. Magen, *The Archaeological Discoveries at Qedumim-Samaria: Qedem Museum* (Jerusalem, 1982), Area C, Building 1 — The Oil Press, and photograph with caption "Finds from the oil press, Area C."

34. See D.P.S. Peacock, "Amphorae and the Baetican Fish Industry," *The Antiquaries Journal* 59 (1974), 232-243, Figs. 3-4; D. Colls *et al.*, "L'épave Port-Vendres II et le commerce de la Bétique à l'époque de Claude," *Archaeonautica* 1 (1977), 40, Fig. 15; and Callender (above, n. 21), pp. 17-18, who writes of the relationship between form and function in his Form 8 (Dressel 7-9).

35. For a discussion of the nature of the amphora linings, see W.A. Oddy and J.C. Bateman, "Postscript — Analysis of Amphora Linings," in *Marine Archaeology* (above, n. 32), 381.
It is sometimes presumed that resin-lined amphoras always contained wine (e.g., G.F. Bass, *Archaeology Beneath the Sea* [New York, 1975], pp. 138, 145), but amphoras so treated containing remains of fish, or labelled as containing fish sauce, have been recovered at sea; see Colls *et al.*, (above, n. 34), 40-43 and Pl. 15; Parker (above, n. 32), pp. 371, 380. Also see A.J. Parker and D.M. Squire, "A Wreck of the Late 2nd Century AD at Terrauzza (Siracusa, Sicily)," *International Journal of Nautical Archaeology and Underwater Exploration* 3 (1973), 32. Pliny indicates that resin-lined amphoras did not contain oil (*Natural History* XIV:123).

36. See Riley (above, n. 7), 26-27, Tables 1, 3, 6, 7, 8, who calculates that type 1B accounted for around 64% of the amphoras in 6th century C.E. levels of the hippodrome.

37. See M. Schwabe, "An Inscription of a Winedealer from Caesarea," *Tarbiz* 14 (1943), 214 (Hebrew).

38. See L.I. Levine, *Caesarea Under Roman Rule* (Leiden, 1975), pp. 51-52, 183 and nn. 45, 50-51.

Ill. 98. Amphora type 1Y, handle and body fragment.

regions of the country were always known for their production of olives, not the coastal plain.[39] The fact that amphora type 1B was by far the most common amphora in Byzantine Caesarea suggests the possibility that this vessel contained wine produced in Caesarea and the surrounding area. However, although wine is the most likely single content of amphora type 1B, considering the present evidence, the possibility that these vessels may have served for one or more other products, such as water for example, particularly in secondary use, cannot be discounted.

Amphora Type 1Y

These type 1 amphoras with a yellow-white painted design on the body were rare in the Byzantine Building; the single body sherd with handle (Ill. 98) accounts for less than 1% of the amphora RHB.[40]

An ungrooved band, measuring *c.* 90 cm., on the body of the vessel defines the upper limits of the painted decoration, which extends at least 10 cm. into the grooved area below.[41] The grooving is angular and similar above and below the plain band (2.5 per cm.).

The yellow-white design seems to consist of pairs of parallel lines intersecting at opposite slopes to form a cross motif. A horizontal line seems to bisect the crosses.[42]

Section color is "moderate orange" (5 YR 6/8); exterior color varies between "moderate orange" and "moderate yellowish pink" (2.5 YR 6/8 and 5 YR 7/6). The painted design is "pale orange yellow" (10 YR 8/3).

Amphora Type 2

The form of this amphora is cylindrical, with two ring handles. The narrow body rises to an ill-defined near vertical rim, 10.5-11.5 cm. in diameter (Fig. 1:8-9). One recovered rim fragment (Fig. 1:10) is more clearly defined,[43] another (Fig. 1:11) turns inward, in a near "hole-mouth" stance.[44]

The foot is pointed and hollow, and rounded or slightly flattened at its base (Fig. 1:12, 13). There are zones of ridging in the lower body area and/or just above the base (1-4 per cm.). The upper parts of the vessel are all plain (unridged), and there are invariably accretions of clay in the area between the handles and lip. These accretions are not easily removed and are in a fabric identical to that of the vessel. Hence these pieces of clay adhered to the vessel in the manufacturing process and were fired with the vessel. Landgraf's explanation of the accretions as due to the use of a wet chuck in the manufacturing process would thus seem tenable.[45]

The vessel wall is relatively thick. Section color is almost invariably "light brown" (5 YR 5.5/6 to 5 YR 6/7),[46] with a slightly grayish core in about a third of the examples.[47] Exterior color is drab brown to the eye, ranging from 5 YR 6/4 to 5 YR 7/6.[48] D.P.S.

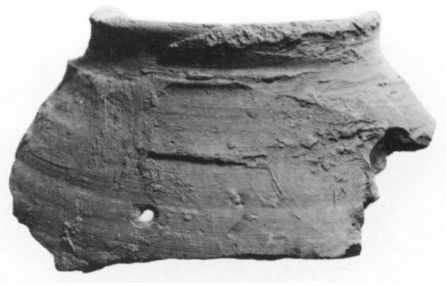
39. See M. Avi-Yonah, *The Holy Land* (Grand Rapids, 1966), pp. 202-203 and D. Sperber, *Roman Palestine 200-400–The Land* (Ramat Gan, 1978), p. 29, n. 41. Also see below, p. 101.
40. This type was also uncommon in the hippodrome. In the 6th century (or later) levels (2A, 3X, 3A, 3B, 4A) only two handles of the type are recorded; the 1Y body sherds account for about 2% of the total body sherds in these levels. See Riley (above, n. 7), 27, no. 4 and Tables 3, 5-8.
41. Cf. Landgraf (above, n. 14), p. 75 and Fig. 24b.
42. For a discussion of the construction and decoration of amphoras of similar form and decoration, as well as information on the distribution of these vessels and a petrological analysis, see *ibid.*, pp. 69-79.
43. Cf. Zemer (above, n. 19), no. 49.
44. Cf. J.W. Hayes, "Pottery: Stratified Groups," in: *Excavations at Carthage 1975*, ed. J.H. Humphrey (Tunis, 1976), I, p. 117, late amphora class 4.
45. See Landgraf (above, n. 14), pp. 71-72, 82. Cf. Zemer (above, n. 19), pp. 61, 89.
46. One example is slightly lighter (5 YR 7/6), another is somewhat brighter (5 YR 6/8). The most common section color is 5 YR 5.5/6 ("light brown" — 19 examples).
47. Section core color ranges from 10 YR 5/2 to 10 YR 7/4, with one example of 7.5 YR 6/4. The prevalent core color is 10 YR 6/4-10 YR 7/4 ("light yellowish brown" — 6 examples).
48. The most common exterior color is "moderate yellowish pink" (5 YR 7/6). One base fragment retains a wash of "pale orange yellow" (10 YR 8/3). The interior of another example was partly discolored to the same color.

Peacock's petrological report of hippodrome amphora type 2 is also appropriate to our vessels.[49]

Holes of *c.* 0.4 cm. diameter had been drilled into the walls of four of the type 2 amphoras, in the region between the upper point of the handle junction and 2 cm. below its lower point of junction (Fig. 1:14= Ill. 99).[50] These four fragments constitute one third of the twelve type 2 amphoras in which any of the relevant shoulder area was recovered. The average shoulder area preserved in these twelve fragments is only about 21% of the total shoulder circumference.[51] We would thus probably be justified in assuming that somewhat more (and perhaps significantly more) of the type 2 amphoras in the Building were originally punctured.

This was the second most prevalent amphora type in the Building, accounting for about 24% of the amphora RHB.

Type 2 as found in the Building differs in certain aspects of form from Riley's hippodrome prototype. The latter is characterized by a short rim and ridged shoulder. Riley notes that some of the hippodrome examples were plain (unridged) and classifies them as type 2Z; in addition, a "variant" rim of the same form as our type 2 is illustrated.[52] Fragments of both type 2Z and the "variant" rim probably belong to the form of amphora type 2 common in the Building, and presumably postdate the hippodrome prototype.[53] The Building form, a plain amphora with ill-defined, near vertical rim, is of 7th century deposition, according to the Building evidence, while the hippodrome



Ill. 99. Amphora type 2, upper vessel fragment.

prototype is apparently of mostly a 5th-6th century date. A certain overlap in the use of the two forms would not be surprising, however.[54] This proposed typological development of Caesarea type 2 has been noted in vessels of the same form at Kellia, west of the Egyptian Delta.[55]

Opinions have differed as to the possible contents of Caesarea amphora type 2. The issue warrants further comment, even if a resolution is not at present possible.

Riley has convincingly argued for the possibility that the type 2 amphora was the container for the famous Gaza wines mentioned by several authors writing in different parts of the Mediterranean in the late 5th and 6th centuries.[56] This relationship is supported by the local distribution of the amphora, and a petrological report, which point to the Gaza region as a likely manufacturing center,[57] and by the distribu-

49. Riley (above, n. 7), 30.

50. The four punctured fragments include one body sherd. The hole circumference was intact in only one example. The prototype of the apparently earlier form of amphora type 2 at Ballana and Qustul is illustrated with a small hole at mid-handle level; W.B. Emery, *The Royal Tombs of Ballana and Qustul* (Cairo, 1938), I, Pl. 111:10.

51. The shoulder circumference at mid-handle level is 65.0 cm. (based on measured drawings). 21.5% of the shoulder circumference were recovered in the punctured examples, and 20.8% in the fragments without holes.

52. Riley (above, n. 7), 27, 31. Catalog no. 12 is the prototype, no. 14 is the variant. The latter is slightly larger in diameter (12.2 cm.) than that of our range.

53. Only six handles of amphora type 2Z, all from level 3A, are reported in Riley's tables (*ibid.*, Table 6). The six type 2Z handles account for 2.3% of the type 2 amphora handles from the 6th-century (or later) hippodrome levels (levels 2A, 3X, 3A, 3B, 4A; Tables 3, 5-8). It is surprising that no 2Z fragments were recovered from H4A, the latest Byzantine level at the hippodrome. Quantities of the "variant" type are not presented in the tables.

54. For early occurrences of this amphora, see Hayes (above, n. 44), pp. 117-118 and Riley (above, n. 7), 30 and n. 19. Also see L.Y. Rahmani, "A Tomb from the Fourth Century A.D. in Ḥeletz," *BIES* 25 (1961), 150-156, Fig. 2 (Hebrew). Rahmani dates the first use of the Ḥeletz tomb to late 4th or early 5th centuries; it continued in use "for an extended period in the fifth century C.E." (*ibid.*, 156). The amphoras were used for infant burial.
At Kellia, the later form (183) is dated to 650-750 (Egloff [above, n. 30], p. 117). For other recovery sites, see below, nn. 57-58.

55. See Egloff (above, n. 30), amphora types 182 and 183 (vol. 1, pp. 116-117; vol. 2, Pl. 4:18, 21:1=60:3, 61:1). Cf. Zemer (above, n. 19), p. 61. The Building form is equivalent to Zemer's no. 51.

56. Riley (above, n. 7), 30 and n. 20. Also see Sperber (above, n. 39), pp. 65-66. Regarding the export of Gaza and Ashkelon wines to Egypt in the Byzantine period, see A.C. Johnson and L.C. West, *Byzantine Egypt, Economic Studies* (Princeton, 1949), pp. 145, 148 and D. Sperber, "Objects of Trade Between Palestine and Egypt in Roman Times," *JESHO* 19 (1976), 141-142.

57. Riley (above, n. 7), 27, 30-31, n. 17. Zemer (above, n. 19), p. 120, "Addenda and Corrigenda," relates a communication from M. Dothan that, "In Ashdod remains of a kiln were excavated with complete jars of this type," referring to a type 2 form (no. 50). Zemer also lists several, mostly unpublished find spots in the area of Gaza and the Sinai, and informs us

Ill. 100. Amphora type 3, upper vessel fragment.

tion of this amphora form in a large number of sites throughout the Mediterranean and beyond.[58]

Recently we have been informed that amphoras of the type 2 form containing remains of fish were found at Kassarwit, in the northern Sinai peninsula.[59] Investigation of this report has convinced us that the Kassarwit amphoras found containing remains of fish were of a type unrelated to Caesarea type 2.[60]

Pickled fish from Gaza, or perhaps pickled fish packed in an amphora from Gaza in secondary use, are mentioned in a 5th or 6th century papyrus from Oxyrhynchus in Egypt.[61] But this seems to be the only ancient reference to Gaza fish, and even its interpretation is somewhat doubtful. D. Sperber writes that "the sources, even medieval ones, never seem to speak of 'Gaza fish,' never mention a pickling industry at Gaza, and never speak of such exports from there."[62]

As mentioned above, Roman amphoras containing fish products are characterized by a splaying rim of 14-20 cm. diameter, with still wider exceptions. Caesarea amphora type 2 is closer in rim diameter to wine-bearing amphoras, often 10 cm. or even wider, and lacks the splaying rim. The small holes, found in one third of the type 2 amphora fragments in the Building and in the prototype of this form at Ballana and Qustul in Nubia,[63] are further evidence against an original content of fish or fish derivatives. It is also unlikely that fish-bearing amphoras would have been reused for liquids intended for human consumption, considering the taste residue left by the fish product, presumably even in resin-lined amphoras.

The wine trade of Gaza and Ashkelon was quite famous in the Byzantine period, as Riley indicates; according to a local 5th-century account, Egyptian wine merchants crowded the port of Gaza.[64]

The resin lining found in amphoras of this form, recovered off the coast of Atlit near Haifa, and at Ballana and Qustul, is also appropriate to a wine product.[65]

Amphora Type 3

This bag-shaped amphora (Fig. 2:1=Ill. 100), gray to the eye and invariably decorated with white painted pat-

that, "This type (i.e., 49-53, type 2 and related forms — D.A.-B) has been recovered in large quantities on the coast of Israel, particularly on the southern coast" (my translation from the Hebrew).

58. Riley (above, n. 7), 30 and nn. 18-19. For additional sites, see Egloff (above, n. 30), p. 117 (types 182-183); Zemer (above, n. 19), pp. 61, 120 ("Addenda and Corrigenda"); Landgraf (above, n. 14), p. 82 and n. 89, (the Shavei Zion example is of the Building form), and Hayes (above, n. 44), pp. 117-118, Fig. 21:9. For occurrences along the Black Sea, see C. Scorpan, "Origini Şi Linii Evolutive În Ceramica Romano-Bizăntina (sec. IV-VII) Din Spaţiul Mediteranean Şi Pontic," *Pontica* 9 (1976), 165, Pls. XIII:3, 4; XXI:4, XXXV (where a North African source is depicted).
59. Zemer (above, n. 19), pp. 61, 113.
60. I have seen photographs of the relevant Kassarwit amphoras. They await final publication.
61. See Johnson and West (above, n. 56), pp. 145, 148 and n. 161 and Sperber (above, n. 56), 144-145. Johnson and West note that in the phrase "Gaza pickled fish," "The word 'Gaza' may be the type of jar rather than the source of the fish. Cf. use of 'Cnidian jar.'" (*ibid.*, n. 161). Sperber (*ibid.*) adds that this doubt arose "since Gaza pots are mentioned in a sixth century papyrus." (see Johnson and West, p. 145 and Sperber, 145).
However, it is unlikely that the rather crude late Byzantine amphora, common in the area of Gaza and equivalent in form to Caesarea type 2, was shipped in quantity as an empty container to be filled elsewhere. It is possible, however, that Gaza amphoras reused for fish are referred to. The Gaza pots mentioned in the other papyrus are probably amphoras manufactured and filled in the Gaza region, and shipped to Egypt. The wide distribution in Egypt of amphoras of the type 2 form (see Egloff [above, n. 30], p. 117 [types 182-183]) attests to the extent of trade in the commodity borne in these amphoras and would explain the Egyptians' acquaintance with these vessels.
62. Sperber (above, n. 56), 144-145. Regarding Akko and other cities of the eastern Mediterranean famous for their fish, see D. Sperber, "Some Observations of Fish and Fisheries in Roman Palestine," *ZDMG* 118 (1968), 265-269; idem, *Roman Palestine 200-400–Money and Prices* (Ramat Gan, 1974), pp. 129-131.
63. See n. 50 above.
64. Marc le diacre, *Vie de Porphyre*, eds. H. Gregoire and M.A. Kugener (Paris, 1930), p. 58. See the remarks of M. Avi-Yonah, "The Economics of Byzantine Palestine," *IEJ* 8 (1958), 50, and Sperber (above, n. 56), 142.
65. See p. 96 and n. 35 above. On the Atlit and Nubian amphoras, see Zemer (above, n. 19), no. 49, pp. 61, 95, and Emery (above, n. 50), p. 390. We are assuming that the "pitch" lining mentioned by Emery was resin. See Lucas and Harris (above, n. 20), pp. 19-20 and p. 19, n. 8; and Oddy and Bateman (above, n. 35), p. 381.

Ill. 101. Amphora type 3 fragment, closeup of plugged hole.

terns, was not common in the Building, accounting for about 5.5% of the amphora RHB. Although the amphora is similar to type 1B in its general shape, differences of form, fabric, and decoration distinguish the two types.

A distinct protruding ridge marks the transition between the shoulder and the body. The lower ends of the handles were attached to this ridge. The handles of the depicted amphora are comparatively large (maximum diameter *c.* 9 cm.), but two smaller handle fragments (*c.* 7 cm.) were also found. The rims are vertical; the heights in the three examples vary from 3.6 to 4.7 cm., their diameters from 9.5 to 10.0 cm.

The usual "brownish gray" color (10 YR 4.5/1) of the exterior is one of the characteristics of this type, but color sometimes varied in the firing; one of our examples was "grayish reddish orange" (2.5 YR 6/6) on the exterior.[66] Section color was "moderate orange" (2.5 YR 6/8) or "light brown" (5 YR 5/6).

P. Goldberg informs me that the clay was tempered by the addition of pottery fragments. There is virtually no quartz sand present, in contrast to amphora 1B where quartz sand is abundant.

The walls of the vessel are thin. The shoulder is marked by regular grooves (*c.* 2 per cm.). A wider tool was used to cut non-parallel grooves in the upper body, below the shoulder ridge, of the depicted vessel. The latter was the main area decorated with the white painted patterns characteristic of type 3. In our example, this decoration consists of diagonal lines sloping in opposite directions and intersecting in a net-like pattern.

A rough "collar" below the rim probably attests the use of a wet chuck in the manufacturing process.[67]

A particularly interesting feature of the restored type 3 amphora is the presence of two irregular-shaped holes, plugged with lead,[68] at an arc distance of *c.* 26.2 cm., one at the height of the upper handle attachment, the second below mid-handle level (Fig. 2:1=Ill. 101). Two lead plugs seal the larger hole; the upper plug is roughly round, *c.* 1.2 cm. in diameter, the lower is irregular, *c.* 0.9 x 1.0 cm. in size. The area sealed by the two plugs is vertically elongated, approximately 2.1 x 0.9-1.3 cm. in size. The plug of the second hole is approximately 1.0 x 1.3 cm. in size.

An examination of the available evidence leads us to the hypothesis that oil was the most likely single content of Caesarea amphora type 3,[69] based on the fabric of the amphora, the contexts in which it has been found, and its distribution pattern.

As mentioned above, pottery fragments, rather than quartz sand, were employed to temper the clay of the type 3 amphora. Regarding the fabric of this amphora, Landgraf writes, "The Beisan amphoras (i.e., the Keisan "black" amphoras, the same type as Caesarea type 3 – D.A.-B.) are thinner, harder, and with a denser fabric and therefore less porous than the sand tempered 'Aiyadiya amphoras (Caesarea amphora type 1B is very similar in these attributes to the 'Aiyadiya amphoras – D.A-B)....As learned from conversations with traditional Palestinian potters of today, sand tempered jars because of their porosity are not suitable for the storage of oil."[70] Hence, the physical properties of amphora type 3 are more suitable for the carriage of oil than are those of sand-tempered amphora type 1B. Furthermore, rabbinic sources of the Roman and early Byzantine periods attest to a clear difference, apparently in fabric, between amphoras used for wine and those used for oil.[71]

66. Amphora fragments were classified as type 3 according to form and petrological analysis of the fabric. My thanks to Dr. Goldberg for his analysis. Also see Landgraf (above, n. 14), p. 68, Fig. 21 and J. Glass' petrological analysis of the Keisan "black" amphora, *ibid.*, pp. 79-80.

67. See Landgraf (above, n. 14), pp. 69-76 for a detailed study of the construction and decoration of the Keisan "black" amphora, the same type as Caesarea type 3.

68. My thanks to H. Bidani of the Hebrew University, who analyzed the plugs by spot test with sodium rhodizonate. Callender ([above, n. 21], pp. 43-44) mentions pierced vessels plugged with lead from Silchester in Britain.

69. Cf. Riley (above, n.7), 31, n. 23. It is of course possible that type 3 was also used for wine and other commodities.

70. Landgraf (above, n. 14), p. 80.

71. See *Mishna Shevi'it* 5, 7; *J Shevi'it* 5, 7, 36a, and Brand (above, n. 21), p. 123, n. 172.

Examples of amphora type 3 have been found in association with olive press installations at several excavated sites. These include numerous such amphoras constituting the bulk of the pottery recently examined by the author from a large olive press installation at Tel Sush, just south of the Jezreel Valley.[72] The gray painted amphoras were the most common storage vessels found in olive press installations at Kursi (on the east coast of the Sea of Galilee) and, according to V. Tzaferis, at Kafr er-Rama (in the Galilean hills) as well.[73] This amphora is especially prevalent at sites in the Galilee and the Jordan Valley,[74] areas known for their olives and oil production.[75]

The fact that pottery fragments rather than quartz sand were used for temper, and the primarily inland distribution pattern, probably indicate an inland source for this type.[76]

Amphora Type 4

This is a fusiform amphora with a hollow toe. One definitive base fragment was found in the Building excavations (Fig. 2:2), another upper amphora fragment (Fig. 2:3=Ill. 102) is of a generally similar form and is perhaps an imitation of the type. The two fragments comprise about 1.5% of the amphora RHB found in the Building.[77]

The base fragment with hollow toe is very thin walled (*c.* 0.35 cm.); the fabric is smooth and highly micaceous. Section color is "strong brown" (2.5 YR 4/6), while exterior color is "grayish reddish orange" (2.5 YR 6/6).

Forms close to that of the base fragment from the Agora and Kellia are dated to the late 4th century and to 390-475 C.E., respectively.[78] The Caesarea fragment would thus seem to be residual.

The upper amphora fragment (Fig. 2:3=Ill. 102) has a splaying rim with a ridge below and a small looped handle. The wall is comparatively thick (*c.* 0.8-1.0 cm.), and contains no mica. Section color is "moderate yellowish pink" (5 YR 7/6), while exterior color is "pale orange yellow" (7.5 YR 8/6-10 YR 8/4). Residue of a "moderate reddish brown" wash is evident on the exterior (10 R 4/6). Differences in fabric and form set this amphora apart from the previous fragment and from published examples.[79] For a

Ill. 102. Amphora type 4, upper vessel fragment.

72. The site has recently been identified with Gaba Hippeum; see Y. Zigelman, "The Identification of Josephus' Gaba," *Zev Vilnay's Jubilee Volume*, ed. E. Schiller (Jerusalem, 1984), pp. 225-227 (Hebrew). My thanks to Professor R. Giveon, Dr. M. Fisher, Dr. Z. Safrai and M. Linn for their cooperation, and for permitting the mention of this heretofore unpublished information.

73. See V. Tzaferis, "The Excavations of Kursi-Gergesa," *'Atiqot* 16 (1983), 33, Fig. 7, Pl. XIV and idem, "A Roman Bath at Rama," *'Atiqot* 14 (1980), 70-71. The amphoras from the Rama olive press have not been published; my thanks to Dr. Tzaferis for this information. Fragments of many gray painted amphoras were found in an oil press installation at Beth She'arim. However, the excavator, Professor N. Avigad, reports that they belong to a phase when the press was no longer in use. See N. Avigad, "Excavations at Beth She'arim, 1953," *IEJ* 4 (1954), 89-92.

74. See Riley (above, n. 7), 31 and nn. 22-23 and Landgraf (above, n. 14), p. 80 for the distribution of the type. The type has been reported at very few sites outside of Israel: Istanbul, Carthage, and Curium; see Landgraf, *ibid.*, and n. 88; Hayes (above, n. 44), p. 117 (Late Amphora Class 6, Fig. 21:8).

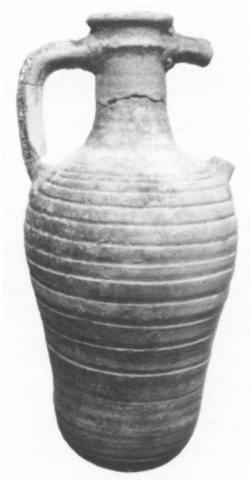
75. See above p. 97 and n. 39. Regarding olives and oil production in the Jordan Valley, see Avi-Yonah (above, n. 39), p. 209. Olives were grown in the hills of Judea and Samaria, adjacent to the Jordan Valley; see, e.g., *ibid.*, pp. 191-192, 199 and Sperber (above, n. 39), p. 29, n. 41. Gray painted amphoras found at several Byzantine sites in Judea have been published; to Landgraf's list we may add Sheperds' Field, east of Bethlehem, (see V. Tzaferis, "The Archaeological Excavation at Sheperds' Field," *Liber Annuus* 25 (1975), 37-38.

76. Cf. Riley (above, n. 7), 31, n. 23 and Landgraf (above, n. 14), p. 80. A. Zemer, formerly of the Haifa Maritime Museum, has informed me that he knows of no example of gray painted amphoras recovered at sea. My thanks to him for this information.

77. Because of the general similarity of form, the upper amphora fragment is included in the statistics for the type.

78. See Robinson (above, n. 21), p. 110 (M 277, M 282), Pls. 29, 41; and Egloff (above, n. 30), p. 116 (type 181), Pl. 22:8=Pl. 60:2. The later forms at the Agora have pointed toes; see Robinson (*ibid.*), p. 17 and Pl. 41.

79. At the Agora, the fusiform amphora occurs in two different fabrics in late 4th to 6th century contexts, "micaceous reddish brown" and "coarse, gritty, gray-black clay with some mica." (Robinson [above, n. 21], p. 110 [M 282]). In the Vandal levels at Carthage (5th and early 6th centuries) the amphora occurs in thin and thicker walled varieties in almost



Ill. 103. Amphora type 5.

petrological description of this vessel, see p. 130, Sample E.

At the Agora, the fusiform amphoras were usually found lined with resin and they are thought to have been used as containers for wine.[80]

Hayes has suggested Asia Minor, "possibly in the Sardis region," as the origin of the type, based on its distribution.[81]

Amphora Type 5

This amphora is characterized by its "clapboard" ridging, relatively close on the shoulder and near the base, and widely spaced on the body. The handles are ridged, the base rounded. There is often a ridge below the rim; some examples have a distinct waist.

One complete amphora (Fig. 2:4=Ill. 103), one rim fragment (Fig. 2:5) and several body sherds were recovered. They account for about 1.5% of the amphora RHB.

The complete amphora is slightly off center.

The fabric is "light brown" to "moderate yellowish pink" (5 YR 6/6 to 5 YR 7/6) in section, and "pale orange yellow" (7.5 YR 8/4) on the exterior.[82] There are frequent white inclusions (occasionally up to 1/2-1 mm.), and some mica.

The complete vessel (Fig. 2:4=Ill. 103) is close in form to the second most prevalent amphora recovered from the wreck at Yassi Ada, near Bodrum, Turkey, dated to 625/626 or soon thereafter.[83]

Although the type was thought to have originated in Egypt, D.P.S. Peacock is reported to have discounted that possibility, suggesting an origin in Cyprus or Asia Minor.[84]

Amphora Type 6

This is a near-globular, broad bodied amphora with fine "combed" grooves on the shoulder. The rim is biconical, with varying degrees of angularity. The one upper amphora fragment (Fig. 2:6=Ill. 104) and four rim fragments recovered account for about 4% of the amphora RHB.

Ill. 104. Amphora type 6, upper vessel fragment.

equal quantities, while only the thin walled form apparently occurs in the Late Roman levels; both varieties are of a similar brown micaceous fabric (Hayes [above, n. 44], p. 117, Late Amphora Class 3).

80. Robinson (above, n. 21), p. 17.

81. See Riley (above, n. 7), 31 and n. 29. See *ibid.*, and nn. 25-28 and Egloff (above, n. 30), p. 116 for the distribution of vessels of similar form. Add Caesarea (A. Siegelmann, "A Mosaic Floor at Caesarea Maritima," *IEJ* 24 [1974], 219-221, Fig. 2:4, 5); Beth She'arim (N. Avigad, *Beth She'arim* [Jerusalem, 1976], III, p. 197, Fig. 94:12); Carthage (Hayes [above, n. 44)], p. 117, Late Amphora Class 3); Pontus and the Crimea (Scorpan [above, n. 58], 158-159 [type O], Pls. V, XXXI).

82. The complete example was discolored on portions of the exterior to "moderate orange" (2.5 Y 6/8) and "yellowish gray" (2.5 Y 8/2).

83. See G.F. Bass, "Underwater Excavations at Yassi Ada, A Byzantine Shipwreck," *AA* 77 (1962), Col. 552-555, Fig. 6b, and Bass (above, n. 35), pp. 140-142.

84. For the distribution of vessels of similar form, see Riley (above, n. 7), 33 and nn. 30-36; Egloff (above, n. 30), p. 112 (type 164); Zemer (above, n. 19), p. 76 (nos. 63-65, and perhaps 66); and Landgraf (above, n. 14), pp. 82-83, and Fig. 26:2, who relates the personal communication of Dr. Peacock. Add the following examples from Cyprus: the Kornos Cave (H.W. Catling and A.I. Dikigoropoulos, "The Kornos Cave: An Early Byzantine Site in Cyprus," *Levant* 2 [1970], 47, no. 4 and Pl. XXXIX A); and Mersineri (H.W. Catling, "An Early Byzantine Pottery Factory at Dhiorios in Cyprus," *Levant* 4 [1972], 71, Figs. 20 [p. 319], 27 [p. 266], and Pl. VIII). Also add Scorpan (above, n. 58), 163 (type B), Pl. VIII:1, 3, Pl. XXXIII and A. Rădulescu, "Anfore Romane Şi Romano-Bizantine Din Scythia Minor," *Pontica* 9 (1976), 109, Pl. XI: 1, 1a.

Ill. 105. Amphora type 7, upper vessel fragment.

In the Byzantine Building the type occurs in two fabrics, one highly micaceous with common lime inclusions of up to about 1 mm. (three examples, Fig. 2:6-7), the second with lime at about the same frequency, but up to 2 mm. in size, and with rare to occasional specks of mica (two examples, Fig. 2:8-9). Colors of both fabrics are similar.[85] For a petrological analysis of amphora type 6, fabric 1, see p. 00, Sample F.

The type is close in form to the most prevalent amphora recovered from the above-mentioned wreck at Yassi Ada.[86] An east Aegean source has been suggested.[87]

Amphora Type 7

The carrot-like shape, tall neck with strap handles, and full pointed base (Fig. 2:10, 12=Ills. 105, 106) are characteristics of this type. The color of the eight rim and base fragments recovered (about 6% of the amphora RHB in the Building) is invariably "light brown" (5 YR 5/6) in section and is usually "light brown" (5 YR 6/4) on the exterior.[88] Gold mica is common and there are occasional lime inclusions, up to 0.5 mm. in size.

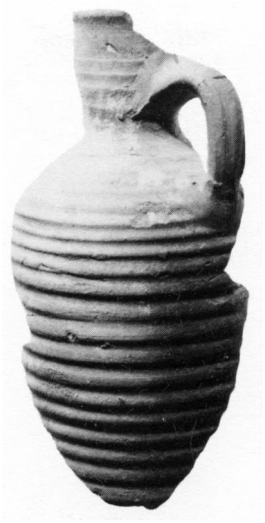
Ill. 106. Amphora type 7, lower body and base fragment.

85. Fabric 1 occurs as 5 YR 6/8, 5 YR 7/8 and 5 YR 7/6 ("moderate orange" [2 examples] and "moderate yellowish pink," respectively), while fabric 2 is "light brown" (5 YR 6/6) in section. Exterior colors are "moderate yellowish pink" (2 examples) and "pale orange yellow" (5 YR 7/6 and 7.5 YR 8/6, respectively) for fabric 1, and "pale orange yellow" (7.5 YR 8/6 and 10 YR 8/4) for fabric 2.
The two fabrics are classified here as type 6 because the fragmentary state of four of the five examples does not allow meaningful discussion as two distinct types. See J.W. Hayes ("A Seventh Century Pottery Group, A Contribution to R.M. Harrison and N. Firatli, 'Excavations at Saraçhane in Istanbul: Fifth Preliminary Report'," *Dumbarton Oaks Papers* 22 [1968], 215, and n. 38) who classifies "broad-bellied types with fine, close-spaced grooving, normally arranged in groups," as his type 8, and notes that this description is "characteristic of a large class of seventh- to eighth-century date, in more than one fabric". At Carthage, Hayes classifies two distinct types of these amphoras closely related in shape and decoration (Hayes [above, n. 44], pp. 116-117, Fig. 21:15, Late Amphora Classes 2 and 8). Caesarea type 6, fabric 1 can probably be identified with class 8, "Globular amphoras...in a micaceous and slightly sandy tan-brown ware. Unclassified, probably from a source in the eastern Aegean; the commonest type in the 7th century wreck from Yassi Ada, Bodrum (Turkey)." Type 6, fabric 2 is perhaps identifiable with class 2, "Near-globular amphoras with close-set straight or wavy combed grooving covering the upper part of the body. Rather smooth-textured, with some calcite lumps and a little biotite. From an eastern Aegean source, as yet unidentified." At the hippodrome only one sherd was recorded (Riley [above, n. 7], 33).

86. See Bass (above, n. 83 [1962]), Col. 552-553, Fig. 6a, and idem (above, n. 35), pp. 140-142. For other references to distribution, see Riley (above, n. 7), 33, nn. 37-39 and Egloff (above, n. 30), p. 113 (type 167). Also see Scorpan (above, n. 58), 160 (type A1), Pl. VII:3, 7, XXXII; and Rădulescu (above, n. 84), 107, Pl. VIII:1, 1a, IX:1, 1a. For a late 8th-9th century version of the type found at Paphos, see A.H.S. Megaw, "Supplementary Excavations on a Castle Site at Paphos, Cyprus, 1970-1971," *Dumbarton Oaks Papers* 26 (1972), 328, Fig. 25 and Fig. C, and Haye's remarks on p. 340.

87. Riley (above, n. 7), 33 and Hayes (above, n. 44), pp. 116-117 (see n. 85 above).

88. Two examples had a "brownish gray" or "grayish yellowish brown" core (10 YR 5/1, 10 YR 5/3). The exterior color of two examples was closer to "moderate yellowish pink" (5 YR 7/4).



Ill. 107. Amphora type 9, fragment.

Ill. 108. Amphora type 9, upper vessel fragment.

While the rim of Fig. 2:10=Ill. 105 was the usual form, a variant rim form (Fig. 2:11) also occurred.

At the Monastery of Epiphanius at Thebes this was the form of the most common amphora; a number of varieties are illustrated. The amphoras were lined with a "black, resinous pitch," and are therefore assumed to have been used for wine.[89]

The type is thought to be of Egyptian origin.[90]

Amphora Type 9[91]

The carrot-like shape of this amphora is similar to that of type 7, but differences of form and fabric

Ill. 109. Amphora type 10.

distinguish the two types. Two upper amphora fragments (about 1.5% of the amphora RHB) were recovered (Fig. 2:13, 14=Ills. 107, 108).

The rim is simple or slightly splaying, the neck tubular, with ridging in the middle region. Two round ridged handles are affixed to the mid-neck and the extremity of the rounded shoulder. Regular ridging covers the body, and is somewhat denser in the shoulder area.

The fabric is reddish in color.[92] For a petrological report, see p. 130, Sample I.

Ballana and Qustul type 11 seems to be similar in form.[93] The general similarity in form to Caesarea amphora type 7 suggests the possibility of an Egyptian origin. Also see below, Miscellaneous Amphora, type 4.

Amphora Type 10

This amphora has a plump rounded upper body tapering to a small ring base. The mouth of the vessel is wider than the neck, accommodating the gypsum plaster stopper found in place in two examples. Two angular ridged handles extend from the rim to the rounded shoulder. The body is uniformly ridged (Fig. 3:1-2).

The three examples found in the Building comprise about 2% of the amphora RHB. One amphora is complete (Fig. 3:1=Ill. 109); gypsum plaster seals its

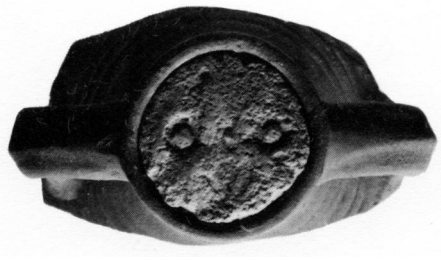
89. Winlock and Crum (above, n. 20), pp. 78-82, Pls. XXVIII-XXIX. For references to distribution, see Riley (above n. 7), 33 and nn. 40-41; Egloff (above, n. 30), type 174 and the similar types 173 and 175 (pp. 114-115); J.W. Hayes, *Roman Pottery in the Royal Ontario Museum* (Toronto, 1976), no. 369 (close to Kellia type 173); also see nos. 367-368 (pp. 67-68); and Landgraf (above, n. 14), p. 83.

90. See Riley, *ibid.*; Egloff (above, n. 30) pp. 111, 115 (type 174); Hayes, *ibid.*, p. 67.

91. For the earlier Caesarea amphora type 8, see Riley (above, n. 7), 40.

92. "Brownish orange" (2.5 YR 5/8) or "grayish reddish orange" (2.5 YR 5/6) in section, "light grayish red" (10 R 6/3), or "light reddish brown" (10 R 6/4) on the exterior, and "moderate reddish orange" (10 R 5/8) on the interior.

93. Emery (above, n. 50), Pl. 111.



Ill. 110. Amphora type 10, view of stopper.

neck, and that of another example (Fig. 3:2). One of the stoppers is impressed with two circles (Ill. 110), the other with one. There are two drilled holes in the complete example, one of 0.5 cm. diameter in the lower body, the other of 0.4 cm. in the shoulder area. The latter hole was subsequently elongated to 0.6 cm. (Ill. 109). Fabric color is generally "moderate orange" (2.5 YR 6/8) in section and exterior.[94] For a petrological report, see p. 130, Sample J.[95]

Amphora Type 11

One rim fragment of this bag-shaped amphora was recovered (Fig. 3:3). The rim is relatively high and leans inward; a moulding skirts its base.

Color is "moderate orange" (5 YR 6/8) in section and "pale orange yellow" (7.5 YR 8/6) on the exterior. There are gray, red and white inclusions, up to 1 mm. in size.

Amphoras of similar form seem to be common in inland contexts of the 6th and 7th centuries, such as at Ramat Rahel, several kilometers south of Jerusalem.[96]

Miscellaneous Amphora Types

The following miscellaneous fragments account for about 8% of the amphora RHB.

1. Two upper fragments of this wide-necked, everted rim amphora were recovered. The neck gradually tapers as it rises from the shoulder. Two rounded ridged handles extend from the upper neck to the sloping shoulder (Fig. 3:4, 5=Ills. 111, 112).

Ill. 111. Miscellaneous amphora type 1, upper vessel fragment.

Ill. 112. Miscellaneous amphora type 1, upper vessel fragment.

Ill. 113. Miscellaneous amphora type 2, upper vessel fragment.

94. In the complete amphora, exterior color varies from 2.5 YR 6/8 to 10 R 6/4 ("light reddish brown"). The exterior color of the third example is "moderate yellowish pink" (5 YR 7/6).

95. An Agora vessel is somewhat reminiscent of the type; see Robinson (above, n. 21), p. 115 (M 334), Pl. 33.

96. Several complete amphoras of similar form were found at Ramat Rahel in stratum IIA, dated by Y. Aharoni to the 6th-7th centuries, together with a variant of Caesarea amphora type 2. See *Excavations at Ramat Rahel* (Rome, 1964), pp. 16, 41, Fig. 9:4-8; 24. Cf. S.J. Saller, *Excavations at Bethany* (Jerusalem, 1957), pp. 206, 208, Fig. 29:7051 and bibliography; and V. Tzaferis, "A Tower and Fortress near Jerusalem," *IEJ* 24 (1974), 93, Fig. 4:11.

The larger of the two amphoras (Fig. 3:4=Ill. 111) is "brownish orange" in section, with a "light yellowish brown" (10 YR 6/4) core and "moderate yellowish pink" (5 YR 7/4) exterior. The smaller amphora (Fig. 3:5=Ill. 112) is "light brown" (5 YR 6/6) in section and "moderate yellowish pink" (5 YR 7/6) on the exterior. For a petrological analysis of the larger amphora, see p. 130, Sample A.

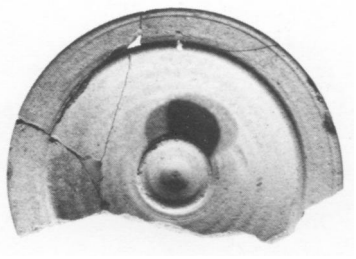
2. One example was recovered of a small amphora with a tapering body and large disproportionate handles (Fig. 3:6=Ill. 113) (one is reconstructed). The neck is narrow, the lip plain. There is rather deep grooving below the neck and on the upper body, becoming more sparse and shallow below.

   Color is "moderate orange" (2.5 YR 6/8) in section and "light reddish brown" (2.5 YR 6/4) on the exterior. For a petrological report, see p. 131, Sample K.

   Incised lines (remains of an incised inscription?) are discernible on the shoulder (Ill. 113).
3. Everted rim fragment (Fig. 3:7) with a bulge where the upper handle was attached. Color is "moderate orange" (5 YR 6/8) in section and "light reddish brown" (2.5 YR 6/4) on the exterior. See p. 130, Sample D, for a petrological report.

   The fragment seems similar in form and color to an upper amphora fragment recovered at Kellia (type 165).[97] Petrological analysis indicates a possible Egyptian origin.[98]
4. Base fragment (Fig. 3:8). The toe is bulbous, with a moulded ridge above. Color is "moderate orange" (2.5 YR 6/8) in section, varying to "grayish reddish orange" (2.5 YR 6/6) on the exterior. Interior color is "moderate reddish orange" (10 R 6/8).

   The fragment is very similar in form to an amphora base recovered at the Monastery of Epiphanius.[99] Petrological analysis found this piece (p. 130, Sample B) virtually identical to amphora type 9.
5. Rim fragment (Fig. 3:9). Color ranges from "brownish orange" (2.5 YR 5/8) near the exterior section to "moderate orange" (5 YR 6/8) near the interior. Exterior color is "moderate orange" (5 YR 7/8). For a petrological report, see p. 131, Sample L.



Ill. 114. Amphora lid type 1A.

6. Rim and handle fragment (Fig. 3:10). Color is "light brown" (5 YR 6/6) in section to "moderate yellowish pink" (5 YR 7/6) on the exterior.
7. Rim fragment (Fig. 3:11). Very gritty fabric with abundant lime and gray inclusions up to 1 mm. in size. Color is "light brown" (5 YR 6/6) in section and "light yellowish brown" (7.5 YR 7/4) on the exterior.
8. Amphora foot (Fig. 3:12). Color is "light brown" (5 YR 6/6), with a "light grayish yellowish brown" core (10 YR 6/3) in section and "moderate yellowish pink" (5 YR 7/6) on the exterior.
9. Handle fragment (Fig 3:13) with pronounced ridges. Very gritty fabric with abundant minute white, red, and gray inclusions, occasionally up to 1 mm. in size. Color is "pale orange yellow" (7.5 YR 8/6) in section and "moderate yellowish pink" (5 YR 8/4) on the exterior.

AMPHORA LIDS AND STOPPER

The Byzantine Building corpus includes two complete amphora lids and four lid fragments, varying somewhat in form and fabric, and one stopper. The seven pieces account for about 3% of the Building's RHB.

Amphora Lid Type 1A

Bowl-shaped lid with central knob and ledge rim (Fig. 3:14=Ill. 114). The upper portion of the knob is hollowed. An elevated ridge separates the ledge from the lid interior. The base is string cut.[100] A "yellowish

97. Egloff (above, n. 30), p. 112, Pl. 57:5, dated to the 6th century.
98. Communicated by P. Goldberg.
99. Winlock and Crum (above, n. 20), pp. 82-83, Fig. 35A.
100. For lids of similar form, see P. Delougaz and R.C. Haines, *A Byzantine Church at Khirbet al-Karak* (Chicago, 1960), p. 33, Fig. 34:11-12=Pl. 56:3-4 (on the southwest coast of the Sea of Galilee) and Zevulun and Olenik (above, n. 19), Fig. 116. The latter lid, from Shiqmona (at the southern entrance to modern Haifa) lacks the ledge rim.

gray" (2.5 Y 8/2) wash covers the "brownish orange" (2.5 YR 5/8) clay, which has abundant fine particles of lime.

Amphora Lid Type 1B

Amphora lid with central knob and splaying wall (Fig. 3:15). The protrusion at the knob top is bounded by a groove. String cut base.[101] The color is "moderate orange" (2.5 YR 6/8) in section, with a "light grayish yellowish brown" (10 YR 6/2) core; exterior color is "grayish reddish orange" (2.5 YR 6/6). The clay contains common lime and gray inclusions, occasionally 1-2 mm. in size.

Miscellaneous Amphora Lid Fragments

1. Amphora lid base fragment with knob negative (Fig. 3:16). Color is "light brown" (5 YR 6/6) in section, "moderate yellowish pink" (5 YR 7/6) on the exterior. Inclusions are as in previous example.

2-4. Amphora lid rim fragments in several fabrics. The sides are all splaying.[102] In two fragments (Fig. 3:17) a groove separates the rim from the body. Section and exterior color is "yellowish gray" (10 YR 8/2) in one example and "light yellowish brown" (10 YR 6/4) and "pale orange yellow" (10 YR 8/3) in the other. Occasional round voids, *c.* 1 mm. in diameter, mark the latter fragment. The third fragment recovered is "light yellowish brown" (10 YR 6/4) in section and "yellowish gray" (5 Y 8/2) on the exterior.

Amphora Stopper

This solid clay stopper (Fig. 3:18) flakes easily. Color varies from "light yellowish brown" (7.5 YR 7/6) to "brownish gray" (10 YR 4/1).[103]

COOKING WARE

Twenty-three examples of cooking pots (open and closed forms) and eight cooking pot lid fragments were found in the Byzantine Building. They account for about 10% and 3.5%, respectively, of the RHBs recovered.[104]

Open Cooking Pot Forms

Type 1A

This type is characterized by its horizontal handles and often bevel-cut lip. Section color is "strong brown" (2.5 YR 4/8), exterior color "moderate reddish brown" (2.5 YR 4/4), charred at bottom. Abundant white grits. Three examples were found.

Fragments 1 and 2 have an uneven bevel-cut lip and slanted sides (Fig. 3:19, 20).[105] Fragment 3 is a deeper variant, with a heavy horizontal handle (Fig. 3:21).

Type 1B

This is a shallow pan, with slanted sides, bevel-cut lip and tubular "wishbone" handle. Fabric is very similar to previous type. Two examples were found:[106]

1. Cooking pot fragment with broken tubular handle (Fig. 3:22).
2. Cooking pot fragment (Fig. 3:23).

Closed Cooking Pot Forms

Type 2A[107]

These are globular cooking pots, characterized by an everted neck with a rounded outer rim (sometimes with a slight overhang), a ridged body, and two ridged vertical strap handles extending from rim to shoulder. The gritty fabric is similar to the above types. Section color of type 2 ranges from "strong brown" (2.5 YR 4/6) to "brownish orange" (2.5 YR

101. See Zevulun and Olenik (above, n. 19), Fig. 115 for a lid with a knob of similar form, but with a ledge rim.
102. See *ibid.*, Fig. 114 for a form with splaying wall, lacking the central knob.
103. See *ibid.*, Figs. 113, 117-122 for a series of clay stoppers attributed to the 6th century C.E.
104. Two of the 23 cooking vessels were recorded as cooking pots, and discarded before I saw the material. The relative proportions of the wares are based on the 21 known fragments. The discarded pieces are included in the totals for cooking vessels.
105. Zevulun and Olenik (above, n. 19) illustrate how certain "casseroles" and their covers were fashioned as one unit in order to obtain a tight fitting lid (pp. 33*-35*; 64-67, Figs. 166-171).
106. See Zevulun and Olenik (above, n. 19), Fig. 195 for a similar vessel.
107. The four cooking pots illustrated by Riley (above, n. 7) as "Type 2 — Miscellaneous Closed Cooking Pots" may be divided into subtypes 2A (Riley, no. 31a) and 2B (Riley, nos. 29, 30, 31b).

5/8); exterior color is similar to section color in four examples, the others bear red-purple hues.[108] With nine examples recovered (8 of type 2A; 1 of type 2B), this type was the most common cooking pot found in the Byzantine Building.

1. Cooking pot fragment with slightly overhanging rim and ridged handle (Fig. 3:24).
2. Cooking pot fragment (Fig. 3:25). Lower rim than in previous example.
3. Cooking pot rim fragment (Fig. 3:26). Smaller variant of the above examples. Charred rim.
4. Cooking pot rim fragment (Fig. 4:1). This variant has a relatively long neck, with an interior ledge feature to accept a lid. Section color is "moderate reddish brown" (2.5 YR 3/4), the interior is very dark gray (2.5 YR 3/0),[109] and the exterior is charred.

Type 2B

This type has a shorter rim and a heavier handle than type 2A, but is in a very similar fabric (Fig. 4:2).

Type 3

This thin walled globular cooking pot is characterized by an almost vertical rim, concave on the interior, from which two strap handles extend to a ridged body.[110] It has a gritty fabric similar to the above examples; section color is as in type 2; exterior color is "grayish reddish orange" (10 R 5/6) discolored to "dark reddish gray" (10 R 4/1) on parts of the exterior and interior. Three examples were found.

1. Cooking pot fragment with broken handle (Fig. 4:3).
2. Cooking pot fragment (Fig. 4:4), close to above example.

Cooking pots of similar form were recovered at Kellia and in several Cypriote contexts, including a kiln deposit.[111]

Type 4

This is a narrow necked cooking vessel with a simple splaying rim, a single[112] lip to shoulder strap handle, and a ridged body. The gritty fabric and color[113] are similar to the above types. Two examples were found.

1. Cooking pot fragment with broken handle (Fig. 4:5).

MISCELLANEOUS COOKING WARE

1. The body and base of one globular cooking vessel of somewhat irregular shape was recovered (Fig. 4:6). The negative of a handle is visible on the upper body. The two groups of parallel ridging on the upper body are not parallel to each other. Fabric is gritty as in type 2. Section color is "grayish reddish orange" (2.5 YR 6/6), with a "light brown" (5 YR 6/6) core; exterior color is "moderate orange" (2.5 YR 6/8). The body is charred from the base to about mid-height.
2. A rim fragment of a cooking vessel (Fig. 4:7), irregular in shape, containing common lime grits up to one mm. in size. Color is "dark reddish gray" (10 R 3/1) in section and on the exterior, "light reddish brown" (2.5 YR 5/4) on the interior. The fragment is charred on the interior and exterior.

Cooking Pot Covers

The eight cooking pot covers recovered, about one-fourth of the cooking ware, may be divided into two subtypes, according to fabric and form.

Type 1A

This cooking pot cover has a slender perforated knob handle,[114] with an inner groove. The body is

108. Exterior color ranges from "light reddish brown" (2.5 YR 5/4) to "grayish reddish brown" (2.5 YR 6/6) in four examples, two others are "light reddish brown" (10 R 5/4) or "grayish reddish orange" (10 R 5/6), while the remaining two examples are of red-purple hues.
109. This name equivalent, non-existent in the chart used (n. 8 above), is taken from the *Munsell Soil Color Charts*.
110. One handle is reconstructed.
111. See Egloff (above, n. 30), types 138-140, p. 103, Pls. 18:1, 2; 51:6; 52:1, 3; 93:5; and H.W. Catling (above, n. 84), Fig. 7:p. 96, Fig. 27:p. 185, pp. 79-80; Catling and Dikigoropoulos (above, n. 84), Fig. 3:14, Pl.XXXIXB (rather low handle), the Salamis Bench Deposit (*ibid.*, Fig. 7:7, 8).
112. This is assumed.
113. One example is within the color range of type 2, the other is "strong brown" (5 YR 4/6) in section and "moderate reddish brown" (2.5 YR 4/4) on the exterior.
114. It is interesting to note references to cooking pot covers with similar features in earlier rabbinic literature. *Mishna Kelim* 2, 5 states, "The cover of a stew-pot is not susceptible to uncleanness (i.e., ritual impurity — D.A.-B.) when it has a hole or a pointed top (i.e., a knob handle, because then it could not be used as a receptacle — D.A.-B.), but if it has neither hole nor pointed top it is susceptible because she (i.e., the housewife — D.A.-B) drains the vegetables into it." *Kelim*, translated with introduction and notes by I.E. Slotki in *The Babylonian Talmud*, Soncino edition, ed. I. Epstein (London, 1948), p. 16. The translation by H.

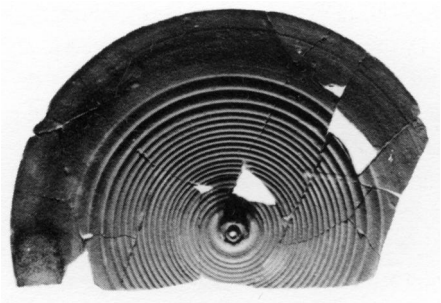
ridged from the knob to about 60% of its radius, the ridging gradually growing sparser from the center outward. The cover occurs in flatter and more rounded varieties. Fabric is harder than in type 1B, and is sandy, with occasional white and gray grits (up to 1 mm.). Color varies from "strong brown" to "brownish gray." Six examples were found.

1. Fragment of cooking pot cover with perforated knob (Fig. 4:8=Ill. 115). A rather flat variety. Color is "strong brown" (2.5 YR 4/8) in section and "grayish reddish orange" (10 R 5/6) on the exterior.
2. Fragment of cooking pot cover with perforated knob (Fig. 4:9=Ill. 116). A more rounded variety, fired "very dark gray" (7.5 YR 3/0) in section, and "weak red" to "dark gray"[115] (10 R 4/2-2.5 YR 4/0) on the exterior. There are small areas of "moderate reddish orange" (10 R 6/8) discoloration on the exterior.

Type 1B

This cover has a relatively broad knob, with an inner groove but without perforation. The entire body is lightly ridged. There are occasional lime grits, up to 1 mm. in size. Color of the illustrated example is "pale orange yellow" (7.5 YR 8/4) in section and on the interior, and "moderate yellowish pink" (5 YR 8/4) on the exterior. Two examples[116] were found.

1. Fragment of cooking pot lid with knob (Fig. 4:10= Ill. 117).



Ill. 115. Cooking pot cover type 1A.

Ill. 116. Cooking pot cover type 1A.

Ill. 117. Cooking pot cover type 1B.

MISCELLANEOUS WARES

The following vessel fragments account for about 6% of the RHB (14 pieces).

Plain Bowls

The single plain bowl fragment found (Fig. 4:11) has a rolled rim with an inset below.[117] It contains common specks and an occasional lump of lime (2-4 mm.). Section core is "moderate reddish orange" (10 R 6/8). The outer section and exterior are "light yellowish brown" (7.5 YR 7/4).

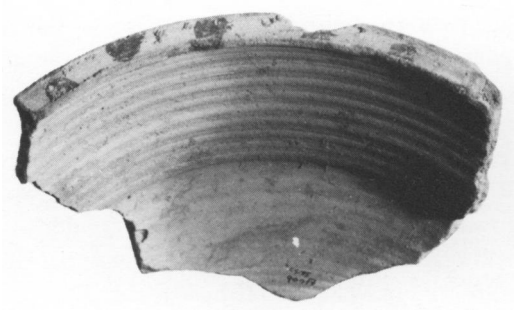
Kraters

1. Almost straight-walled large bowl-krater (Fig. 4:12) bearing a set of grooves on the outer wall. Fabric contains abundant white and occasional black grits of up to 1 mm.
2. This krater has a sharply carinated wall and a horizontal rim with inset near the inner lip (Fig.

Danby ("... if there is no hole in it or if it has not a pointed top...") in *The Mishna* (London, 1933, p. 607), and the interpretation by Zevulun and Olenik (above, n. 19), pp. 34*, 64, Figs. 157, 158, 171), that the perforated covers were generally used for draining vegetables, are not acceptable, since they do not agree with the halachic context of the Mishna. A perforated cooking pot cover was not susceptible to impurity specifically because it was not used a receptacle. Also see *Tosefta Kelim*, Bava Kamma 2, 5 (and S. Lieberman, *Tosefeth Rishonim*, 3 [Jerusalem, 1939], p. 7).

115. The name equivalents are taken from the *Munsell Soil Color Charts*.
116. The second example is "light brown" (5 YR 6/6) in section, with a core of "light grayish yellowish brown' (10 YR 6/3), and "moderate yellowish pink" (5 YR 7/6) on the exterior.
117. See Riley (above, n. 7), p. 35, no. 35 for a smaller bowl of similar form.

4:13=Ill. 118). There are occasional lime inclusions up to 1 mm. in size. The vessel is covered with a "pale orange yellow" (10 YR 8/4) wash; the rim is decorated with blobs of grayish red-purple color. Section color is "moderate orange" (2.5 YR 6/8). This was the only open vessel with painted decoration found in the Byzantine Building. A series of painted kraters similar in form, from Khirbet el-Kerak, are dated to the Byzantine period.[118]



Ill. 118. Krater fragment.

Mortarium

A flat base fragment of a mortarium (Fig. 4:14) with very abundant lime and gray grits up to 2 mm. in size. Color is "light brown" (5 YR 6/6) in section, "light yellowish brown" (7.5 YR 7/4) on the exterior, and "moderate yellowish pink" (5 YR 7/4) on the interior.

Cups

1. Rim fragment of cup (Fig. 4:15). It has a rounded rim and rough exterior, and contains occasional specks of mica. Color is "light brown" (5 YR 5/6) in section, "grayish reddish orange" (2.5 YR 6/6) on the exterior.
2. Rim fragment of cup (Fig. 4:16). The vessel is thin walled, with occasional fine white grits. Color is "light brown" (5 YR 6/6) in section and "moderate yellowish pink" (5 YR 7/6) on the exterior.

Jugs

Fragments of five jugs were recovered.

1. Fragment of jug rim and neck, with strainer (Fig. 4:17). The neck is narrow, with a wider vertical rim, and carination just above the strainer. At the height of the strainer there are several exterior grooves. Sandy fabric. Section color varies from "brownish orange" (2.5 YR 5/8) to "very dark gray"[119] (2.5 YR 3/0), exterior color is "light reddish brown" (10 R 6/4), and interior color "dark reddish gray" (10 R 4/1).
2. Fragment of jug with splaying neck (Fig. 4:18). Prominent exterior ridge at mid-neck, grooving from ridge to plain rim. The jug was manufactured in two stages, with the neck attached to the vessel body, as attested by the extraneous clay below the base of the neck at one side of the vessel interior. The fragment contains occasional lime and gray grits of about 1 mm. Color is "light brown" (5 YR 6/6) in section, "moderate yellowish pink" (5 YR 7/6) on the exterior.
3. Flat base and fragmentary body of jug or cup (Fig. 4:19). The base and upper body are grooved. The fragment contains occasional fine grits of lime. Color is "brownish orange" (2.5 YR 5/8) in section, "grayish reddish orange" (10 R 5/6) on the exterior, discolored to grayish red-purple on parts of the vessel.
4. Base fragment of jug or cup (Fig. 4:20), very similar to the above example but with a ring base.
5. Fragment of jug body with narrow ring base (Fig. 4:21). Fine white grits and mica are common. The "light reddish brown" (10 R 5/4) exterior is almost completely coated with a "pale orange yellow" (10 YR 8/3) wash. Section is almost equally divided between "dark gray"[120] (2.5 YR 4/0) on the interior (the same as the interior color) and "strong brown" (2.5 YR 4/8) on the exterior. This vessel seems to belong to a class of painted Coptic jugs of late Byzantine date.[121]

Juglet

Juglet base and body fragment (Fig. 4:22). Irregular ridging. Coarse ware with occasional grits of lime, usually fine, rarely 1 mm. in size. Section color is "light olive brown" (2.5 Y 5/2) on the interior, "light

118. Delougaz and Haines (above, n. 100), pp. 35-36, Fig. 36:2=Pl. 54:1.
119. The name equivalent is from the *Munsell Soil Color Charts*.
120. The name equivalent is from the *Munsell Soil Color Charts*.
121. See U. Zevulun, "A Note on Imported Coptic Pottery in Palestine," (Hebrew with English summary), *Museum Ha'aretz Tel Aviv, Year Book* 17-18 (1975), 53-60; also see Delougaz and Haines (above, n. 100), p. 35, Fig. 36:1=Pl. 57:7. Cf. Egloff (above, n. 30), types 213-214, 216-217 (pp. 128-129, and appropriate plates).

brown" (7.5 YR 5/4) on the exterior, with a "moderate orange" (5 YR 6/8) core. Exterior color is "moderate yellowish pink" (5 YR 7/6).

Unguentarium

Uguentarium rim fragment (Fig. 4:23). Section color is "moderate orange" (5 YR 6/8) and the exterior is "grayish reddish orange" (10 R 5/6).

Large Storage Vessel

Handle of a large storage vessel (Fig. 4:24). Four grooves striate the length of the handle. A diagonal row of four[122] circular impressions of 3 mm. diameter appear on the body above and to the left of the handle. There are abundant lime and gray grits, fine to 1 mm. in size. Color is "light brown" (5 YR 6/6) in section, "pale orange yellow" (7.5 YR 8/6) on the exterior, and "moderate yellowish pink" (5 YR 7/6) on the interior.

LATE ROMAN FINE WARE

The twenty-seven[123] examples of late Roman fine ware found in the Byzantine Building account for about 12% of the total RHB. The classification below is according to J.W. Hayes. See Hayes' work for detailed descriptions of fabric, color, and distribution.[124] Hayes' suggested chronology for each of the forms is referred to in the footnotes.

"African Red Slip" Ware[125]

Four examples of this ware were recovered, one of which is probably residual.

1. Complete bowl. Form 105[126] (Fig. 4:25=Ill. 119). Rounded rim, one groove on foot.[127]
2. Rim fragment (Fig. 4:26). A variant of Form 99C.[128]
3. Rim fragment. Form 104C[129] (Fig. 4:27). Uncertain diameter. Two grooves below rim on the interior.
4. Rim fragment (Fig. 4:28). Similar to Form 9A in form and decoration, but in an unusual gray fabric. Probably a residual piece.[130]

"Late Roman C"[131]

"Late Roman C" and "Cypriote Red Slip" were more plentiful in the Building than "African Red

Ill. 119. "African Red Slip" bowl form 105.

122. The fourth impression was only partially preserved.
123. Two of the 27 pieces of fine ware were discarded before the assemblage was examined. The two discarded pieces (rims or bases) of unknown fine ware are included in the totals for the fine ware (see Table 2).
124. J.W. Hayes, *Late Roman Pottery* (London, 1972) and idem, *A Supplement to Late Roman Pottery* (London, 1980).
125. See Hayes, *ibid.*, *Late Roman Pottery*, pp. 13-299 and idem, *Supplement*, pp. 484-523 for a detailed presentation of this ware. See Landgraf (above, n. 14), pp. 56-58, 61, Fig. 17 for a discussion of the construction technique of this ware and of "Late Roman C".
126. See Hayes (above, n. 124, *Late Roman Pottery*), pp. 166-169; idem (above, n. 124, *Supplement*), p. 508. His suggested dates for the form, *c.* 580/600-660+. Hayes notes that, "broader and more rounded" rims seem to be predominant in later contexts. He adds that, "the larger examples, with a diameter of *c.* 38-40 cm., appear mainly in late contexts" (pp. 167, 169).
127. The locus of this bowl could not be ascertained; it was undoubtedly found in locus 354, 359 or 355 of the Byzantine Building.
128. See Hayes (above, n. 124, *Late Roman Pottery*), pp. 152-155; idem (above, n. 124, *Supplement*), pp. 506-507. His suggested dates for Form 99C are *c.* 560/580-620.
129. For the form, see Hayes (above, n. 124, *Late Roman Pottery*), pp. 160-166; idem (above, n. 124, *Supplement*), pp. 507-508. His suggested dates for Form 104C are *c.* 550-625. Hayes notes that, "The late unstamped series probably continues well into the seventh century." (p. 166).
130. See Hayes (above, n. 124, *Late Roman Pottery*), pp. 35, 37 and Fig. 4 and the updated chronology in idem (above, n. 124, *Supplement*), pp. 514-515, according to which the form should be dated approximately *c.* 110-120 to 180+. It should be noted that this would be the first published example of the form from Roman Palestine. Caution is warranted, because of the unusual fabric.
131. See Hayes (above, n. 124, *Late Roman Pottery*), pp. 323-370 and idem (above, n. 124, *Supplement*), pp. 525-527 for a detailed presentation of this ware and for a discussion of finds from Phocaea, a center of production in western Turkey. For a petrological report of Late Roman "C" ware by J. Glass, see Landgraf (above, n. 14), pp. 57-58, 61.

Slip" ware, with nine and eight pieces respectively represented in the corpus.

1. Rim fragment (Fig. 5:1). Form 3F.[132]
2. Rim fragment (Fig. 5:2). Close to Form 10A.[133] Indentation at mid-outer rim; lacks offset at outer rim base.
3. Rim fragment (Fig. 5:3). Form 10A.
4. Rim fragment (Fig. 5:4). Form 10B.[134]
5. Base fragment (Fig. 5:5). Probably Form 3 or 10.
6. Rim fragment (Fig. 5:6). Form 3C. Worn. A residual piece.[135]

"Cypriote Red Slip" Ware[136]

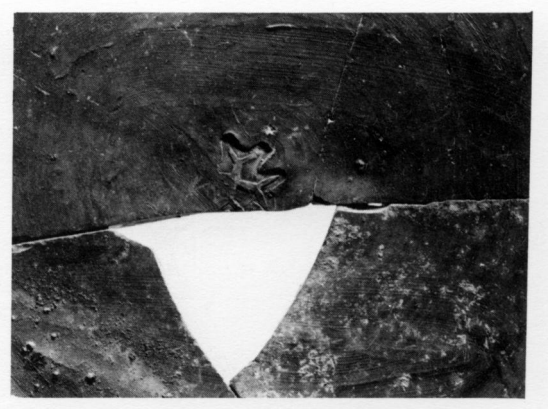
Beside the complete "African Red Slip" bowl presented above, the most complete forms of late Roman fine ware recovered were of this ware.

Form 9A[137]

1. Bowl fragment (Fig. 5:7).

Form 9B[138]

1. Bowl fragment (Fig. 5:8). Rim bears wavy incised line. Stamped cross with "fish tailed" arms at center of floor (Ill. 120). A Form 9B bowl with a very similar stamped cross was found in the Kornos Cave in northern Cyprus, in an assemblage well-dated to about the mid-7th century.[139]
2. Base fragment with portion of stamped decoration, almost certainly the same cross as the above (Fig. 5:9).
3. Bowl fragment (Fig. 5:10).



Ill. 120. "Cypriote Red Slip" bowl form 9B, base fragment with stamped cross decoration.

Form 9C

1. Bowl fragment (Fig. 5:11).

Form 9C-10[140]

1. Rim and body fragment (Fig. 5:12).

Form 10

1. Bowl fragment (Fig. 5:13). A Greek type cross and the letter Kappa were incised by hand on the base of the bowl (Ill. 121).[141]
2. Rim fragment (Fig. 5:14).

"Egyptian Red Slip" Ware[142]

Four examples were recovered.

Egyptian "A"[143]

1. Rim and body fragment (Fig. 5:15). Form J, type 2.[144]

132. For the form, see Hayes (above, n. 124, *Late Roman Pottery*), pp. 329-338 and idem (above, n. 124, *Supplement*), p. 526. Hayes refers to Form 3F as the "developed sixth century version" of Form 3 (p. 338).
133. For the form, see Hayes (above, n. 124, *Late Roman Pottery*), pp. 343-346, and idem (above, n. 124, *Supplement*), pp. 526-527. His suggested dates for Form 10A are late 6th-early 7th centuries.
134. See *ibid.* for discussion. Suggested dates are the same as for Form 10A.
135. The examples brought by Hayes date to the latter half of the 5th century (idem, *Late Roman Pottery*, p. 337).
136. See *ibid.*, pp. 371-386 and idem (above, n. 124, *Supplement*), pp. 528-529 for a detailed presentation of this ware.
137. Form 9, see idem (above, n. 124, *Late Roman Pottery*), pp. 378-382, and idem (above, n. 124, *Supplement*), p. 529. His suggested dates for Form 9A are *c.* 550-600.
138. Hayes' suggested dates for Forms 9B and 9C are *c.* 580/600 to end of the 7th century (above, n. 124, *Late Roman Pottery*), p. 382.
139. See Catling and Dikigoropoulos (above, n. 84), 46, Fig. 3:2=Pl. XXX:3. The Kornos Cave bowl is discussed by Hayes, *ibid.*, pp. 381 (no. 7), 382, who notes that this cross decoration could have been influenced by silverware motifs (*ibid.*, and n. 1).
140. For Form 10, see Hayes, *ibid.*, pp. 382-383; idem (above, n. 124, *Supplement*), p. 529. Form and chronology are similar to Form 9C.
141. See below, p. 113.
142. Idem (above, n. 124, *Late Roman Pottery*), pp. 387-401. Hayes mentions the finding of potters' stamps for this ware at Elephantine (above, n. 124, *Supplement*, pp. 530-532).
143. For the class, see idem (above, n. 124, *Late Roman Pottery*), pp. 387-397 and idem (above, n. 124, *Supplement*), pp. 530-531. Class "A" is apparently rare at sites in Israel. Hayes mentions having seen a few fragments from Nessana (Auja Hafir) in the Negev. He adds that "pieces from these regions (Cyprus, the Negev — D.A.-B.) are predominantly late (mainly seventh century)." (p. 397).
144. See *ibid.*, pp. 389-390. "Type 2 is the standard late dish-form in the ware, common in contexts of the late sixth-seventh centuries." (p. 389).

2. Rim and body fragments[145] (Fig. 5:16). Probably Form J, type 3 - the small version of type 2.
3. Flat base fragment (Fig. 5:17). Two grooves on floor. Perhaps Form AA. If so, a residual fragment.[146]

Egyptian "C"[147]

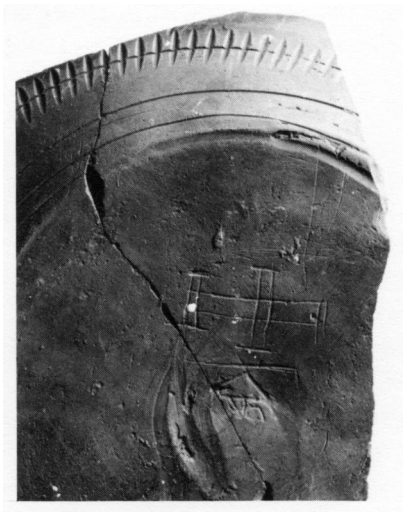
1. Base fragment (Fig. 5:18). Similar to Hayes' Fig. 89:b.[148]

FINE WARE SURVIVALS

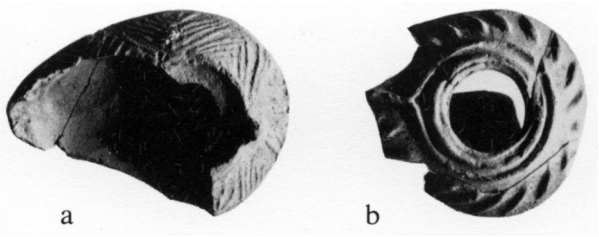
Eight examples of early Roman fine ware of various forms were recovered.[149] These account for about 3.5% of the total RHB in the Building.

LAMPS

The twenty-two lamps and lamp fragments from the Building comprise an interesting corpus of the late Byzantine, or so-called "transitional Byzantine-Arab phase" lamps. They account for about 9.5% of the total RHB.[150]



Ill. 121. "Cypriote Red Slip" bowl form 10, base fragment with incised cross and kappa. ←



Ill. 122a. Lamp type 1, fragment; b. Lamp type 3, fragment.

Type 1 — Ovoid Lamps

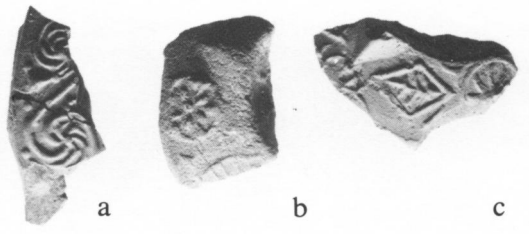
This type is characterized by its ovoid shape and biconical profile. A keyhole-shaped ridge, extending from the small "pyramid" or triangular handle, encompasses the round sunken discus with small central filling hole, the nozzle trough, and the wick hole. The base is flat and ovoid, often with a surrounding ridge. The shoulder decorations, geometric, floral or zoomorphic, are in relief. Predominant exterior color is 5 YR 7/6 ("moderate yellowish pink").[151] Other exterior colors are noted below.

This was the most prevalent type in the Building, accounting for 50% of the lamps.

The published distribution of the form is so far limited to northern Israel and Lebanon, with one reported example from Cyprus.[152] Particularly significant is a fragment of this form from Caesarea decorated with impressions of six coins issued between 610 and 650 C.E.[153]

1. Fig. 5:19=Ill. 122a. Fragment of rear and side shoulders, discus, and base. Maximum height:

145. Two fragments, almost certainly from the same vessel.
146. See Hayes (above, n. 124, *Late Roman Pottery*), p. 393.
147. For the class, see *ibid.*, pp. 399-401 and idem (above, n. 124, *Supplement*), p. 530. "The ware appears to be found only in seventh century contexts... It does not seem to have become common before *c.* 620..." (idem, *Late Roman Pottery*, p. 401).
148. *Ibid.*, p. 400.
149. Included were fragments of "Eastern Terra Sigillata" forms 14, 16 (base fragment), 25 (two handles and one base), and one fragment of "Cypriote Sigillata" form 12. Form numbers are according to the Sebaste-Samaria classification and J.W. Hayes. See G.M. Crowfoot, "Terra Sigillata General List," in J.W. Crowfoot, G.M. Crowfoot and K.M. Kenyon, *The Objects from Samaria* (London, 1957), pp. 306-357 and J.W. Hayes, "Early Roman Wares from the House of Dionysos, Paphos," *Rei Cretariae Romanae Fautorum Acta* 17-18 (1979), 96-108. Two of the Eastern Terra Sigillata fragments were recorded (without identification of form) and discarded before the corpus was studied.
150. One distinct shoulder sherd is included in the statistics.
151. Lamps and lamp fragments were left intact, hence only exterior colors are noted.
152. See R. Rosenthal and R. Sivan, *Ancient Lamps in the Schloessinger Collection* (Jerusalem, 1978), pp. 123-124 for a discussion of the form and references to its distribution. Add M.W. Prausnitz, *Excavations at Shavei Zion* (Rome, 1967), pp. 45-46, Fig. 15:14-17, Pl. XXVI a-e, and G. Hartelius, "Lamps," in: Landgraf (above, n. 14), p. 89, no. 2-4, Fig. 29:2-4. Also see the discussion by Avigad (above, n. 81), pp. 190-192.
153. See A. Kindler, "A Seventh Century Lamp with Coin Decoration," *IEJ* 8 (1958), 106-109, Pl. 24C.



Ill. 123 a, b, c. Lamp type 1, decorated fragments.

Ill. 124. Lamp type 1, decorated fragment.

Ill. 125. Lamp type 1.

Ill. 126. Lamp type 2, fragment.

2.7 cm.; overall length: 9.3 cm.; maximum width: 6.7 cm.; shoulder width: 2.2 cm. Broken discus, geometric zigzag pattern on shoulders.[154] Grainy fabric. Exterior color is "light yellowish brown" (7.5 YR 7/4).

2. Fig. 5:20=Ill. 123a. Fragment of shoulder and small portion of nozzle trough. Running pinwheel and star pattern.
3. Shoulder fragment. Design similar, but not identical, to previous example.
4. Fig. 5:21=Ill. 123c. Handle, rear shoulder, and discus fragment. Stylized palms in diamond-shaped and circular[155] borders decorate the shoulder.
5. Ill. 123b. Handle, portion of rear shoulder, and discus. Shoulder width: 2.5 cm. Stylized star decoration in circular border on shoulder; fragment of star decoration on discus. Grainy fabric.
6. Ill. 124. Portion of shoulder and nozzle trough. Shoulder finely decorated with bird, looking back, surrounded by stylized vine.[156] Exterior color is "moderate yellowish pink" (5 YR 7/4).
7. Fig. 5:22. Ovoid base and reservoir walls. The extension of the walls forms a raised edge bordering the base. Length: 10.2 cm.; width: 7.4 cm.
8. Portion of base, reservoir walls, and charred wick hole. Very similar to previous example.
9. Front portion of base, reservoir walls, and charred wick hole. Similar to nos. 7-8 above.
10. Fig. 6:1. Front portion of base. Similar to above (7-9), but with pointed base and reservoir walls, and lacking the raised ridge.
11. Fig. 6:2=Ill. 125. Complete lamp. Maximum height: 3.1 cm.; length: 9.6 cm.; width: 7.0 cm.; shoulder width: 2.5 cm. Slightly larger version of the type in a heavier fabric; charred wick hole. Base lacks the raised ridge. Remains of stylized floral designs are visible on shoulders and nozzle trough. Exterior color is "light yellowish brown" (7.5 YR 7/6) in places. The original surface was mostly worn away. The prevalent extant surface color is "brownish gray" (5 YR 4/1).

Type 2 — Lamps with Linear Pattern Decoration

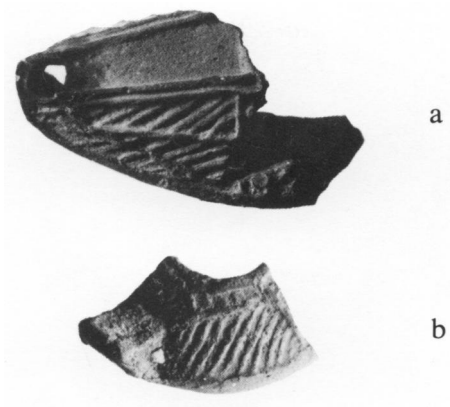
These lamps, of a general ovoid shape, are characterized by a high profile, almost egg-shaped in cross-section, a large circular or horseshoe-shaped central filling hole, a very shallow nozzle trough, and tongue

154. Similar to the decoration on a lamp from Beth She'arim. See N. Avigad (above, n. 81), p. 191 (no. 43), Pl. LXXI.
155. See *ibid.*, no. 41 for a similar decoration.
156. For a lamp from Beth She'arim decorated with birds in relief, see Kindler (above, n. 153), Pl. 24:D.

handle. The linear pattern shoulder decoration is divided into distinct zones. A lamp of this type with a Samaritan inscription has been published.[157] Four examples were found.

1. Fig. 6:3=Ill. 126. Forward portion of lamp. Height at mid-filling hole 3.8 cm.; width at front of filling hole 5.9 cm.; shoulder width at mid-filling hole 2.5 cm. Horseshoe-shaped filling hole. The base is rounded, lacking a defining border. Forward portion of shoulder decorated with a herringbone pattern, separated by a line of dots from the crisscross design alongside the filling hole. The nozzle trough and filling hole are bordered by an additional ridge. Exterior color, commonly "light brown" (7.5 YR 6/4), varies to gray and reddish brown due to firing conditions. Charred wick hole.
2. Fig. 6:4=Ill. 127. Front portion of lamp, pointed oval in shape. Flat ovoid pointed base with surrounding ridge. Round filling hole bordered by a collar of linear design. Herringbone pattern on forward shoulder, followed by a design of four concentric semicircles and a crisscross pattern. Exterior color is "light brown" (7.5 YR 6/4). Charred wick hole.
3. Figs. 6:5, 6:6=Ill. 128a. Similar to nos. 1-2, but base lacks surrounding ridge, and exterior color is "light grayish reddish brown" (5 YR 5/2). Charred wick hole.
4. Fig. 6:7=Ill. 128b. Tongue handle, rear shoulder and filling hole fragment with portion of the reservoir wall. Linear decoration. Exterior color is "light grayish reddish brown" (5 YR 6/3).

Ill. 127. Lamp type 2, fragment.



Ill. 128a, b. Lamp type 2, fragments.

Type 3 — "Slipper" Lamps with Radial Decoration[158]

The following two examples were recovered.

1. Fig. 6:8=Ill. 122b. Rear portion of lamp. Height 3.1 cm.; width 6.6 cm.; shoulder width 2.5 cm. Exterior color is "pale orange yellow" (10 YR 8/4).
2. Fig. 6:9. Front fragment. Close to the previous example. Charred wick hole.

Type 4 — Ovoid Lamp with Impressed Decoration

This is an ovoid lamp of low profile and impressed decoration. It has a sunken discus surrounded by a ridge which extends to the wick hole, circumscribed by a second ridge, from which the conical handle protrudes. The base is flat and ovoid.

This form seems to occur only in northern Israel.[159] Lamps of generally similar form were found in 3rd to 4th century contexts at Beth She'arim and other sites.[160] The form may have continued in use somewhat later than previously suspected. In any case, in the present context, the lamp would seem to be residual.

One example was found in the Byzantine Building.

1. Fig. 6:10=Ill. 129. Complete lamp with broken discus and chipped handle. Dot to linear impressed decoration on shoulders and nozzle

157. See Rosenthal and Sivan (above, n. 152), pp. 137-138 for a discussion of the form and references to its distribution. Cf. V. Sussman, "A Burial Cave at Kefar 'Ara," *'Atiqot* 11 (1976), Group C (p. 98, Figs. 2:7; 3:1, 4; Pl. XXVII:3-10 and her remarks regarding the possibility that this lamp group should be termed "Samaritan" (*ibid.*, 100-101). For the lamp with Samaritan inscription, see L.A. Mayer and A. Reifenberg, "A Samaritan Lamp," *JPOS* 16 (1936), 44-45, Pl. IIIB.

158. See Rosenthal and Sivan, *ibid.*, pp. 112, 116-120 for a description of the form and its distribution. Nos. 476-479 are close to our examples.

159. See *ibid.*, pp. 110-111 for a discussion and references to distribution.

160. See Avigad (above, n. 81), pp. 187-189 (variant b); and Rosenthal and Sivan, *ibid.*

Ill. 129. Lamp type 4.

trough. The decoration is reminiscent of the herringbone design commonly found on lamps of this type. Height 1.9 cm.; length 9.0 cm.; width 6.5 cm.; shoulder width (to inner ridge) 2.5 cm. Exterior color is generally "moderate yellowish pink" (5 YR 7/6).
Charred wick hole.

Type 5 — High Conical Lamp

This is a wheelmade lamp with a high conical ribbed body gradually tapering toward an everted rim. Strap handle, rounded base.

This and a similar wheelmade lamp are the most common forms at Mampsis in the Negev. The single lamp from Caesarea would seem to be the northernmost example reported in Israel. Two examples of similar form from Cyprus have been published.[161] "Strong brown" exterior color (2.5 YR 4/6) with "moderate yellowish pink" slip (5 YR 7/4).
Fig. 6:11. Lamp fragment. Height: 6.1 cm.

Type 6 — Round Biconical Lamp

This is a round lamp of biconical profile with high loop handle and flat round base.

Lamps probably of this form, with loop and spur handles, were practically the only examples recovered in a late Byzantine context at Tell Arqa in northern Lebanon.[162] Other examples, found at Antioch, are dated to the 7th to 8th centuries.[163]

One example was recovered at Caesarea.

Fig. 6:12. Rear portion of lamp with handle fragment and portion of forward reservoir walls. Height to rim of filling hole 3.9 cm.; width 6.9 cm. Exterior color is a "light grayish yellowish brown" (10 YR 7/3).

Miscellaneous Lamp Fragments

1-2. Fig. 6:13. Portion of shoulder, reservoir wall, and ring base. Radial pattern on shoulder.[164] An additional small shoulder and discus fragment with unclear decoration was also recovered.

CONCLUSIONS

The percentages of rims, handles, and bases of each type are compiled in Table 2 below.[165] Although the corpus is rather small, the relative proportions of the 228 vessels and fragments recovered provide significant information about the Building. In addition, the figures represent a chronologically homogeneous collection from this important maritime city, and hence should be of value for comparison with similar statistics to be gleaned from future excavations.

The corpus may be divided into five major categories according to the functions of the wares: amphoras (including amphora lids) which account for 58.8% of the pottery; cooking ware (including covers), 13.6% of the pottery; late Roman fine ware 11.8%; lamps 9.6%; and a miscellaneous category, including the handle of a large storage vessel, relatively few jugs, cups and kraters, a bowl, unguentarium and juglet, comprising 6.1% of the pottery.[166] When handles are excluded from the computations, the proportion of amphoras falls to 56.7%, while that of the other categories changes to 14.4%, 12.6%, 10.2% and 6%, respectively.

161. See Rosenthal and Sivan, *ibid.*, pp. 122-123 (variant A) for a discussion and references to distribution. For the Cypriote examples, see T.J. Oziol and J. Pouilloux, *Salamine de Chypre, I: Les Lampes* (Paris, 1969), p. 115 (no. 475), Pls. XI, XX and A.P.D. Cesnola, *Salaminia* (London, 1884), pp. 254-255, Fig. 316.

162. J.-P. Thalmann, "Tell 'Arqa (Liban Nord) Campagnes I-III (1972-1974), Chantier I, Rapport Préliminaire," *Syria* 55 (1978), 46-47, Fig. 40:1-9. My thanks to Dr. R. Rosenthal for this reference.

163. F.O. Waagé, "Lamps," in: *Antioch-on-the-Orontes*, III, ed. R. Stillwell (Princeton, 1941), p. 68 (type 60a), Fig. 82.

164. See Rosenthal and Sivan (above, n. 152), nos. 513-514 for perhaps similar lamps.

165. On the sorting and recording of the pottery, see n. 6 above.

166. I have included residual fragments in the Tables, but have omitted the early Roman "Eastern Terra Sigillata" and "Cypriote Sigillata" fragments (7 and 1 examples respectively; see Table 2). For Riley's treatment of survival pieces, cf. n. 7 above, 39-40 and Tables 6-8.

Table 1

	1 Late Byzantine Building	2 Late Byzantine Building "adjusted"	3 Late Byzantine Building "adjusted"	4 Hippodrome Level 4A	5 Hippodrome Level 3A
Amphoras	56.7%	53.5%	64.6%	64.7%	60.9%
Cooking Ware	14.4%	10.7%	12.9%	15.5%	11.8%
Fine Ware	12.6%	12.6%	15.2%	8.0%	12.2%
Lamps	10.2%	—	—	—	—
Miscellaneous	6.0%	23.3%	7.3%	11.8%	15.1%

It is interesting to compare the proportions of the various ceramic groups found in the Building with those from the hippodrome at Caesarea, a much larger corpus quantified by Riley (1975). However, one must keep in mind that both the nature of the sites and the typological categories reported differ. *A priori*, there would seem to be no particular reason why the proportions of pottery categories in the Building should be similar to those of a "massive fill" (levels 2A, 3A, 3B, 3X) or "robber trench material, unstratified or subsequent agricultural levels" (level 4A) (*ibid.*, 25-26), unless these fills originated in an area similar in function to that of the Building. This lack of a uniform basis for comparison is aggravated by two additional factors. One is the fact that the hippodrome level closest in date to the Building corpus, level 4A, whose "fine ware suggests a mid- to late-sixth century date or even later, was heavily disturbed" (*ibid.*, 26). The other factor is the absence of several of the Building pottery categories in Riley's tables. No lamps, cooking pot covers, or amphora lids are reported from any of the hippodrome levels dated to the 6th century (or later) (levels 2A, [3X], 3A, 3B and 4A; *ibid.*, Tables 3, 5-8 respectively). These categories account for 9.6%, 3.5% and 3.1% respectively, or 16.2% combined, of the RHBs found in the Building.

The above hippodrome levels also contained a large number of relatively early amphora type 1 handles, constituting between 25.6% and 44.7% of the total RHBs in these levels. These proportions bear no comparison to the Building figures.

In order to provide some basis for comparing the two sets of statistics, the proportions of only the rims and bases of the various wares are tabulated above (Table 1). In columns two and three allowances are made in the proportions of the pottery in the Building in view of the absence of the three categories in the hippodrome Tables. Thus, in the second column the lamps, cooking ware covers, and amphora lids have been transferred to the miscellaneous category, and in the third column they have been omitted. These allowances admittedly distort the correct proportions, but the extent of alteration and the comparison of the resultant sets of figures with the hippodrome statistics are of some interest. In the fourth column the proportions in hippodrome level 4A are presented. The statistics for hippodrome level 3A ("similar in both content and proportion with the bulk of the fine pottery dating to early to mid-sixth century"; *ibid.*, 25) are presented in Column 5, for comparison. Hippodrome levels 2A and 3B, similar in date to level 3A (*ibid.*, 25), contain a higher proportion of amphoras (about 73%) and lower proportion of cooking wares (about 9% and 7% respectively) than level 4A; they contain a similar or smaller proportion of fine ware (about 4% and 8% respectively).

The tabulated data reveal that there is a similarity in the proportions of amphoras and cooking ware between the Building and 6th century (or later) hippodrome levels, especially levels 4A and 3A. It would seem that the hippodrome fill originated in an area with ceramic remains similar to those of the Building. One may infer from this evidence that these proportions seem to be typical of the late Byzantine occupation levels at Caesarea.

An examination of Table 2 reveals that the ceramic corpora of the rooms represented by loci 354 and 359, the two major collections of pottery on the floor of the Building, are composed of very different proportions of the functional categories. Compared to L. 359, L. 354 contained five-and-one half times the cooking ware and less than one-third the amphoras. These proportions indicate that the two rooms probably served for different purposes. More than three-fourths of the total cooking ware from the late Byzantine Building, twenty-four pieces, was recovered from L. 354 and from the cistern situated below and opening onto L. 354, L. 355. This compares with only two fragments of cooking ware recovered from

Table 2
Quantitative Presentation of the Pottery from the Late Byzantine Building

Category and Type / Locus	L.354	L.359	L.355	L.127	L.361=L.362	L.363=L.364	L.271	Total No. RHB	%RHB of Total RHB
I Amphoras									
1	3	1	1					5	
1B	5	20	21(4)*	4[1]				50[1]	
1Y			1(1)					1	
2	2	14	14(4)			1		31	
3	3[1](1)	2	2(1)					7[1]	
4		1				1		2	
5		1	1					2	
6		5						5	
7	1	6	1					8	
9		2						2	
10		1	2					3	
11	1							1	
Misc. 1-10	2	5	3(1)					10	
Total Amphoras	17(1)	58	46(1)	4		2		127[1](12)	55.7
II Amphora Lids/ Stopper									
1A			1					1	
1B	1							1	
Misc. Amphora Lids		2	1		1			4	
Stopper	1							1	
Total Amphora Lids/ Stopper	2	2	2		1			7	3.1
Total Amphoras and Amphora Lids	19	60	48	4	1	2		134(12)	58.8
III Cooking Wares									
1A	2					1	3		
1B	2							2	
2A	3		3		1	1		8	
2B							1	1	
3	1	2						3	
4			2					2	
Misc. Cooking Wares	1[1]		2			1[1]		2	
Total Cooking Wares	9[1]	2	7		1	2[1]	2	23[1]	10.1
IV Cooking Pot Covers									
1A	1		5					6	
1B	1		1						2
Total Cooking Pot Covers	2		6					8	3.5
Total Cooking Wares and Cooking Pot Covers		2	13		1	2[1]	2	31[1]	13.6

* The parenthetical figure represents the number of handles included in the figure at the left.

[1] The following pieces were recorded and discarded before the writer first examined the assemblage:
Amphoras: Type 1B: 3 examples: L. 127
Type 3: 1 example: L. 354
Cooking Ware: Unknown Type: 1 example: L. 354
Unknown Type: 1 example: L. 363
Fine Ware: Late Roman
Fine Ware: Unknown Forms: 2 examples: L. 127
"Eastern Terra Sigillata": Unknown forms: 2 examples : L. 363

[2] The complete "African Red Slip" Form 105 bowl was recovered in L. 354, L. 359 or L. 355.

Category and Type / Locus	L.354	L.359	L.355	L.127	L.361=L.362	L.363=L.364	L.271	Total No. RHB	%RHB of Total RHB
V Fine Wares									
"African Red Slip"									
9A				1				1	
99C		1						1	
104C		1						1	
105								1[2]	
"Late Roman C"									
Phocea									
3C							1	1	
3F	1					1		2	
10A				1			2	3	
10B							1	1	
"Late Roman C" Misc. Base Fragments	1					1		2	
"Cypriote Red Slip"									
9A							1	1	
9B	1		2					3	
9C		1	1					2	
10			1	1				2	
"Egyptian Red Slip"									
"Egyptian A"									
J-2		1						1	
J-3			1					1	
AA	1							1	
"Egyptian C"	1							1	
Misc. Late Roman Fine Ware				2[1]					
Total Late Roman Fine Ware	5	4	5	5[1]		2	5	27[1,2]	11.8
(Eastern Terra Sigillata)	1	1	2			2[1]	1	7[1]	
("Cypriote Sigillata")								1	
VI Lamps									
1	2	2	4	1			2	11	
2	2	1		1				4	
3	1	1						2	
4		1						1	
5	1							1	
6	1							1	
Misc. Lamp Fragments					2			2	
Total Lamps	8	4	4	2	2		2	22	9.6
Misc. Wares									
Bowls			1					1	
Kraters and Mortarium		1	1				1	3	
Cups		1	1					2	
Jugs	2	1	2					5	
Juglet			1					1	
Ungentarium			1					1	
Large Storage Vessel		1(1)						1	
Total Misc. Wares	2	4	7				1	14(1)	6.1
Totals (excluding Eastern Terra Sigillata and Cypriote Sigillata)	44	74	77	11	4	7	10	228[2](13)	99.9

L. 359.[167] We may infer that L. 354, served by cistern 355, was probably used for food preparation.[168] On the other hand, the ceramic corpus from L. 359 comprises 81% amphoras (58 pieces). These proportions of cooking ware and amphoras seem to indicate that L. 359 was used as a storage area for wine amphoras and probably other products (the handle of the large storage vessel was found in L. 359). The fact that L. 359 had the only beaten earth floor in the Byzantine Building, while the others were of plaster, supports this proposal.[169]

Turning to the indications of trade suggested by the Building assemblage, it is important to note that the data presented in Table 2 can only reflect the evidence, i.e., the pottery recovered from three excavated rooms of a late Byzantine Building near the coast at Caesarea. An element of chance and the personal preferences of the occupants of the Building are certainly reflected in the recovered pottery corpus. Furthermore, the aforementioned suggestions as to the origins of the vessel types are largely based upon their published distribution patterns and a comparison of form alone. New evidence may drastically alter the probable provenience for any specific type. But the distribution pattern of a form often provides a reliable indication of its origins. This information, when used with discretion, with careful attention to the quantitative representation of the form in this corpus and in contemporary corpora from other excavations, can suggest trade patterns, thus contributing to the economic history of the period.[170]

The proposed geographical origins of the pottery include the following (assuming that redistribution was of negligible significance): Eight of the amphora fragments (type 7) and four of the contemporary fine ware pieces ("Egyptian Red Slip") would seem to have come from Egypt, as would a jug and perhaps a second amphora type (9). Eight of the 25 Byzantine fine ware fragments would seem to have been imported from Cyprus ("Cypriote Red Slip") and nine from Asia Minor ("Late Roman C"). However, the rather surprising possibility that a cooking pot type (type 3; three fragments) may have originated in Cyprus could add a new dimension to trade with the island in this period, provided the typological similarity were supported by firm evidence of provenience and a significant number of such vessels were found.[171] Four fine ware vessels were "African Red Slip" ware, of a suggested North African origin, but one of these was probably very early. Hayes' suggestions of a source in the east Aegean for amphora type 6, and Asia Minor for amphora type 4, have been noted.

Amphora type 2 (about 24% of the amphora RHB) would seem to have originated in the area of Gaza. This would indicate extensive trade with that region, presumably by sea. Amphora types 3 and 11 would seem to have been transported from inland. Lamp type 1 perhaps originated in northern Israel (in Caesarea itself?),[172] while lamp type 6 may have come from Lebanon. Lamp type 5 may have been manufactured somewhere in the Negev.

Even if not all the provenience suggestions prove correct, the evidence indicates that a significant portion of Caesarea's trade in the late Byzantine period was sea-borne. This maritime trade, via the port of Caesarea, was apparently an important factor in the economy of the city during the 7th century, both before and after the Moslem conquest of Caesarea in 640 C.E. (see below).

In terms of transport costs and ready access, Caesarea's maritime trade with Gaza, via its port, Maiumas, and trade with other nearby ports would have been comparable to local overland trade. Based on the Diocletianic figures, the cost ratios for sea and road transport by wagon are 1 and 28-56 respectively.[173] Hence, transport costs for a consignment of

167. It is interesting to note that the two cooking pot fragments recovered from L. 359 are of type 3. This type was perhaps imported (see above, p. 108 and n. 111). On the basis of present information, I hesitate to venture a suggestion about the possible significance, if any, of the finding of these vessels in L. 359.

168. The pottery from loci 354 and 359 was found on or very near the respective floors, and hence it probably did not originate in an upper floor.

169. See p. 46 above.

170. On the study of ancient commerce in amphora-borne products and the key problems to which this study must relate, see the writer's forthcoming review of A. Zemer, *Storage Jars in Ancient Sea Trade*, in *IEJ*.

171. See above, p. 108 and n. 111.

172. For evidence of lamp manufacture in Caesarea in the earlier Byzantine period, see V. Sussman, "Moulds for Lamps and Figurines from a Caesarea Workshop," *'Atiqot* 14 (1980), 76-79.

173. See R. Duncan-Jones, *The Economy of the Roman Empire* (Cambridge, 1974), pp. 366-368 (Appendix 17). On costs of overland transport, also see E.R. Graser, "The Edict of Diocletian on Maximum Prices," in: *An Economic Survey of Ancient Rome*, ed. T. Frank, V (Paterson, 1959), pp. 367-368 (Appendix); A.M.H. Jones, *The Later Roman Empire 284-602*, (Norman, Oklahoma, 1964), II, pp. 841-844; and M.I. Finley, *The Ancient Economy* (Berkeley and Los Angeles, 1973), pp. 126-128.

amphoras borne overland from Scythopolis (Beth-She'an) to Caesarea would have been some 15 to 30 times as much as for an identical shipment transported by merchant ship 1.8 times the distance, from Maiumas to Caesarea.[174] Assuming that amphora type 2 originated in the area of Gaza, we should not be surprised to find them in quantity at Caesarea.

Indeed, most of the pottery from the Building originated, in all probability, not far from Caesarea, in terms of overland and maritime trade.[175] This included the majority of the storage ware (amphora types 1B, 2 and 3), and functionally related vessels, which presumably contained staples such as wine and oil, as well as the utility ware used for cooking, and the lamps. These vessels were supplemented by a variegated array of wares originating in more distant ports: amphora types containing wine and perhaps other products (about 15% of the RHB), fine table ware (about 12%), and several other vessels. The latter category, important as it may be for demonstrating the maritime trade of Caesarea, accounts for a minority of the ceramic repertory of the late Byzantine city, judging from the remains in the Building.[176]

The occupants of the late Byzantine Building never made the transition to an early Moslem ceramic culture, although the numismatic[177] and ceramic evidence from below, within and above the floors, and from the cistern, seems to indicate that the deposition of the bulk of the finds occurred from the third through the sixth decade of the 7th century. By perhaps 660 C.E. the Building was no longer in use.

The effects of the Moslem conquest of Caesarea do not seem immediately evident in the Byzantine Building, either with respect to the occupants of the Building or their patterns of import and consumption. Following the conquest, some two decades passed before the Building was finally abandoned. Further excavation could establish whether this sequence of events is indeed characteristic of late Byzantine Caesarea, its inhabitants, and their trade relations.

As we have seen, the pottery recovered from the Building included several cross-decorated bowls, well-dated to the late Byzantine period.[178] The occurrence of these vessels, and especially the bowl with an etched cross, incised perhaps by the users (Ill. 121, from L. 355), constitutes evidence of some significance for determining the religion of the 7th-century Building occupants.[179]

174. The distances from Scythopolis and Maiumas to Caesarea are approximately 66 and 118 km. (about 64 nautical miles), respectively. For the former distance by Roman Road, via Legio, see the map prepared by Y. Roll, "The Roman Road System in Judaea," in: *The Jerusalem Cathedra,* 3, ed. L.I. Levine (Jerusalem, 1983), p. 139. For technical aspects of overland and sea transport, see J.G. Landels, *Engineering in the Ancient World* (Berkeley and Los Angeles, 1978), pp. 133-185.

175. On sailing speeds and cargoes, see Landels (*ibid.*), pp. 156-166. Also see L. Casson, *Ships and Seamanship in the Ancient World* (Princeton, 1971), pp. 157-200.

176. On trade in manufactured goods and agricultural produce in the Roman world, see Finley (above, n. 173), pp. 128-139.

177. See pp. 137-148 for a discussion of the coins.

178. See above, p. 112 and nn. 138-140.

179. It seems very possible that the column with the "shalom" inscription was in secondary use in the Late Byzantine Building. The inscription itself cannot be closely dated based on paleographic criteria. See J. Naveh, *On Stone and Mosaic* (Tel-Aviv, 1978) p. 5 (Hebrew).
For sources offering a glimpse of the religious life and institutions of Christians in Caesarea in the third and fourth decades of the 7th century, see W.E. Kaegi, Jr., "Some Seventh-Century Sources on Caesarea," *IEJ* 28 (1978), 177-181. Also see L.I. Levine, *Roman Caesarea, An Archaeological-Topographical Study, Qedem* 2 (Jerusalem, 1975), pp. 45-46.

Fig. 1

Vessel	Locus	Registration No.
1	355	1174/32
2	354	1144/13
3	359	1165/56
4	359	1165/68
5	359	1165/55
6	359	1165/53
7	355	1174/41
8	355	1174/11
9	355	1174/66
10	354	1144/8
11	355	1174/52
12	359	1165/9
13	355	1147/2
14	359	1165/70

Fig. 2

Vessel	Locus	Registration No.
1	355	1174/106
2	363-364	1192/3
3	359	1165/62
4	355	1147/18
5	359	1165/20
6	359	1165/69
7	359	1165/33
8	359	1165/59
9	359	1165/34
10	359	1165/14
11	354	1144/39
12	359	1165/12
13	359	1165/15
14	359	1165/61

Fig. 3

Vessel	Locus	Registration No.
1	355	1157
2	359	1165/41
3	354	1144/20
4	359	1165/69
5	355	1147/4
6	359	1165/58
7	359	1165/26
8	359	1165/60
9	354	1144/28
10	354	1144/3
11	355	1174/74
12	359	1165/57
13	355	1174/70
14	355	1174/16
15	354	1144/40
16	355	1174/92
17	359	1165/22
18	354	1144/1
19	354	1144/15
20	354	1144/16
21	271	900/3
22	354	1144/18
23	354	1144/24
24	363-364	1193/1
25	355	1174/42
26	355	1174/69

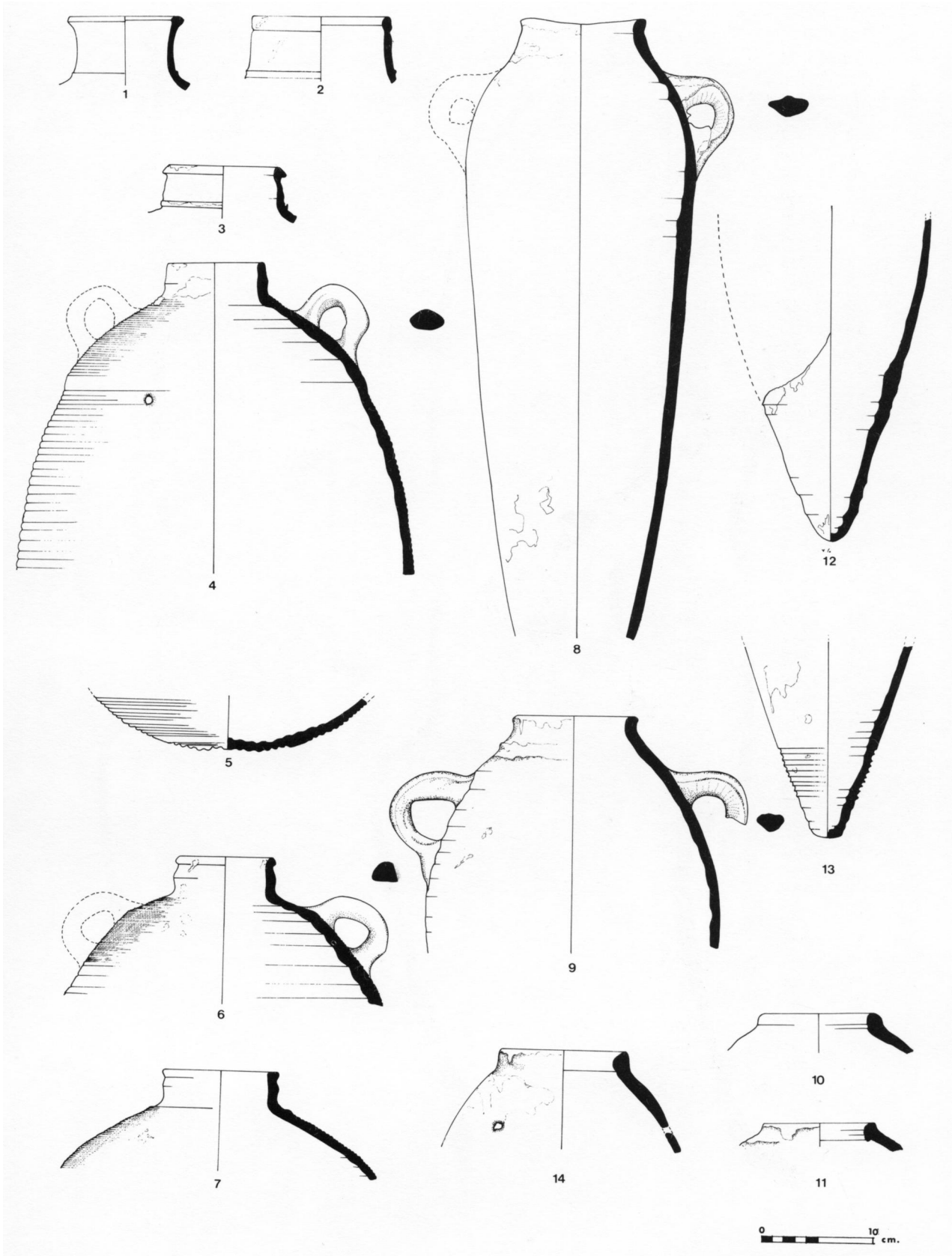


Fig. 1. Amphoras.

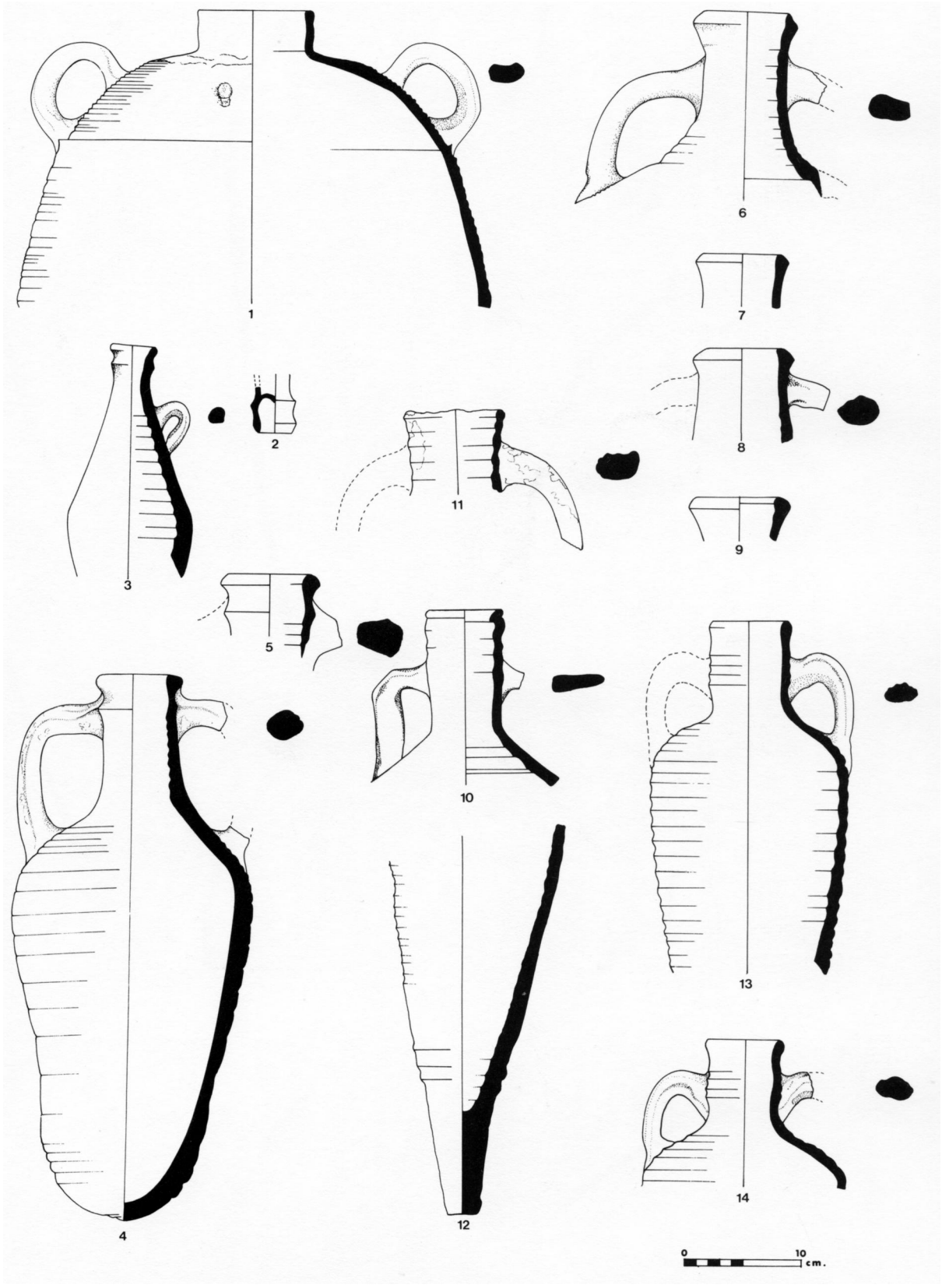


Fig. 2. Amphoras.

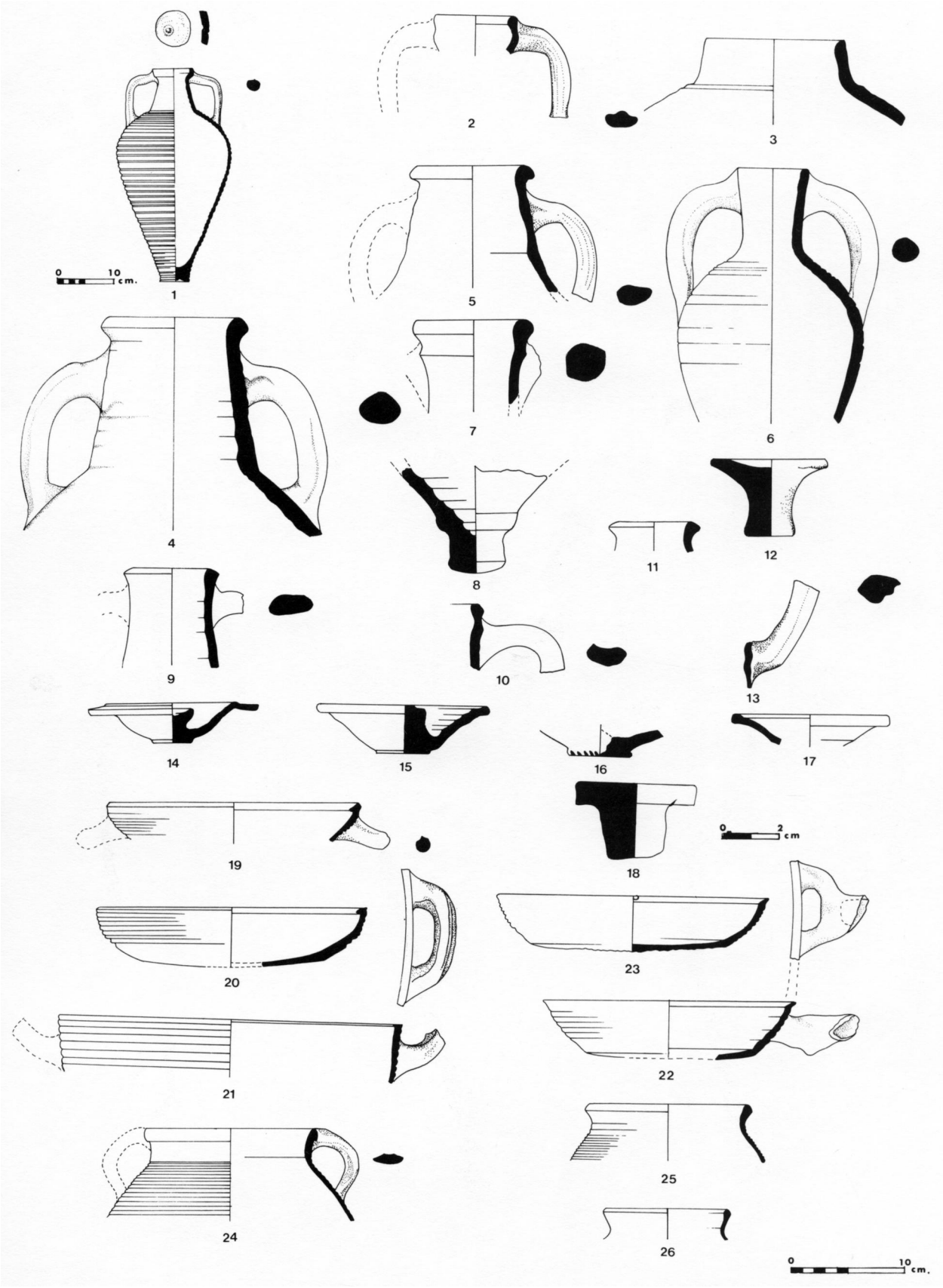


Fig. 3. Amphoras, Amphora lids and stopper, Cooking ware.

Fig. 4

Vessel	Locus	Registration No.
1	361-362	1175/3
2	271	900/6
3	359	1165/31
4	359	1165/29
5	355	1174/47
6	355	1174/86
7	355	1174/88
8	355	1174/30
9	355	1174/14
10	355	1174/29
11	355	1174/93
12	355	1174/58
13	271	900/7
14	359	1165/65
15	355	1174/46
16	359	1165/73
17	359	1165/24
18	354	1144/4
19	355	1174/92
20	355	1174/97
21	354	1144/34
22	355	1174/64
23	355	1174/94
24	359	1165/66
25	354, 359 or 355	
26	359	1165/78
27	359	1165/77
28	127	774/2

Fig. 5

Vessel	Locus	Registration No.
1	354	1144/35
2	127	774/4
3	271	823/1
4	271	823/2
5	363-364	1192/1
6	271	823/3
7	271	900/1
8	354	1144/2
9	355	1174/34
10	355	1174/2
11	355	1174/3
12	359	1165/81
13	355	1174/1
14	127	774/1
15	359	1165/72
16	355	1174/24
17	354	1144/31
18	354	1144/36
19	354	1116
20	271	900/5
21	359	1162/3
22	271	900/4

Fig. 6

Vessel	Locus	Registration No.
1	127	774/3
2	355	1180
3	359	1162/2
4	354	1118
5-6	127	774/5
7	354	1128
8	354	1136
9	359	1165/75
10	359	1162/1
11	354	1117
12	354	1194/33
13	361-362	1175/1

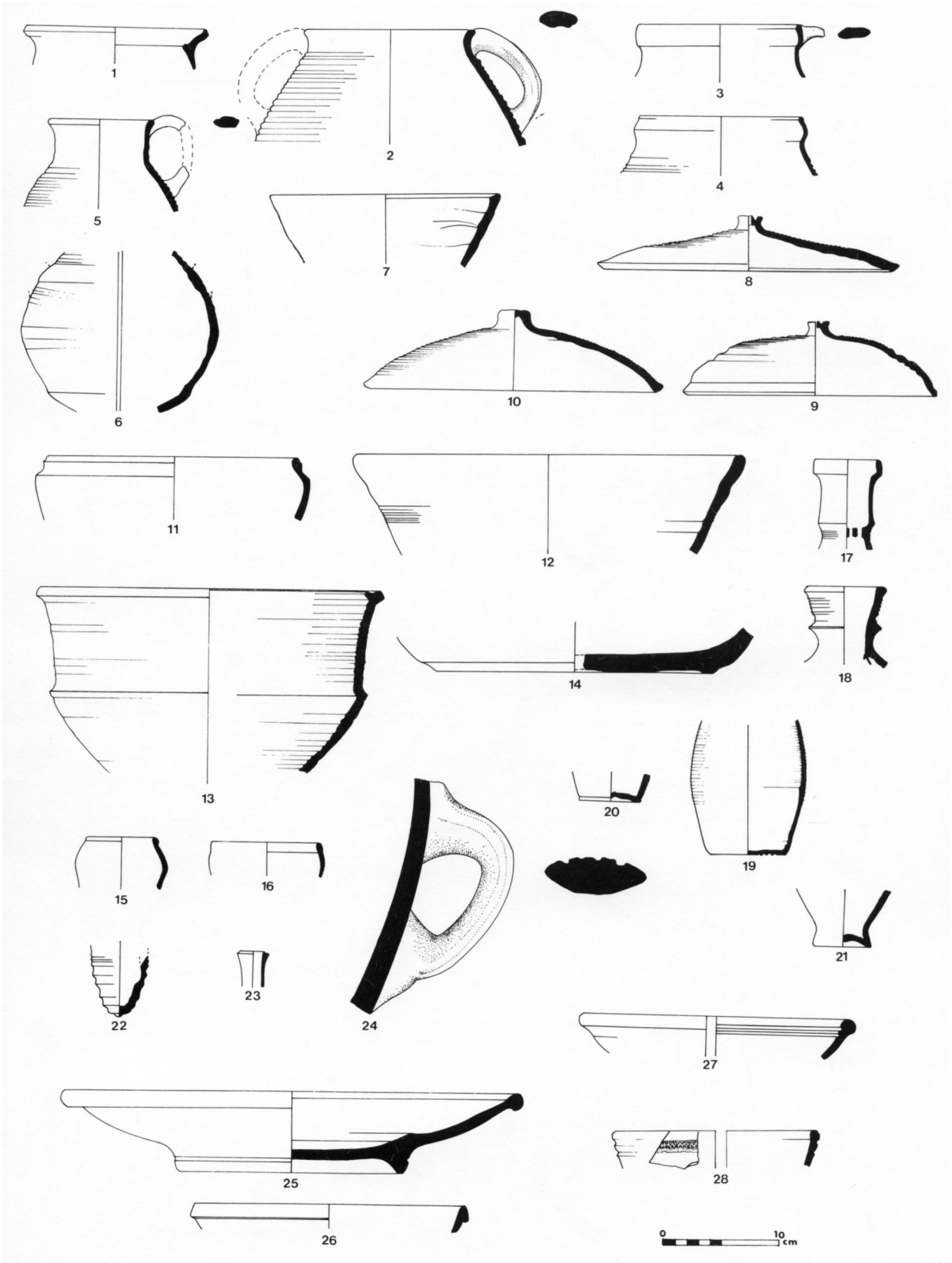


Fig. 4. Cooking ware, Miscellaneous wares, African Red Slip ware.

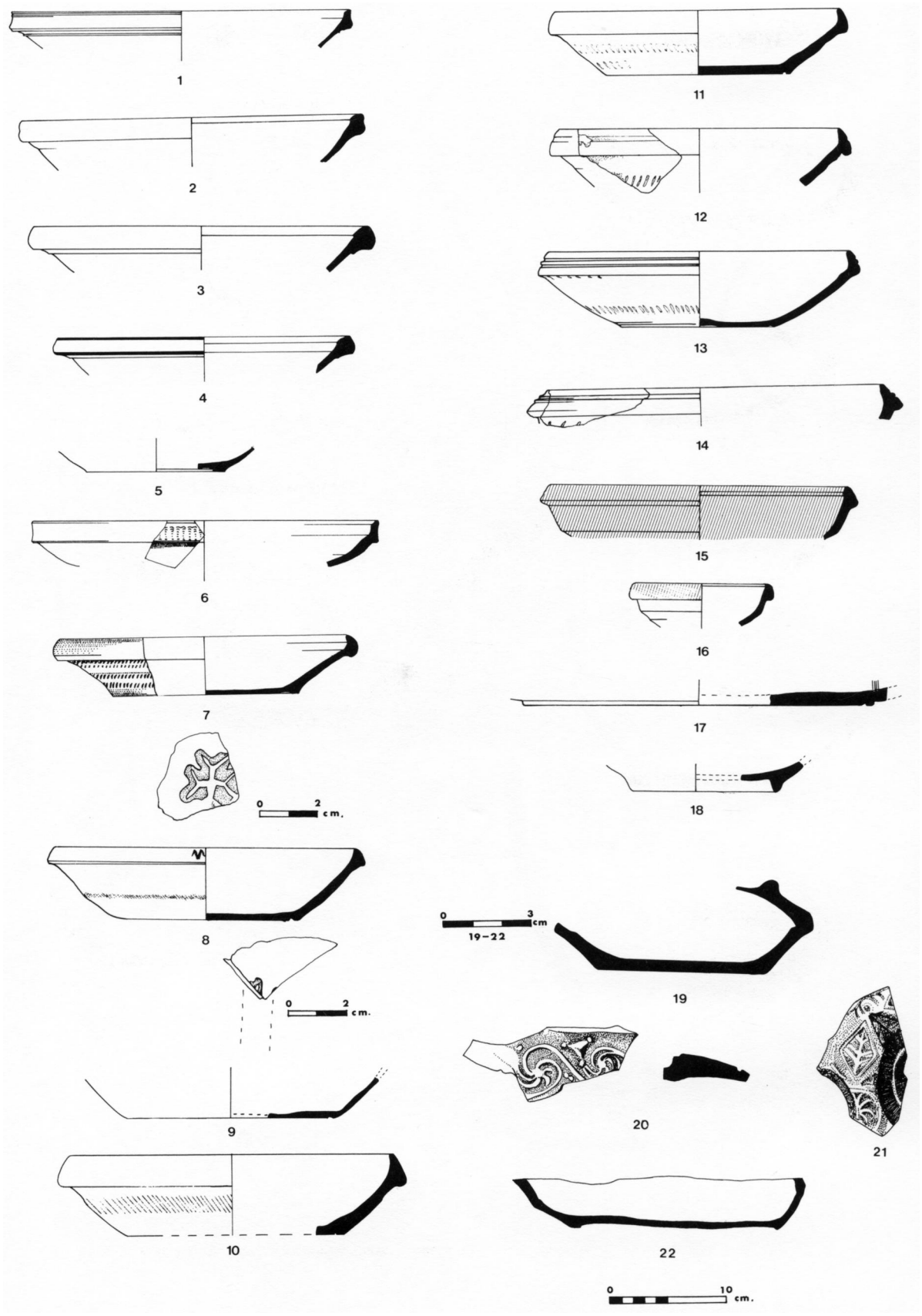


Fig. 5. Late Roman C ware, Cypriote Red Slip ware, Egyptian Red Slip ware, Egyptian C, Fine ware.

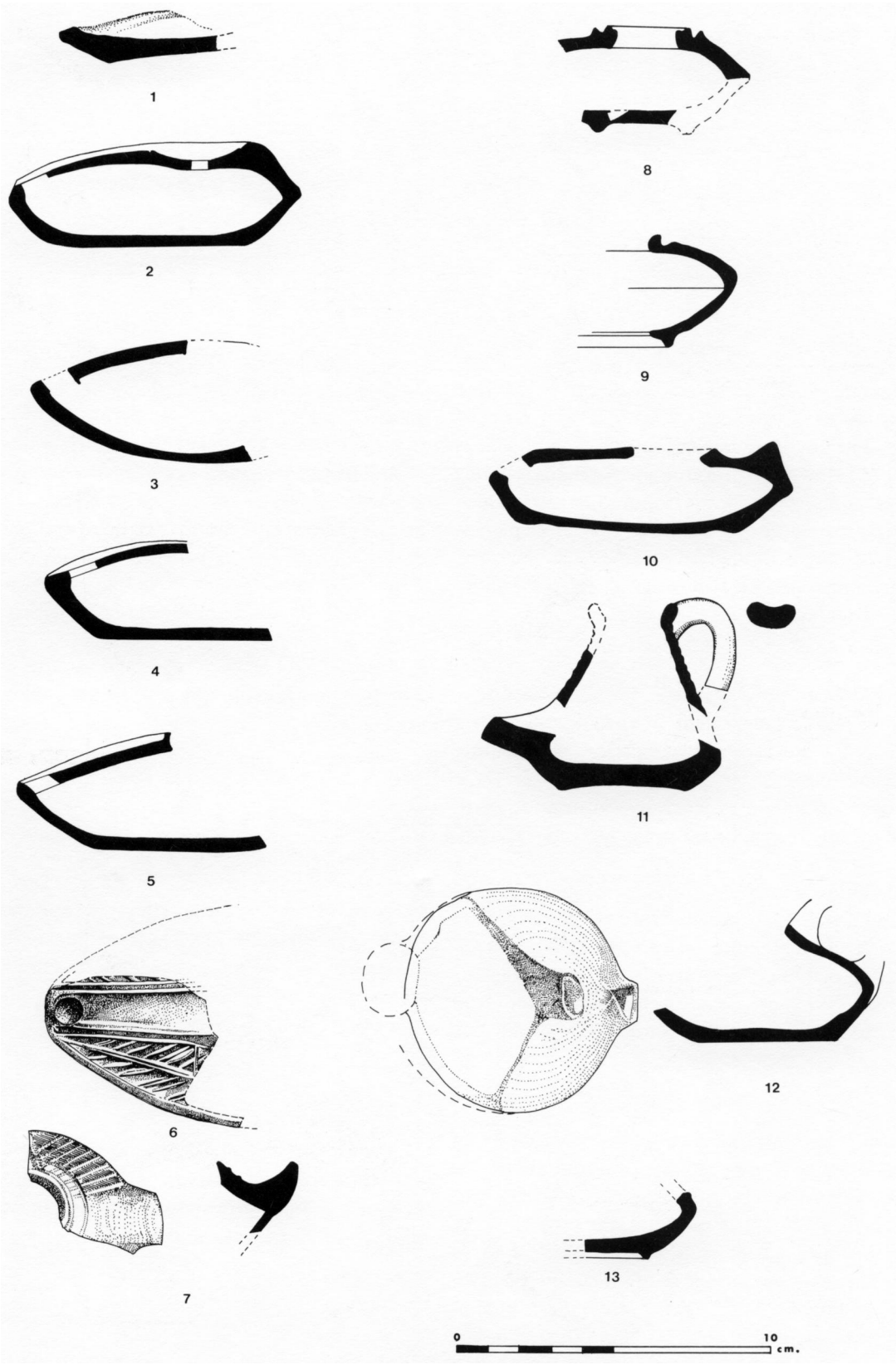


Fig. 6. Lamps and Miscellaneous lamp fragments.

APPENDIX

Petrographic Descriptions of Selected Caesarea Pottery

P. Goldberg

Sample A

This sample consists of about 5%-10% of well-sorted subangular to subrounded quartz in the size range of 100 to 250 μm. Another non-plastic component is sand-sized (150 to 600 μm) rounded carbonate grains (*c.* 3%), some of which are foraminifera tests; also occurring are traces (<<1%) of chert and fresh plagioclase feldspar. Scattered throughout the dark red brown opaque matrix is about 1% of silt-sized (30 to 50 μm) angular quartz.

Sample B

The non-plastic component is virtually all quartz with only a few traces of plagioclase. Three distinct size groups occur:

a) coarse (*c.* 300 μm) - generally well-rounded with some of the grains displaying quartz overgrowths (3%).
b) medium (100 to 200 μm) - subangular to subrounded (3%).
c) fine (silt-sized, 30 to 50 μm) - angular (*c.* 1%).

Some fine carbonate crystals are present in some of the voids, but these could be relatively recent and related to post-depositional burial.

Sample D

The non-matrix component consists predominantly (*c.* 3% to 5% of entire sample) of subrounded grains of quartz schist and biotite/muscovite quartz schist, about 500 to 750 μm in diameter; the proportion of quartz to mica varies considerably from grain to grain. The remainder of the grains is composed of 20 to 50 μm angular quartz silt, presumably a breakdown product of the polycrystalline quartz in the schist. The matrix is a light red-brown limpid clay that displays alignment (or extinction) parallel to the surface of the vessel. One or two grains of medium-sized quartz were also observed.

Sample E

The coarser grains, constituting 3%-5% of the piece, consist predominantly of sand-sized (0.2 to 2 mm.) subangular to subrounded chert (flint) grains; traces of angular quartz sand occur, as do grains of fine-grained carbonate. Noteworthy are rounded aggregates consisting of silt-sized quartz and chert in a dark brownish matrix which is virtually opaque in cross-polarized light; bubble-like voids in these aggregates suggest that they may be vitrified pottery fragments. The finer part of the non-plastic fraction consists of less than 1% angular quartz silt. The matrix is remarkable for its speckled yellow-brown appearance.

Sample F

The most striking feature is the abundance of relatively fresh muscovite mica which is oriented parallel to the sherd surface; the length of these grains ranges in size from 50 to 200 μm. The remainder of the sherd consists of well-sorted angular quartz sand and calcite, 250 μm in diameter; angular quartz silt (25-50 μm) occurs in about 2%-3%.

Sample I

This is virtually identical to sample B, but is almost entirely devoid of carbonate. Also, the matrix is deeper red and more limpid, perhaps representing slightly different firing conditions.

Sample J

The non-plastics are composed of well-sorted sand (*c.* 125 to 150 μm), mostly quartz with lesser amounts of fine-grained calcite and foraminifera; traces of plagioclase chert. Traces of angular quartz silt also occur.

Sample K

This is a relatively homogeneous fine-grained piece with mostly fine quartz silt temper (1%-2%). Scattered throughout are isolated pieces (200 to 600 μm in diameter) of angular quartz sand, chert, micritic calcite and feldspar. The matrix contains fine-grained, weathered muscovite oriented sub-parallel to the edge of the piece.

Sample L

The non-plastics are a heterogeneous mixture (200 to 500 μm; occasionally up to 1 mm.) of generally angular to subrounded grains consisting of quartz, fine-grained calcite, foraminifera test, quartz biotite schist, chert, and quartz rich red-brown clay clumps (together totalling 10%-15%). Angular quartz silt (30-50 μm) is present at 5% to 7%. The matrix, bright red limpid clay, is oriented as bands sub-parallel to the vessel surface, or locally, as mosaic patches; some of the larger grains show distinct coatings of well-oriented clay (Skel-skepic fabric according to Brewer[1]).

1. R. Brewer, *Fabric and Mineral Analysis of Soils* (New York, 1964).

C. Byzantine Pottery (Stratum 5)*

R. Bar-Nathan, M. Adato

Our knowledge of the architecture and pottery from the strata beneath Stratum 4 is limited and incomplete, as only limited areas of these strata were uncovered.

Stratum 5 contained many disturbed loci, and little pottery comes from stratigraphical context. The pottery presented here is representative of two areas:

1) The street (Squares D8/E8) - four *kurkar* surfaces with scant yet homogeneous material. The pottery is from the uppermost surfaces (loci 236, 237) and locus 266, which is a partially disturbed locus into which later vessels may have penetrated.
2) Square E2, with locus 130/1 (two floors) and locus 139/1.

The bulk of the pottery dates to the end of the 5th and 6th centuries, while a few vessels are dated to the 7th century. A possible *terminus ante quem* is provided by the 7th-century date of the Stratum 4 pottery. However it must be noted that the pottery of only one building in Stratum 4 has been studied and presented here. It seems, therefore, that the Stratum 5 pottery may be only slightly earlier in date than the Stratum 4 pottery. The coins found in Stratum 5 also attest a 5th-6th century date.

Pottery from strata prior to Stratum 5 is not presented here. A preliminary study by the writers, of the pottery and coins from these earlier strata (to be published separately), provides a date in the Late Roman-Early Byzantine periods (the 4th century C.E.).

AMPHORAS

1. Three rims and one base fragment belong to the "Gaza" amphora type (Fig. 1:6-9), also found in the palace and in Stratum 4 (see pp. 166 and 97, respectively). This is apparently a very common type in Caesarea. It is dated from the 4th to the 7th centuries.

The remaining fragments are of unidentified amphora types:

2. Six rims belong to the same general type of coarse orange-beige ware with slightly everted rim, cylindrical neck, and handles drawn from the neck under the rim (Fig. 1:1-4). One of these bears remains of part of a letter in red ink on its shoulder (Fig. 1:1).[1]

3. A rim fragment, almost identical in ware, color, slip, and shape to Fig. 3:5, was found among the Byzantine pottery of the palace (Fig. 1:5).

4. This base fragment is of a high, solid foot of coarse orange ware, similar to no. 2 above (Fig. 1:10).

STORAGE JARS

1. Four jar rims were found, of similar form, with fairly short necks and slight bulges on the neck (1:11-13). The ware is coarse or sandy beige-orange. Two have higher necks, everted rims, and fine ribbing on the shoulder (Fig. 1:11). The other two have shorter necks and flattened, straight rims (Fig. 1:12-13). These fragments appear to belong to the 5th century "Amphora Type 1B" from the Caesarea hippodrome,[2] also found in Stratum 4 (see discussion on Byzantine Building pottery, above, pp. 91-97).

2. A rim fragment of a jar with an overhanging rim (Fig. 1:14).

3. A profiled rim fragment of well-fired pink-brown ware may belong to a jug instead of a jar (Fig. 1:15). The only parallel found is a jar from the Roman bath at Rama in the Galilee, dated to the 3rd-4th centuries.[3]

4. A triangular rim fragment of a delicate pot (Fig. 1:16).

5. A high foot with splayed base belonging to a jar of brown micaceous ware (Fig. 1:17). It has a mid-4th century parallel at the Athenian agora.[4] An example of this type was found in the palace (Fig. 3:15), as well as others in the Stratum 4 Byzantine building.

* Figures for this section appear on pp. 134-136.

1. For a discussion on the significance of painted inscriptions on amphoras, see M.H. Callender, *Roman Amphoras* (London, 1965), p. xxiii.
2. J. Riley, "The Pottery From the First Session of Excavation in the Caesarea Hippodrome," *BASOR* 218 (1975), 26-27, nos. 1, 2.
3. V. Tzaferis, "A Roman Bath at Rama," *'Atiqot* 14 (1980), 73, Fig. 3:23.
4. H. Robinson, *The Athenian Agora, V: Pottery of the Roman Period* (Princeton, 1959), p. 108, M255; Pls. 28, 41.

COOKING WARE

Two fragments of different types were found:

1. A fragment of red-brown ware from a closed, globular pot with everted rim, flattened and elongated handle, and ribbed shoulder (Fig. 1:18). It is similar in form to Riley's no. 30, but the wares differ.[5]

2. A fragment of a ribbed frying pan, with a bevel-cut lip and tubular handle (Fig. 1:19). This type of vessel is usually found in late Byzantine-early Arab period contexts. A vessel from Tel Yunis is dated to the 6th century,[6] similar pans were found in the excavations against the north wall of Jerusalem in a layer of Byzantine-Arab household refuse, and at Bethany, from 6th-end 7th century.[7]

LIDS

1. A lid of brown ware, with a folded rim and smooth walls (Fig. 1:20).

2. A fragment of coarse gray ware, possibly a cooking vessel such as a lid or a bowl (Fig. 1:21).

AFRICAN RED SLIP WARE

A ring base fragment of a large bowl, of thick, granular orange ware (Fig. 2:1). The interior is slipped, whereas the exterior is rough and has three incised concentric circles. The inside floor bears a large, stamped, jeweled cross. The fragment apparently belongs to Hayes' Form 104, and the stamp to Style E (probably Style Eii). Form 104 is dated to 530-625 C.E. and Style E to 480-600 C.E. (Eii is dated to 530-600 C.E.).[8]

CYPRIOTE RED SLIP WARE

Seven fragments of vessels of this ware were found:

1. A bowl (Fig. 2:2) and a rim fragment (Fig. 2:3) belonging to Hayes' Form 2, dated to the late 5th-early 6th centuries.[9]

2. Two rim fragments belonging to Hayes' Form 9, either Type A or B, both dated to 550-700 C.E. (Fig. 2:4).[10]

3. One rim fragment is an example of Hayes' Form 9, Type C, dated to 580-700 C.E. (Fig. 2:5).[11]

4. A rim fragment bearing circular punctures along the edge of the rim (Fig. 2:6). It has no known exact parallels among Cypriote Red Slip Ware vessels, but is of ware similar to the previous examples.

5. A base fragment of a bowl bearing a stamped decoration of radiating fish, of ware similar to the fragments of Cypriote Red Slip, Hayes' Forms 2 and 9 above (Fig. 2:7). It has a parallel at Antioch, where Waagé identifies it with Late Roman D Ware.[12] Hayes identifies it with Cypriote Red Slip Ware, although the fish motif is not the usual decoration appearing on Forms 2 and 9. These forms sometimes bear other stamped decoration on the floor of the vessels.[13] Nevertheless, fish appear as a decorative motif on African Red Slip Ware vessels.[14] However, due to the resemblance of the ware of this fragment to the other Cypriote examples, and on the basis of the parallel from Antioch, this fragment probably belongs to a Cypriote Red Slip Ware bowl.

LATE ROMAN C WARE - PHOCAEAN RED SLIP WARE

1. Seven fragments found in Stratum 5 belong to Late Roman C, Hayes' Form 3 (Fig. 2:8-13). Form 3 is the most typical Late Roman C form, dated to the second half of the 5th and first half of the 6th centuries.[15]

2. A rim belonging to Hayes' Form 5, Type A, dated to 460-500 C.E. (Fig. 2:14).[16]

FINE WARE

A rim fragment of a thin-walled bowl or juglet, of well-levigated light-orange ware having a beige slip (Fig. 1:16).

5. Riley (above, n. 2), 25, 35. No. 30 is from strata H3-H4, dated to the first half of the 6th century on the basis of the fine pottery found in those strata.
6. U. Zevulun and Y. Olenik, *Function and Design in the Talmudic Period* (Ha-aretz Museum; Tel-Aviv, 1979), p. 73, No. 195.
7. R.W. Hamilton, "Excavations against the North Wall of Jerusalem, 1937-8," *QDAP* 10 (1940), 11 Fig. 7:7; S.J. Saller, *Excavations at Bethany (1949-1953)* (Jerusalem, 1957), Fig. 48, no. 2738.
8. J.W. Hayes, *Late Roman Pottery* (London, 1972), pp. 160-166, 221-222.
9. *Ibid.*, pp. 373-376, Fig. 80.
10. *Ibid.*, pp. 379-382, Figs. 81, 82.
11. *Ibid.*, pp. 379-382, Fig. 82.
12. F.O. Waagé, *Antioch-on-the-Orontes, IV: Ceramics and Islamic Coins* (Princeton, 1948), p. 54, Fig. 35; Hayes (above, n. 8), p. 371: Late Roman D Ware = Cypriote Red Slip Ware.
13. Hayes (above, n. 8), pp. 371-382.
14. *Ibid.*, Fig. 47.
15. *Ibid.*, pp. 329-338, Figs. 67-69.
16. *Ibid.*, p. 339, Fig. 70.

Fig. 1: Stratum 5 Pottery

Vessel	Loc.	Reg. No.	Description
1. amphora	237	742/1	beige ware, few small dark grits
2. amphora	237	742/11	orange ware, small and medium white grits
3. amphora	130	728/4	beige ware
4. amphora	237	742/12	orange ware, small dark grits
5. amphora	237	742/13	pink-orange ware, white exterior, few large dark grits
6. amphora	266	840/7	brown-orange ware
7. amphora	237	742/2	orange-brown ware, few small white grits
8. amphora	266	840/5	brown-orange ware
9. amphora	130	729/4	brown-orange ware
10. amphora	242	749/4	orange ware, beige exterior
11. jar	139	732/3	orange ware
12. jar	237	742/3	beige-orange ware, few large white grits
13. jar	266	840/3	orange ware, few large white grits
14. jar	139	732/4	light orange ware, few white and dark grits
15. jar (jug?)	237	742/9	pink-brown ware
16. bowl (juglet?)	139	732/7	light orange ware
17. jar	130	728/3	brown ware, few grits including mica
18. cooking pot	139	732/10	red-brown ware, white grits including crystalline particles
19. pan	266	840/6	orange-brown ware
20. lid	139	732/8	brown ware
21. lid (platter?)	130	728/5	gray ware, few grits including mica

Fig. 2: Stratum 5 Pottery

Vessel	Loc.	Reg. No.	Description
1. bowl	130	729/3	orange ware
2. bowl	237	742/5	orange ware, orange-red slip
3. bowl	237	742/6	orange-pink ware, orange-pink slip
4. bowl	130	728/1	orange ware
5. bowl	266	840/2	pink-brown ware, pink-brown slip
6. bowl	266	840/4	orange ware, orange slip
7. bowl	237	742/10	orange-pink ware, orange slip
8. bowl	242	749/2	pink ware, pink-red slip
9. bowl	130	728/6	pink-orange ware
10. bowl	266	840/10	pink ware, pink slip
11. bowl	266	840/8	orange ware, red slip
12. bowl	237	742/4	pink-orange ware, orange slip
13. bowl	139	729/1	pink-orange ware
14. bowl	266	840/9	orange ware, red slip

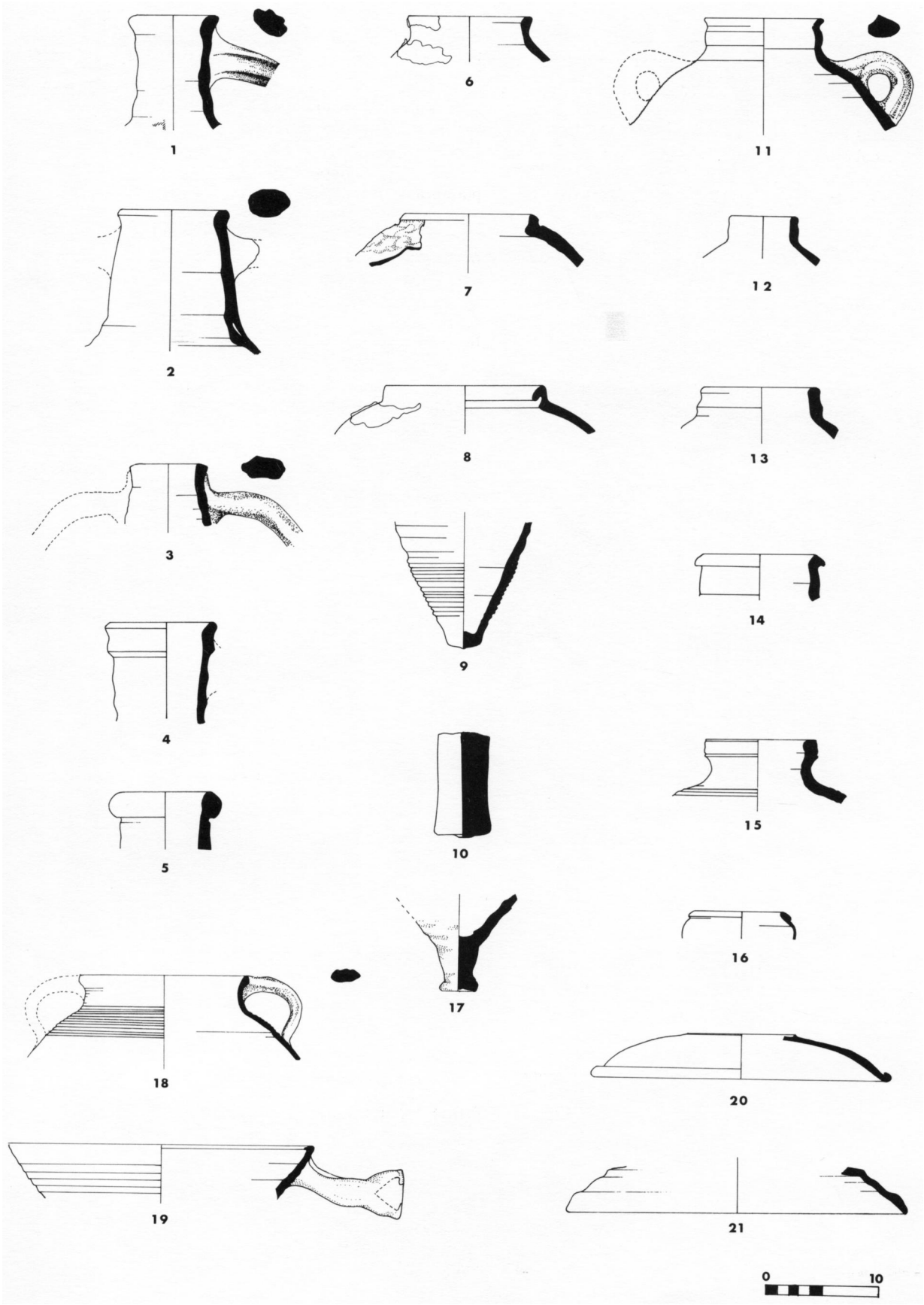


Fig. 1. Stratum 5 pottery.

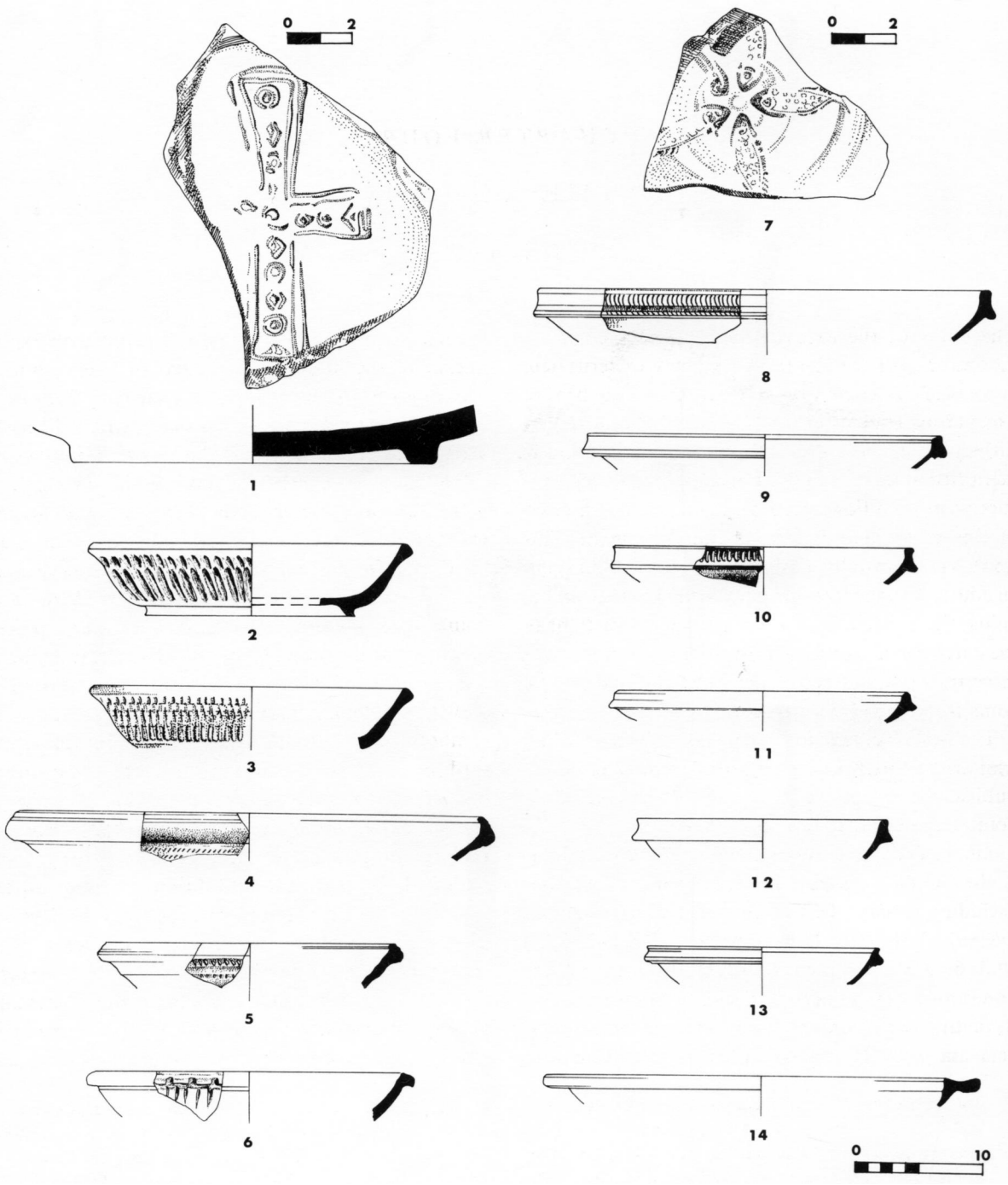


Fig. 2. Stratum 5 pottery.

CHAPTER FOUR

THE COINS*

D.T. Ariel

The coins of the excavations were cleaned in the laboratories of the Hebrew University of Jerusalem. A total of 259 coins were unearthed. All are bronze, except for a lead tessera (?) (Cat. No. 134) and a silver dirham (Cat. No. 141). All but two coins could be identified at least roughly. This clearly high degree of success in identification comes from the large number of tiny coins identified as Byzantine *minimi*. This, however, is virtually all that can be said about them. In addition to the stratigraphical value of many of the coins, the collection as a whole may throw light on the currency of Caesarea, especially when considered in conjunction with coin surveys of the site[1] and the coins from earlier excavations.[2]

The coins included in the catalogue show a striking similarity in distribution by period to the soon-to-be-published coins of the 1975 and 1976 seasons of the Joint Expedition to Caesarea Maritima. The total number of coins excavated is similar (259 vs. 388), as is the number successfully identified (108 vs. 140, excluding *minimi*). Of the identified coins (excluding *minimi*), 70% were Byzantine (i.e., 324-641 C.E.), while 69.3% of the coins found by the Joint Expedition came from this period. These high percentages of Byzantine coins contrast with the somewhat smaller percentage of Byzantine coins in the summarily reported surveys of Hamburger. The probable explanation of the discrepancy is that both expeditions excavated more extensively in overlying Byzantine strata rather than in the earlier strata, where the coins were more predominant in Hamburger's surveys.

The Byzantine *minimi* found in the excavations merit the same description as those found in the excavations of the Joint Expedition: "illegible fragmentary coins and early Byzantine *minimi*, in various states of deplorable preservation." Of the 149 of these coins from our excavations, 34 were more or less identified by the reverse types which indicate denominations either by letters—A (5 coins), B (4 coins), E (12 coins), V (1 coin, possibly a mis-strike of A or Δ) — or symbols —☧ (10 coins), cross (2 coins, including the lead coin or tessera). This large number of Byzantine *minimi* seems more impressive than it perhaps should, since, in most reports, the smallest denominations of Byzantine coins have generally been accorded less-than-full publication.[3] A more important reason for this phenomenon is that there was a local tradition of the use of *minimi* in Caesarea in earlier periods (from the end of the 2nd century B.C.E.), which continued through the Byzantine period.[4] Whether the coins are imitations or not is impossible to determine, given the poor preservation

* The coins of the 1974-1975 seasons were identified in 1977, and the catalogue was prepared. Seven additional coins from relevant loci of the 1979 season were identified in 1981. They are: loci 402, 1286 (Anastasius, Constantinople, *DOC I* 23j); loci 406, 1249 (Le Puy, Lenguedoc, 12th-13th centuries C.E., D.M. Metcalf, *Coinage of the Crusades and the Latin East in the Ashmolean Museum, Oxford* [London, 1983], pl. 17:435); loci 455, 1421 (Justin I or Justinian I, Constantinople, 518-538 C.E.); L. 1441 (Maurice, Constantinople?, 587/8 C.E.?); loci 456, 1439 (Omayyid, *Walker*, no. 599. My thanks to S. Qedar for this identification); loci 520, 1820 (Constantius II, 346-361 C.E.); and loci 524, 1641 (Caesarea, early 3rd century C.E.?).

1. H. Hamburger, "Caesarea Coin Finds and the History of the City," *Bulletin of the Jewish Palestine Exploration Society* 15 (1950), 78-82 (Hebrew); H. Hamburger, "Minute Coins from Caesarea," *'Atiqot* 1 (1955), 115-138.
2. G. Belloni, "Le Monete," in: *Scavi di Caesarea Maritima*, ed. A. Frova (Rome, 1966), pp. 229-234; R.L. Hohlfelder, "Byzantine Coins from Caesarea Maritima: The Campaigns of 1975 and 1976," *Third Annual Byzantine Studies Conference* (New York, 1977), 69-70; idem, "Byzantine Coin Finds from Caesarea Maritima: An Introduction" (in press).
3. A.R. Bellinger, *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection, I: Anastasius I to Maurice (491-602)* (Washington, D.C., 1966) (hereafter *DOC I*); P. Grierson, *Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection, II, Part I: Phocas and Heraclius (602-641)* (Washington, D.C., 1968) (hereafter *DOC II Part I*); see Hohlfelder ("Introduction," above, n. 2), comment on no. 49.
4. Hamburger ("Minute Coins," above, n. 1), 121f. and see bibliography there.

of the coins. Nevertheless, as Hamburger points out,[5] parallels in types may give rough dates for the *minimi*. Thus the symbol ☧ and the cross types belong roughly to the 5th century, while the letter types date to the 5th and 6th centuries.

Another point of interest in the excavated coins is the appearance of a large number (10) of *dodecanummia* with generally low weights (0.89-2.66 gm). Hohlfelder reports an even greater range of weights (0.52-4.12 gm). We have divided the coins on the basis of whether the obverse bust was in profile or facing. The three coins with busts in profile (Cat. Nos. 60-62) were dated to the reigns of either Justin II or Justinian I, while the seven with emperor facing (Cat. Nos. 87-93) were placed in the reigns of Phocas, Heraclius or Chosroes. In the fourteen coins of this denomination from the Joint Expedition, Hohlfelder distinguished between coins of Phocas (Cat. Nos. 78-85, see comments there) and Chosroes (Cat. Nos. 91-96), on the basis of, among other things, the appearance of a globe beneath the cross on the reverse. The identification of these coins, which is, in fact, very difficult,[6] is made even more so by their poor preservation. A similar coin, found by the Italian expedition to Caesarea,[7] was described as an "imitazione araba." In regard to similar coins found at Beth She'an,[8] G.M. Fitzgerald quotes Mr. E. T. Newell, who refers to the comparatively large number of these coins at Beth She'an and Jerusalem,[9] and the appearance of some of these coins as local imitations. The fact that coins of this denomination from three excavations in Caesarea include coins with very low weights adds support to the possibility that at least some of them were locally produced imitations. The subject, however, requires more study.

CATALOGUE[10]

ANTIOCHUS III THE GREAT

Obv. Head of king, r. (?)

Rev. [ΒΑΣΙΛΕΩΣ ΑΝΤΙΟΧΟΥ] Apollo, naked, standing l. (?)

1. L. 354, 1146 ↑ 1.85 8mm Æ. *BMC Sel.*, p. 28, no. 52. 222-187 B.C.E.

DEMETRIUS II NICATOR

Obv. Head of king, r.

Rev. ΔΗΜ[ΗΤΡΙΟΥ ΒΑΣΙΛΕΩΣ] Palm tree with two bunches of fruit.

2. L.274, 858 ↑ 1.93 16mm Æ. Tyre. Cf. *Seleucid Coinage,* nos. 99, 102, 104. 146-138, 130-125 B.C.E.

Obv. Head of king, r.

Rev. Cornucopia, with fruit on left.

3. L.344, 899 ↖ 2.30 15mm Æ. Cf. *Rois de Syrie*, no. 947. 146-138 B.C.E.

HEROD THE GREAT

Obv. [HPW] BACI Anchor.

Rev. Double cornucopiae, with caduceus between horns; above, five pellets.

4. Baulk, 587 ↓ 1.62 16mm Æ. *Jewish Coins*, 53. 40(37)-4 B.C.E.

AMBIBULUS

Obv. KAICA-POC Ear of barley, r.

Rev. LΛΘ Palm tree, with eight branches and two bunches of dates.

*5. L.126, 360 ↑ 1.89 17mm Æ. *Jewish Coins*, 217. 9 C.E.

5. *Ibid.*, 121f.
6. See J.R. Phillips, "The Byzantine Bronze Coins of Alexandria in the Seventh Century," *Numismatic Chronicle* (seventh series) 2 (1962), 235f.; A.R. Bellinger, "Byzantine Notes," *American Numismatic Society Museum Notes* 12 (1966), 107f.
7. Belloni (above, n. 2), p. 234.
8. G.M. Fitzgerald, *A Sixth Century Monastery at Beth Shean (Scythopolis)* (Philadelphia, 1939), p. 13.
9. See D. Ariel, *The Currency of Jerusalem — in the Light of the Coins Found There* (unpub. Masters thesis; Jerusalem, 1979), pp. 101, 103, n. 241.
10. The following abbreviations of bibliography appear in the catalogue:

Aelia:	L. Kadman, *The Coins of Aelia Capitolina* (Jerusalem, 1956)
BMC Alex.:	R.S. Poole, *Catalogue of the Coins of Alexandria and the Nomes* (London, 1892)
BMC Pal.:	G.F. Hill, *Catalogue of the Greek Coins of Palestine (Galilee, Samaria, and Judea)* (London, 1916)
BMC Sel.:	P. Gardiner, *British Museum Catalogue of Greek Coins: The Seleucid Kings of Syria* (London, 1878)
DOC I:	above, n. 3
DOC II Part I:	above, n. 3
Jewish Coins:	Y. Meshorer, *Jewish Coins of the Second Temple Period* (Tel-Aviv, 1967)
Kadman:	*The Coins of Caesarea Maritima* (Jerusalem, 1957)

PONTIUS PILATUS

Obv. TIBEP[IOϒ K]AICAPOC Lituus.

Rev. Date within wreath: L̊I̊...

6. L.295, 882 ↑ 1.75 16mm *Æ*. *Jewish Coins*, 230-231. 30-31 C.E.

ANTONINUS FELIX

Obv. [NEP/]W[NO/]C within wreath.

Rev. [LE K]A[ICAPOC] Palm branch.

7. L.258, 800 ↑ 2.10 18mm *Æ*. *Jewish Coins*, 234. 58 C.E.

JEWISH WAR AGAINST ROME

Obv. שתים [שנת] (Year Two) Amphora, with wide brim and two handles.

Rev. חר[ות ציון] (Freedom of Zion) Vine leaf with small branch and tendril.

*8. L.97, 551 ↖ 1.59 17mm *Æ*. Jerusalem. *Jewish Coins*, 153. 67 C.E.

RABBEL II

Obv. Jugate portraits of Rabbel II and Gamilat, r.

Rev. רבאל/גמלת (Rabbel/Gamilat) Two cornucopiae crossed.

9. L.293, 876 ↑ 1.81 17mm *Æ*. *Nabatean Coins*, 163. 70-106 C.E.

City Coins

AUTONOMOUS

Obv. Head, r., in wreath (?)

Rev. [A]Σ̊ Prow, l. (?)

10. L.359, 1160 → 1.83 14mm *Æ*. Ascalon? Cf. *BMC Pal.*, pp. 105f, nos. 8-13. 2nd cent. B.C.E.

NERO

Obv. C̊Ė Head of emperor, r., laureate, undraped; in front, incense altar.

Rev. [AC] O̊P̊ Phanebal standing to front.

11. P12, 1021 ↑ 2.08 13mm *Æ*. Ascalon. *BMC Pal.*, p. 118, nos. 96-99. 66/7 C.E.

Obv. [NEPΩN KAICAP ΣEBAΣTOΣ] Bust of emperor, r., laureate, undraped.

Rev. [KAIΣAPIA H ΠPOΣ ΣEBAΣTΩΛIMENI LIΔ] Tyche standing l. In r. hand, human bust (?); in l. hand, standard.

12. L.292, 885 ↑ 8.39 24mm *Æ*. Caesarea. *Kadman*, 1-19. 67 C.E.

FIRST CENTURY C.E.

13. L.157, 468 5.40 25mm *Æ*. Alexandria. Identified by fabric.

TRAJAN OR HADRIAN

Obv. Head, r., laureate.

Rev. Headdress of Harpocrates (?)

14. Findspot unknown ↘ 1.23 13mm *Æ*. Alexandria. Cf. *BMC Alex.*, p. 105, no. 902. 98-138 C.E.

MARCUS AURELIUS

Obv. [IMP CAES M AVR ANTONINVS AVG] Bust of emperor, r., laureate (?), draped.

Rev. [COL PRIMA FL AVG CAESAREA] Bust of Serapis, r.

15. L.274, 846 ↑ 5.94 22mm *Æ*. Caesarea. *Kadman*, 40. 161-180 C.E.

ELAGABALUS

Obv. ...ANT... Head of emperor, r., laureate (?), draped (?).

Rev. Tetrastyle temple with arcuated lintel (Inside, Tyche?).

16. L.274, 846 ↑ 5.82 23mm *Æ*. Aelia? Cf. *Aelia*, 113. 218-222 C.E.

THIRD CENTURY C.E.

Obv. Head of emperor, r.

Rev. Bust of Tyche (?) in wreath (?).

17. Baulk, 897 ↑ 3.36 19mm *Æ*.

Obv. Bust of emperor, r.

Rev. Bust of Serapis, r.

18. L.276, 829 ↑ 6.06 17mm *Æ*. Caesarea? Cf. *Kad-*

LRBC: R.A.G. Carson, P.V. Hill and J.P.C. Kent, *Late Roman Bronze Coinage A.D. 324-498* (London, 1960)

Nabatean Coins: Y. Meshorer, *Nabatean Coins, Qedem* 3 (Jerusalem, 1975)

Rois de Syrie: *E. Babelon, Les Rois de Syrie, d'Arménie, et de Commagène* (Paris, 1890)

RIC VI: C.H.V. Sutherland, *The Roman Imperial Coinage*, VI (London, 1967)

RIC VII: P.M. Bruun, *The Roman Imperial Coinage*, VII (London, 1966)

Seleucid Coinage: E.T. Newell, *The Seleucid Coinage of Tyre — A Supplement (=Numismatic Notes and Monographs* 73 [1936])

An asterisk preceding the catalogue number indicates that a photograph of the coin appears in the plate.

The apparatus after the catalogue no. is in the following order: locus, registration no., axis, weight in grams, diameter, material, denomination, mint, bibliographical reference, and date.

man, 83. Early 3rd cent. C.E.
Obv. Bust of emperor, r., laureate, draped (?).
Rev. Serapis (?) standing to l.
19. P21, 1040 ↑ 5.18 20mm Æ. Caesarea. Cf. *Kadman,* 221.
Obv. Head of emperor, r., laureate, draped.
20. L.293, 876 6.31 25mm Æ.
Obv. Head of (bearded?) emperor, r.
21. Baulk, 534 6.98 23mm Æ.

Roman Imperial Coins

MAXIMIAN HERCULIUS

Obv. [IMP C M A MAXIMIANVS PF AVG] Bust of emperor, r., radiate, draped, cuirassed.
Rev. K Γ Prince standing r. in military dress, receiving victory on globe from Jupiter standing l., leaning on sceptre.
22. L.274, 846 ↑ 1.33 18mm Æ. Aes—radiate fraction. Cyzicus. Cf. *RIC VI* Cyzicus, 16b. *c.* 295-299 C.E.
Obv. GAL V[AL MAX]IMIANVS [NOB CAES] Bust of emperor, r., radiate, draped, cuirassed.
Rev. ÅLE Prince standing r. in military dress, receiving victory on globe from Jupiter standing l., leaning on sceptre.
23. L.274, 846 ↑ 2.67 22mm Æ. Aes—radiate fraction. Alexandria. *RIC VI* Alex., 48b. *c.* 296-297 C.E.

CONSTANTINE I

Obv. Bust of emperor, r., laureate, draped.
Rev. (Only exergual line visible.)
24. L.176, 581 ↑ 3.22 21mm Æ. 307-337 C.E.
Obv. IMP CON[STANTINVS AVG] Head of emperor, r., laureate, cuirassed.
Rev. [SOL]I INVIC-TO COMITI Sol standing l., chalmys across l. shoulder, raising r. hand, globe in l.; in exergue; PL̊G̊.
25. L.174, 706 ↓ 2.15 18mm Æ. Lyons? Cf. *RIC VII* Lyons, 53. 316 C.E.
Obv. CONSTAN-[TI]NVS AVG Head of emperor, r., laureate.
Rev. PROVIDEN-TIAE AVGG Camp-gate with two towers, no doors; star above; in exergue: SMANT[A]
26. L.97, 455 ↓ 2.10 20mm Æ. Antioch. *LRBC I,* 1333. 324-330 C.E.
Obv. VRBS ROMA Bust of Roma, l.
Rev. GLOR-IAE EXERC-ITVS Two soldiers standing, each holding spear and leaning on shield; between them, one standard; in exergue: CONSZ
*27. L.343, 896 ↓ 1.46 17mm Æ. Constantinople. *LRBC I,* 1037-1038. 335-337 C.E.
Obv. VRBS ROMA Bust of Roma, l.
Rev. Wolf and twins, l.; above, two stars; in exergue: SMALÅ
28. Baulk, 587 ↓ 1.18 15mm Æ. Alexandria. *LRBC I,* 1443. 335-337 C.E.
Obv. [DV CONSTANTI-NVS PF AVGG] Head of emperor, r., veiled.
Rev. Quadriga ascending to r. in which the emperor is standing; above, hand of God.
29. P17, 1035 → 1.31 14mm Æ. Cf. *LRBC I,* 1445. 337-341 C.E.

FAUSTA

Obv. [FLAV MAX] F̊AVST[A AVG] Bust of empress, r., bareheaded, draped.
Rev. SALVS REI-PVB[LICAE] Empress standing facing, head l., holding two children; in exergue: SMH̊Å
30. L.358, 1153 ↑ 1.85 19mm Æ. Heraclea? Cf. *LRBC I,* 880. 324-330 C.E.

CONSTANTINE II

Obv. CONSTANTINVS IVN NOB C Bust of emperor, r., laureate, cuirassed.
Rev. GL̊OR-IA EXERC-I͡T̊VS Two soldiers standing, each holding spear and leaning on shield; between them, two standards; in exergue: CONSÅ
*31. L.274, 846 ↑ 1.82 18mm Æ. Constantinople. *LRBC I,* 1011. 330-335 C.E.
Obv. [VIC CONSTAN]T̊I͡N̊V̊S AVG Bust of emperor, r., laureate (and rosettes), cuirassed.
Rev. VIRTVS [AVGVSTI] Emperor standing l., head r., holding inverted spear and leaning on shield; in exergue: R̊Ɔ̸P̊
32. L.364, 1195 ↑ 1.00 16mm Æ. Rome? Cf. *LRBC I,* 589. 337-341 C.E.
Obv. DN CONSTAN-T̊I͡N̊V̊S P̊F̊ ÅV̊G̊
Rev. Figure facing (?)
33. L.130, 517 ↖ 1.72 18mm Æ. 337-346 C.E.

CONSTANTIUS II

Obv. FL IVL CONSTANTIVS NOB C Bust of emperor, r., laureate, cuirassed.
Rev. GLOR-IA EXERC-ITVS Two soldiers standing, each holding spear and leaning on shield; between them, two standards; in exergue: SMANÅ

34. L.76, 325 ↑ 2.16 18mm Æ. Antioch. *LRBC I*, 1358. 330-335 C.E.

Obv. Bust of unidentified emperor, r.

Rev. [GLOR-I]A EX[ERC-ITVS] Two soldiers standing, each holding spear and leaning on shield; between them, one standard.

35. L.76, 305 ↑ 1.23 18mm Æ. Cf. *LRBC I*, 1435. 335-341 C.E.

Obv. DN CONSTAN-[TIV]S PF AVG Bust of emperor, l., pearl-diademed, draped, holding globe in r. hand.

Rev. FEL TEMP-REPARTIO Emperor to l., holding labarum in r. hand and resting l. on shield set in ground by l. leg; in front of emperor, two captives kneeling; in exergue: SMHB

*36. L.274, 846 ↑ 4.87 22mm Æ. Heraclea. Cf. *LRBC II*, 1884 (Officina B). 346-350 C.E.

JULIAN AUGUSTUS

Obv. DN FL CL IVLI-ANVS PF Å[VG] Bust of emperor, r., pearl-diademed, draped.

Rev. SECVRI[TAS REIP]VB Bull to r.; above, two stars; in exergue: ANTA

*37. L.76, 308 ↓ 4.61 31mm Æ. Holed. Antioch. *LRBC II*, 2640. 361-363 C.E.

THEODOSIUS I OR ARCADIUS

Obv. ...IVS [PF AVG] Bust of emperor, r., pearl-diademed, draped.

Rev. [VICTORIA AVG] Two victories facing one another, each holding wreath; in field, dot; in exergue: TẺSA

38. L.354, 1129 ↑ 1.87 16mm Æ. Thessalonica. *LRBC II*, 1868-1869. 383-392 C.E.

VALENTIAN II?

Obv. ...N̊VS̊... Bust of emperor, r., pearl-diademed, draped.

Rev. Victory to l., dragging captive (?)

39. L.276, 851 ↑ 1.48 17mm Æ. Cf. *LRBC II*, 2898. 383-392 C.E.

HONORIUS AND THEODOSIUS II?

Rev. Two emperors facing (?)

40. L.242, 753 0.78 12mm Æ. Cf. *LRBC II*, 2929. 408-421 (?) C.E.

PULCHERIA

Obv. [AEL PVLCH-ERIA AVG] Bust of empress, l., mantled, with head-dress.

Rev. [SALVS REI-PVBLICAE] Cross.

41. L.127, 1196 ↑ 0.96 12mm Æ. Rome. Cf. *LRBC II*, 844. 425-455 C.E.

LATE ROMAN

Obv. ...I̊V̊N̊ NOB C Bust of emperor, l., laureate, cuirassed (in paludamentum).

42. L.276, 829 2.41 19mm Æ. First half of 4th cent. C.E.

Obv. Bust of emperor, l.

43. L.354, 1108 ↑ 1.09 12mm Æ.

44. L.142, 456 4.32 18mm Æ. Identified by fabric.

ANASTASIUS

Obv. [DN ANASTA]-S̊IVS P̊P̊ AVC Bust of emperor, r., with diadem, cuirass and paludamentum.

Rev. M Above, cross. To l. and r., star (6 pt.). Beneath: Γ. In exergue: CON

45. L.174, 641 ↓ 11.98 34mm Æ. Follis. Constantinople. *DOC I*, 23d. 498-518 C.E. Third period.

Obv. DN ANASTA-SIVS PP AVG Bust of emperor, r., with diadem, cuirass and paludamentum; star on emperor's shoulder.

Rev. M Above, cross. To l. and r., star (8 pt.). Beneath: Ê. In exergue: CON

46. L.271, 824 ↓ 14.93 33mm Æ. Follis. Constantinople. *DOC I*, 23k. 498-518 C.E. Third period.

JUSTIN I

Obv. [DN IVSTI-NVS PP] Å V̊[C] Bust of emperor, r., with diadem, cuirass and paludamentum.

Rev. M Above, cross. To l., star (6 pt.). Beneath: letter. To r., cross. In exergue: C...

47. L.139, 438 ↓ 16.28 30mm Æ. Follis. Constantinople. *DOC I*, 9. 518-527 C.E.

JUSTINIAN I

Obv. DN IVSTINI-ANUS PP AVG Bust of emperor, r., with diadem, cuirass and paludamentum.

*48. P15, 1046 ↓ 17.05 33mm Æ. Follis. *Rev.* M Above and to r., cross. To l., star (6 pt.). Beneath: Γ. In exergue: CON. Constantinople. *DOC I*, 28c. 527-538 C.E.

49. P15, 1075 ↓ 10.30 29mm Æ. Follis. *Rev.* M Above and to r., cross. To l., star (6 pt.). Beneath: Γ. In exergue: CON. Constantinople. Cf. *DOC I*, 28c. 527-538 C.E.

50. L.271, 824 ↓ 16.11 31mm Æ. Follis. *Rev.* M Above and to r., cross. To l., star (6 pt.). Beneath: Δ. *Obv.* Inscription broken differently.

Cf. *DOC I*, 28d. 527-538 C.E.

51. L.174, 706 ↓ 9.56 30mm Æ. Follis. *Rev.* M Above, cross (?). To l. and r., stars (8 pt.). The rest unclear. Probably Antioch. Cf. *DOC I*, 202. 527-538 C.E.

52. L.97, 613 ↓ 12.55 32mm Æ. Follis. *Rev.* M Above, cross. To l. and r., stars (8 pt.). In exergue: [A]NTIX. Antioch. *DOC I*, 202. 527/8 C.E.

Obv. DN IVSTINI-[ANV]S PP AVG Bust of emperor facing. In r. hand, globus cruciger. On l. shoulder, shield with horseman device (?). In field r., cross (?)

Rev. M Above, cross. To l.: ANNO. Beneath: Γ. To r., date (?). In exergue: CO[N]

53. L.174, 641 ↙ 10.24 31mm Æ. Follis. Constantinople. Cf. *DOC I*, 37c. 538-564 C.E.

Obv. Smoothed for use as jewelry.

Rev. M Above, cross. To l.: ANN[O]. Beneath: B. To r.: X / II / I In exergue: KYZ

*54. L.241, 748 14.39 42mm Æ. Follis. Holed. Cyzicus. *DOC I*, 165b. 539/40 C.E.

Obv. [DN IVSTINI-ANVS PP AVG Bust of emperor facing; in r. hand, globus cruciger.]

Rev. I surmounted by cross. To l.: ANN[O]. To r.: X / X / ЧIII In exergue: [THЧ]

55. L.97, 548 5.22 24mm Æ. Decanummium. Antioch. *DOC I*, 260. 555/6 C.E.

JUSTIN II

Obv. DN IVSTI-NVS PP AVG Justin and Sophia enthroned. He holds in r. hand globus cruciger; she holds cruciform sceptre.

Rev. M Above, cross. To l.: ANNO. Beneath: Δ. To r.: III. In exergue: CON

*56. L.97, 548 ↓ 14.90 30mm Æ. Follis. Constantinople. *DOC I*, 24e. 567/8 C.E.

Obv. DN IVSTI-NVS PP AVG Justin and Sophia enthroned. He holds in r. hand globus cruciger; she holds cruciform sceptre; cross between heads.

Rev. K Above, cross. To l.: ANNO. Beneath: NI. To r.: X

57. L.174, 641 ↓ 6.25 25mm Æ. Half follis. Nicomedia. *DOC I*, 112. 574/5 C.E.

Obv. DN IVSTI-NVS PP AVG Justin and Sophia enthroned. He holds in r. hand globus cruciger; she holds cruciform sceptre.

Rev. M Above, cross. To l.: ANNO. Beneath: A. To r.: X. In exergue: CON. / II

58. L. 96, 451 ↑ 10.75 29mm Æ. Follis. Constantinople. Cf. *DOC I*, 42a. 576/7 C.E.

59. L.174, 706 ↓ 10.04 29mm Æ. Follis. *Rev.* M Above, cross. To l.: ANNO. Beneath: Δ. To r.: X / I. In exergue: CON. Constantinople. Cf. *DOC I*, 40d. 575/6 C.E.

JUSTIN I—JUSTIN II

Obv. Bust of emperor, r., with diadem (?), cuirass and paludamentum.

Rev. IB Between them, cross. In exergue: AΛEIIΞ

*60. L.293, 876 ↑ 1.25 14mm Æ. Dedecanummium.

Obv. Inscription: DN IVS... Alexandria. Cf. *DOC I*, Justin I, 58. 518-578 C.E.

61. L.354, 1130 ↓ 2.66 13mm Æ. Dodecanummium. Alexandria. Cf. *DOC I*, Justin I, 58. 518-578 C.E.

62. L.363, 1191 1.98 12 mm Æ. Dodecanummium. Alexandria. Cf. *DOC I*, Justin I, 58. 518-578 C.E.

MAURICE

Obv. Ô... Bust of emperor facing, with cuirass, and helmet, holding globus cruciger.

Rev. M Above, cross (?). To l.: [A]NNO. Beneath: Γ. To r.: date (?). In exergue: CON

63. L.355, 1171 ↗ 7.21 28mm Æ. Follis. Identification of emperor uncertain. Constantinople. Cf. *DOC I*, 20c. 582-602 (?) C.E.

Obv. DN MAV-ŘCP P AVG Bust of emperor facing, in cuirass, and crown with cross; holding globus cruciger.

Rev. M Above, cross. To l.: ANNO. Beneath: Γ. To r.: II. In exergue: CON

64. L.97, 548 ↗ 10.28 30mm Æ. Follis. Constantinople. *DOC I*, 22c.2. 583/4 C.E.

Obv. OIIIT IΛT N-ANT ΛIPPIV (?) Bust of emperor facing; in r. hand, mappa; in l., eagle-topped sceptre.

Rev. M Above, cross. To l.: ANNO. To r.: II. In exergue: THEUP'

65. L.97, 573 ↓ 11.73 30mm Æ. Follis. Antioch. Cf. *DOC I*, 153. 583/4 C.E.

Obv. OIIIT ..~AIAITPPV Bust of emperor facing; in r. hand, mappa; in l., eagle-topped sceptre.

Rev. M Above, cross. To l.: ANNO. To r.: ? / II. In exergue: THEUP'

66. L.97, 542 ↓ 10.46 31mm Æ. Follis. Antioch. Cf. *DOC I*, 153, 155, 158. 583-589 C.E.

Obv. [DN MAVRC-TIbERP] P AVG Bust of

emperor facing, in cuirass, and helmet with star; holding globus cruciger; on 1. shoulder, shield.

Rev. M Above, cross. To 1.: ANNO. Beneath: E. To r.: $\frac{\text{II.}}{\text{I}}$ In exergue: C[ON]

67. L.355, 1171 ↓ 14.01 34mm *AE*. Follis. Constantinople. Cf. *DOC I*, 26c. Overstruck on earlier issue of Justinian I. 584/5 C.E.

Obv. [ON MAVRICI]-TIbER P Bust of emperor facing, in cuirass, and helmet with plume; holding globus cruciger; on l. shoulder, shield.

Rev. M Above, cross. To 1.: [ANNO]. Beneath: B. To r.: $_{\text{I}}$. In exergue: NIKO

68. L.173, 604 ↓ 9.01 30mm *AE*. Follis. Date vertical instead of horizontal. Nicomedia. Cf. *DOC I*, 97b. 588/9 C.E.

Obv. ...MAVRICI... Bust of emperor facing; holding globus cruciger; on 1. shoulder, shield (?)

Rev. M Above, cross. To 1.: ANNO. Beneath: A. To r.: $_{\text{III}}$. In exergue: [K]YZ

69. L.61, 836 ↑ 9.47 31mm *AE*. Follis. Very different inscription. Cyzicus. Cf. *DOC I*, 126a. 590/1 C.E.

Obv. dN MAUΠ-C NP AVJ Bust of emperor facing; in r. hand, mappa; in 1., eagle-topped sceptre; crown with cross.

Rev. M Above, cross. To 1.: ANNO. To r.: $\frac{\text{X}}{\text{X}}$.

*70. L.174, 641 ↓ 9.21 29mm *AE*. Follis. *Rev.* Beneath: Γ. In exergue: THUP. Antioch. *DOC I*, 172b. 601/2 C.E.

71. L.160, 563 ↓ 8.80 30mm *AE*. Follis. *Rev.* Beneath: S. In exergue: ṪHĖUP' Antioch. *DOC I*, 172d. 601/2 C.E.

PHOCAS

Obv. [dN FOCAS]-PER P AVG Bust of emperor facing, wearing consular robes and crown with cross; in r. hand, mappa; in 1., cross.

Rev. [X]X In exergue: [CO]NA. The rest unclear.

72. L. 355, 1171 ↓ 4.00 25mm *AE*. Half Follis. Constantinople. *DOC II Part I*, 36a, 37a. 603-610 C.E.

Obv. ON FOCA-NEPE AV Phocas and Leontia standing facing; in his r. hand, globus cruciger; in her r. hand, cruciform sceptre held transversely; between heads, cross.

Rev. M Above, cross. To 1.: ANNO. In exergue: THEUP'

73. L.355, 1171 ↓ 7.01 28mm *AE*. Follis. *Rev.* To r.: $\frac{\text{?}}{\text{II...}}$ Antioch. *DOC II Part I*, 83-86. 602-606 C.E.

*74. L.174, 641 ↓ 8.93 29mm *AE*. Follis. *Rev.* To r.: u. Antioch. *DOC II Part I*, 87. 606/7 C.E.

HERACLIUS

Obv. ...PER... Bust of emperor facing; in r. hand, globus cruciger. II

Rev. M Above, cross. To 1.: ANNO. To r.: I. In exergue: ĊÔŃ

75. L.359, 1172 ↓ 10.93 31mm *AE*. Follis. Constantinople. *DOC II Part I*, 71. 612/3 C.E.

Obv. Heraclius (1.) and Heraclius Constantine (r.) standing; in r. hands, globus cruciger; between heads, cross.

Rev. M To 1.: ANNO.

*76. L.359, 1186 ↓ 10.60 30mm *AE*. Follis. *Rev.* Above, cross. Beneath: B. To r.: $\frac{\text{II.}}{\text{I}}$ In exergue: NIKO. Nicomedia. Cf. *DOC II Part I*, 158b. 612/3 C.E.

77. L.359, 1160 ↓ 9.11 35mm *AE*. Follis. *Obv.* In r. hands, long cross. *Rev.* Above, cross. Beneath: Δ. To r.: $\frac{\text{II.}}{\text{I}}$ In exergue: CON. Two countermarks: ☧. Misstruck. Constantinople. *DOC II Part I*, 77b. 613 C.E.

*78. P28, 1063 ↓ 5.83 27mm *AE*. Follis. *Rev.* Above, cross or ☧. Beneath: E. In exergue: [C]ÔŃ. Two countermarks: ☧. Constantinople. *DOC II Part I*, 76e, 78. 613 C.E.

79. L. 363, 1191 ↙ 7.01 30mm *AE*. Follis. *Rev.* Above, cross or ☧. Beneath: Γ. In exergue: [C]ÔŃ. Two countermarks: ℞ and ℞. Constantinople. Cf. *DOC II Part I*, 76c, 77a. 613 C.E.

Obv. [dO]NE... Cross potent on base and steps

Rev. S

80. L. 354, 1146 ↓ 2.11 17mm *AE*. Hexanummium. Alexandria. *DOC II Part I*, 198. 9. 613-618 C.E.

Obv. Martina (1.), Heraclius (center), and Heraclius Constantine (r.) standing.

Rev. M Above, cross. To 1.: [ANN]O. Beneath: Γ. In exergue: COŃ

81. L. 86, 218 ↙ 7.10 28mm *AE*. Follis. Constantinople. Cf. *DOC II Part I*, 89b. *c.* 615-617 C.E.

Obv. Heraclius (1.) and Heraclius Constantine (r.) standing; between heads, cross; to 1.: ℞ and to r.: K.

82. L.354, 1132 ↓ 2.32 23mm *AE*. Half Follis. *Rev.* K Above, cross. To 1.: [A]NNO. To r.: X. In exergue: ΘES. Thessalonica. Cf. *DOC II Part I*, 145. 619/20 C.E.

83. L.174, 641 ↓ 4.59 28mm *AE*. Half Follis. *Rev.* K

Above, cross. To l.: ANNO. Beneath: B. Cf. *DOC II Part I*, 118b. *c.* 629-640 C.E.

84. L.354, 1143 ↓ 7.07 35mm *Æ*. Follis. *Rev.* M Above, cross and C (?). To l.: ANNO. In exergue: C[O]NÎ. Constantinople. Cf. *DOC II Part I*, 105-6. 629-631 C.E.

85. L.96, 451 ↓ 5.83 28mm *Æ*. Half Follis. *Rev.* K Above, cross (?). To l.: ANNO. Beneath: A. To r.: XX. Cf. *DOC II Part I*, 120a. 631/2 C.E.
II

86. L.271, 901 ↓ 5.83 27mm *Æ*. Follis. *Rev.* M Above, $\frac{\text{P}}{\text{H}}$ (?). To l.: ANNO. To r.: $\frac{\text{X}}{\text{u}}$. In exergue: CON. Constantinople. *DOC II Part I*, 112b. 634/5 C.E.

PHOCAS, HERACLIUS OR CHOSROES

Obv. Bust of emperor facing.

Rev. IB Between them, cross. In exergue: ΑΛΕΞ

87. L.95, 600 ↓ 1.68 13mm *Æ*. Dodecanummium. Alexandria. Cf. *DOC II Part I*, Phocas, 106. 602-641 C.E.

88. L.174, 641 ↓ 0.89 12mm *Æ*. Dodecanummium. Alexandria. Cf. *DOC II Part I*, Phocas, 106. 602-641 C.E.

89. L.354, 1141 ↑ 1.60 13mm *Æ*. Dodecanummium. Alexandria. Cf. *DOC II Part I*, Phocas, 106. 602-641 C.E.

90. L.355, 1151 ↓ 1.19 12mm *Æ*. Dodecanummium. Alexandria. Cf. *DOC II Part I*, Phocas, 106. 602-641 C.E.

91. L.359, 1160 1.21 11mm *Æ*. Dodecanummium. *Obv.* Unclear. Alexandria. Cf. *DOC II Part I*, Phocas, 106. 602-641 C.E.

92. Findspot unknown, 1170 ↘ 1.40 13mm *Æ*. Dodecanummium. Alexandria. Cf. *DOC II Part I*, Phocas, 106. 602-641 C.E.

93. L.363, 1191 ↓ 1.63 13mm *Æ*. Dodecanummium. Alexandria. Cf. *DOC II Part I*, Phocas, 106. 602-641 C.E.

SIXTH CENTURY

Obv. ...N̊VS̊... Bust of emperor facing (?).

Rev. M Above, cross (?). To l.: ÅN̊[N]Ô. In exergue: C[ON]

94. L.139, 434 ↓ 12.50 32mm *Æ*. Follis. Constantinople. Mid-6th cent. C.E.

Rev. M

95. L.130, 366 2.02 Originally *c.* 29mm *Æ*. Follis. ¼ of coin.

Obv. Bust of emperor, r.

Rev. K

96. L.97, 548 ↘ 4.17 22mm *Æ*. Half Follis.

Obv. Bust of emperor facing, wearing crown with cross.

Rev. M To l.: ANN[O]

97. L.355, 1171 ↓ 4.73 24mm *Æ*. Follis. *c.* 575-650 C.E.

FIRST HALF OF SEVENTH CENTURY

Obv. Ô I̊... Bust of emperor facing.

Rev. M To l.: ANN[O]. In exergue: XĊ...

98. L.354, 1131 ↓ 2.32 20mm *Æ*. Follis. Unknown type of mint of Cherson?

Obv. One (?) emperor standing.

Rev. K Above, cross. To l.: ÅN̊N̊[O]

99. L.361, 1177 ↓ 1.48 17mm *Æ*. Half Follis. Mid-7th cent. C.E.

Obv. Two emperors standing; in r. hands, globus cruciger; between heads, cross.

100. L.359, 1186 4.50 28mm *Æ*. Follis. Mid-7th cent. C.E.

Obv. In field, globus cruciger (?)

101. L.286, 874 0.99 15mm *Æ*.

Minimas

149 coins have been identified as *minimas*, predominantly of the Byzantine period (5th-7th centuries C.E.).

Rev. A (?)

102. L.97, 573 0.70 9mm *Æ*.

103. L.97, 576 0.52 10mm *Æ*.

104. L.174, 704 0.90 11mm *Æ*.

105. L.174, 706 0.38 9mm *Æ*.

106. L.354, 1133 0.29 10mm *Æ*.

Rev. B (?)

107. L.271, 824 0.42 11mm *Æ*.

108. L.271, 824 0.56 10mm *Æ*.

109. L.293, 876 0.51 12mm *Æ*.

110. L.271, 1196 0.58 10 mm *Æ*.

Rev. Є (?)

111. L.76, 380 ↑ 1.39 12mm *Æ*. *Obv.* Bust of emperor, r.

112. L.171, 553 2.45 15mm *Æ*.

113. L.174, 641 1.47 14mm *Æ*.

114. L.174, 641 ↑ 0.50 10mm *Æ*. *Obv.* Bust of emperor facing.

115. L.174, 641 0.94 11mm *Æ*.

116. L.174, 704 0.92 12mm *Æ*.

117. L.174, 704 0.43 9mm *Æ*.

118. L.174, 704 0.50 10mm *Æ*.

119. L.174, 704 0.33 11mm *Æ*.

120. L.174, 704 1.07 12mm *Æ*.

121. L.234, 788 1.29 12mm *AE*.
122. L.271, 1196 ↗ 0.56 10mm *AE*. *Obv.* Head, l., radiate (?)
Rev. V (?)
123. L.343, 896 2.70 15mm *AE*.
Rev. ⚷ (?)
124. L.174, 704 0.81 10mm *AE*.
125. L.174, 704 0.61 11mm *AE*.
126. L.174, 704 ↑ 0.53 9mm *AE*. *Obv.* Bust of emperor, r.
127. L.259/1, 772 ← 0.52 8mm *AE*. *Obv.* Bust of emperor, r.
128. L.271, 824 1.16 13mm *AE*.
129. L.271, 824 0.27 9mm *AE*.
130. L.271, 824 0.53 11mm *AE*.
131. L.354, 1146 0.91 9mm *AE*.
132. L.355, 1189 ↘ 1.91 13mm *AE*. *Obv.* Bust of emperor facing (?)
133. L.72 ← 1.13 17mm *AE*. *Obv.* Bust of emperor, r. (?)
Rev. Cross (?)
134. L.174, 641 0.87 10mm Pb (!)
135. L.174, 641 ↑ 0.23 11mm *AE*. *Obv.* Bust of emperor, r. (?)

Islamic Period

The following coins were kindly identified by Mr. A. Berman.[11]

BYZANTINE-ARAB

Obv. Standing figure of the Caliph, facing.
Rev. M Above, cross.

136. L.359, 1160 2.48 26mm *AE*. Fals. Filastia (Ramla)? *Walker*, pp. 22-25.

OMAYYID

Obv. لا اله الا الله / وحده within double circle of crescents.
Rev. محمد / رسول / الله to l., palm branch.
137. L.351, 1101 → 4.10 20mm *AE*. Fals. Ramla. *Walker*, no. 853, p. 256. *c.* 101 H./719 C.E.

ABBASID

Obv. لا اله الا / الله وحده / لا شريك له
Rev. محمد / رسول / الله ⚷
138. L.126, 360 → 2.03 18mm *AE*. Fals. Ramla. Al-Ma'mūn. 218 H./833 C.E. *NNM 118*, p. 112, no. 374.

Rev. لا اله الا / الله وحده / لا شريك له
139. L.128, 361 ↘ 2.14 22mm *AE*. Fals.
محمد / رسول / الله / كد
140. Baulk, 850 12mm *AE*. Inscriptions unclear, identification uncertain.

FATIMID

141. Surface, 1.14 19mm *AR*. Dirham. Holed. Al-Mustansir, 1036-1094 C.E.

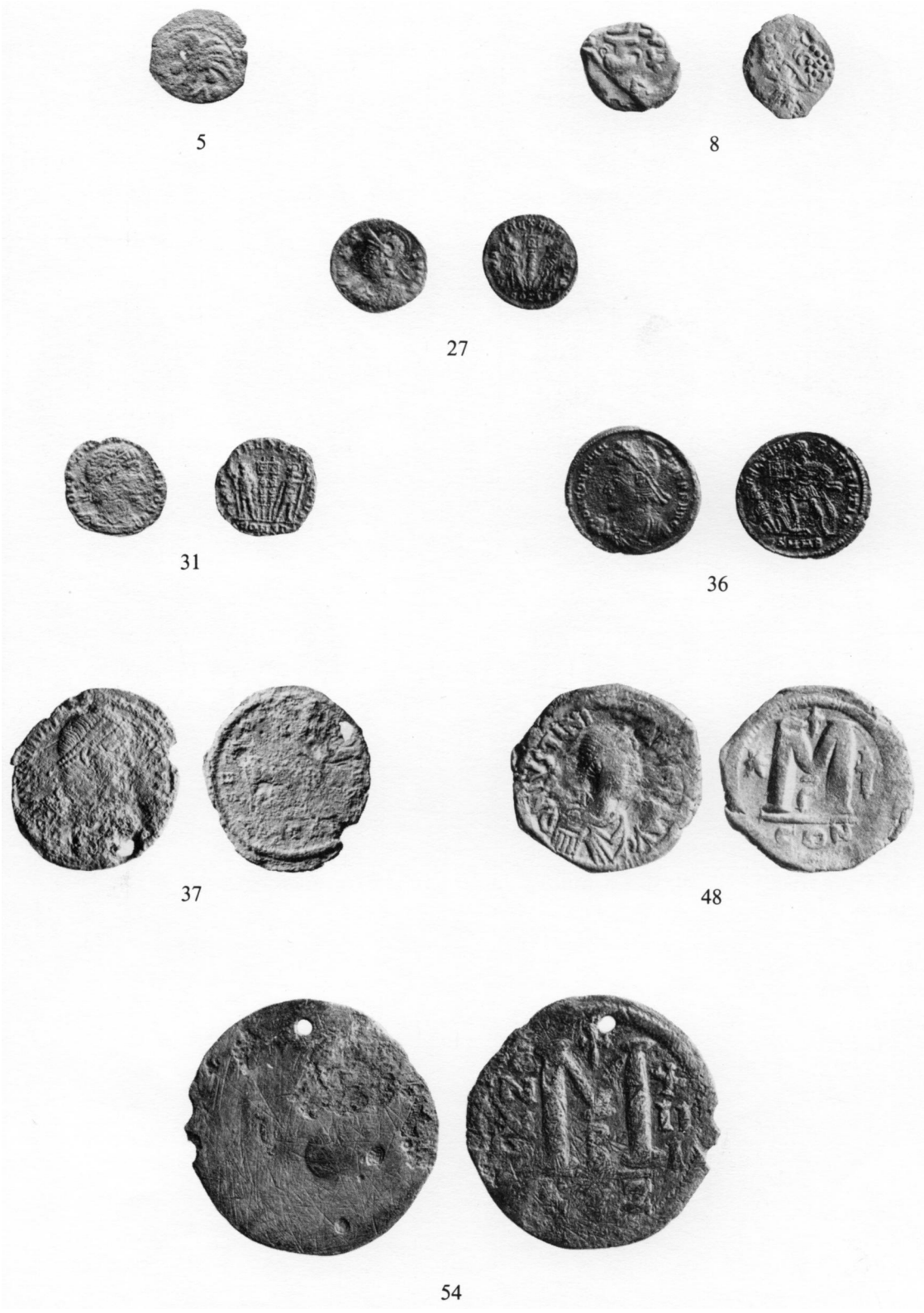
AYYUBID

Obv. الملك / العادل / حق
Rev. ابو بكر بن ايوب
142. L.75, 414 4.81 25mm *AE*. Fals. Damascus. Al-Malik al-'Adil I Sayf al-Din Abū Bakr. 598 H./1201 C.E. *Lavoix*, no. 612.

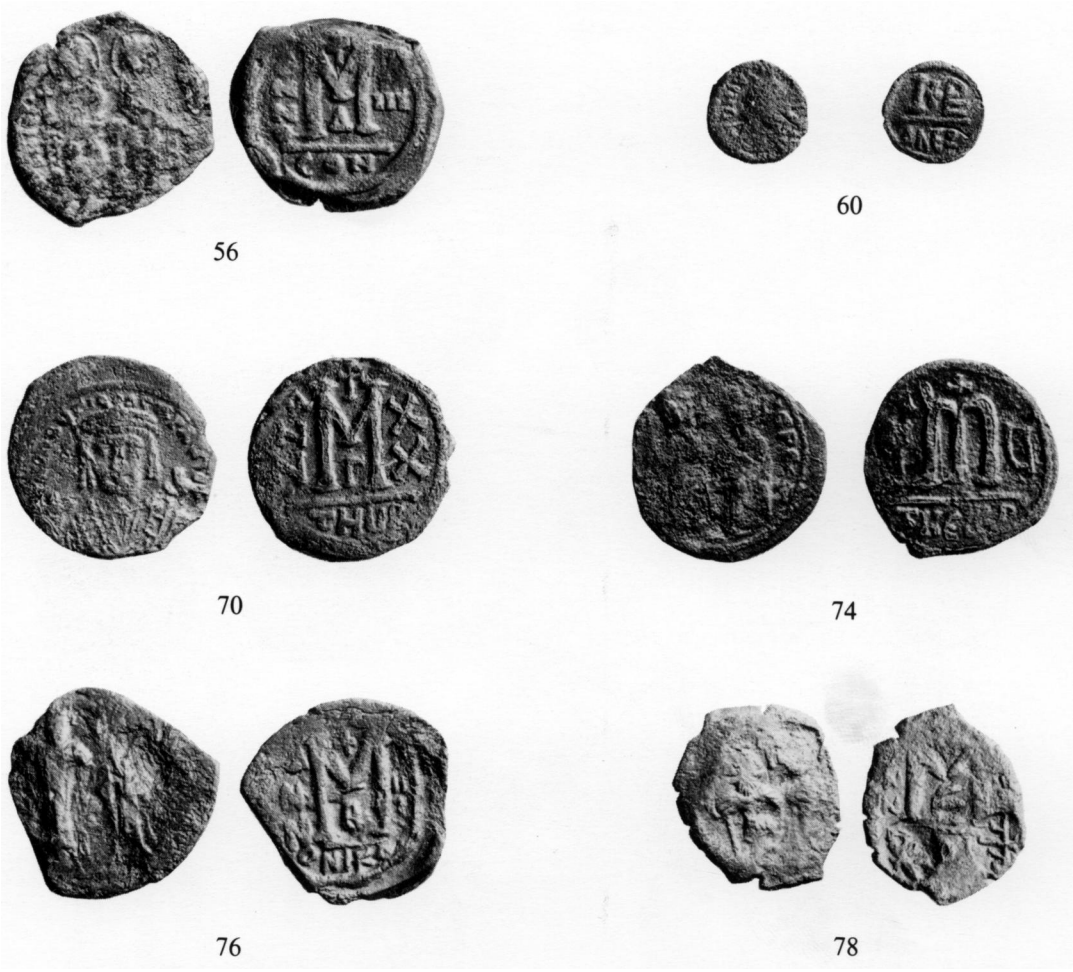
11. The following abbreviations of bibliography appear among Mr. Berman's identifications:
Lavoix: H. Lavoix, *Catalogue des Monnaies Musulmanes de la Bibliothèque Nationale*, II (Paris, 1887)
NNM 118: *Numismatic Notes and Monographs*, *American Numismatic Society* 118 (New York, 1950)
Walker: J. Walker, *A Catalogue of the Muhammadan Coins in the British Museum*, II (London, 1956).

CONSPECTUS OF THE COINS

MINT / MINT AUTHORITY	MINT UNCLEAR	TYRE	JERUSALEM	ASCALON	CAESAREA	ALEXANDRIA	ANTIOCH	ROME	LYONS?	THESSALONICA	CONSTANTINOPLE	NICOMEDIA	CYZICUS	CHERSON?	HERACLEA	RAMLE	DAMASCUS	TOTAL
ANTIOCHUS III THE GREAT	1																	1
DEMETRIUS II NICATOR	1	1																2
HEROD THE GREAT	1																	1
AMBIBULUS	1																	1
PONTIUS PILATUS	1																	1
ANTONINUS FELIX	1																	1
JEWISH WAR AGAINST ROME			1															1
RABBEL II	1																	1
AUTONOMOUS CITY COINS				1														1
NERO				1	1													2
FIRST CENTURY C.E. CITY						1												1
TRAJAN OR HADRIAN						1												1
MARCUS AURELIUS					1													1
ELAGABALUS			1															1
THIRD CENTURY C.E. CITY	3				2													5
MAXIMIAN HERACLIUS						1							1					2
CONSTANTINE I	2					1	1		1		1							6
FAUSTA															1			1
CONSTANTINE II	1							1			1							3
CONSTANTIUS II	1						1								1			3
JULIAN AUGUSTUS							1											1
THEODOSIUS I OR ARCADIUS										1								1
VALENTINIAN II?	1																	1
HONORIUS AND THEODOSIUS II	1																	1
PULCHERIA								1										1
LATE ROMAN-UNCERTAIN	3																	3
ANASTASIUS I											2							2
JUSTIN I											1							1
JUSTINIAN I	1						3				3		1					8
JUSTIN II							3					1						4
JUSTIN I-JUSTIN II						3												3
MAURICE							4				3	1	1					9
PHOCAS							2				1							3
HERACLIUS	2					1				1	7	1						12
PHOCAS, HERACLIUS OR CHOSROES						7												7
SIXTH CENTURY C.E.	3										1							4
FIRST HALF SEVENTH CENTURY	3													1				4
BYZANTINE MINIMAS	149																	149
BYZANTINE-ARAB																1		1
OMAYYID																1		1
ABBASID	2															1		3
FATIMID	1																	1
AYYUBID																	1	1
RULER UNCLEAR	2																	2
TOTAL	182	1	2	2	4	15	15	2	1	2	20	3	3	1	2	3	1	259



Pl. I. Selected Coins from the Excavation Area.

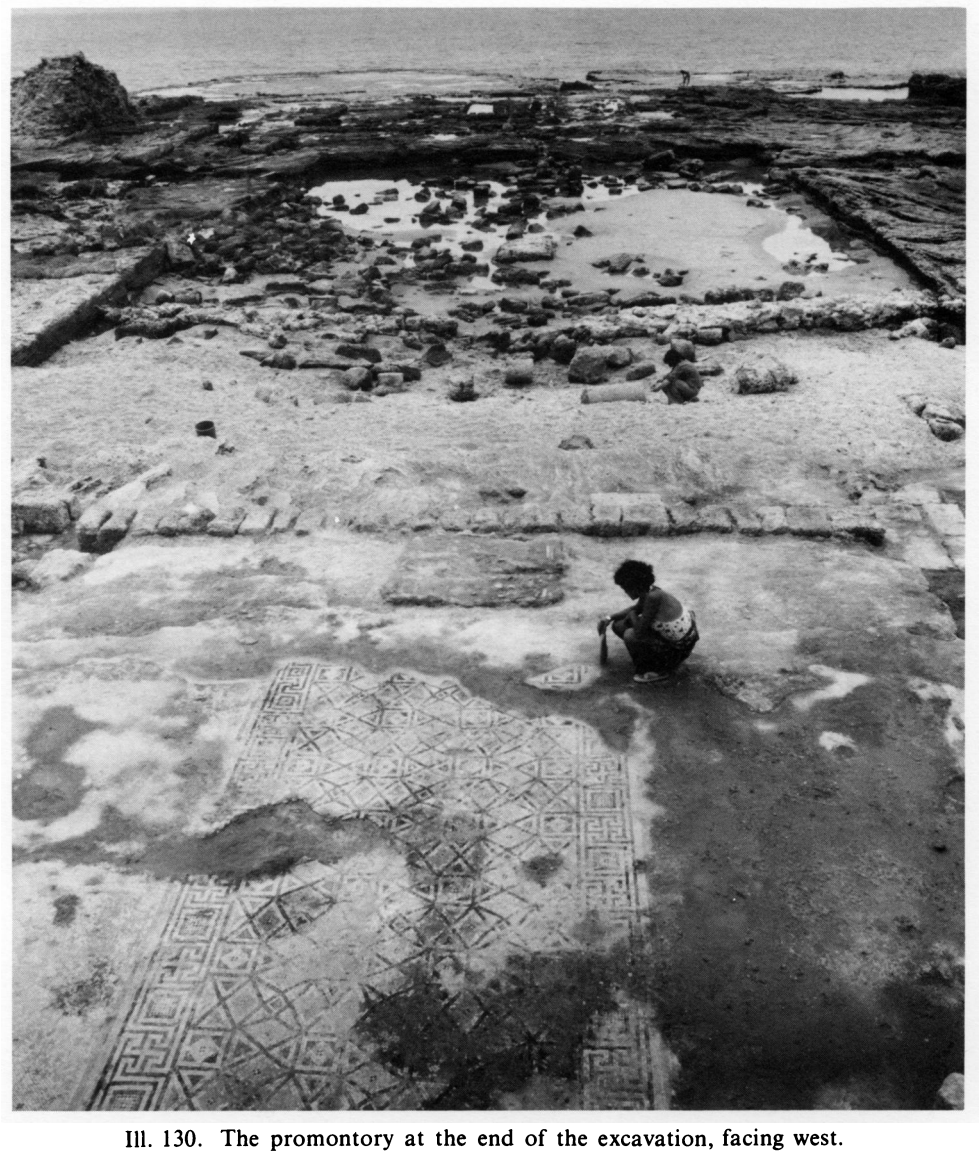


Pl. II. Selected Coins from the Excavation Area.

CHAPTER FIVE

THE PROMONTORY PALACE
A. Description and Stratigraphy

E. Netzer



Ill. 130. The promontory at the end of the excavation, facing west.

During a two-week period in April 1976 we made several exploratory probes on the promontory west of the theater.* These were the first archaeological excavations in this area, although it had previously been explored and surveyed.[1] On top of this rocky promontory, which is inundated by the sea at high tide, the foundations of various ancient walls can be seen, some of which are cut into bedrock. The most prominent among these remains is an ancient pool cut into the bedrock in the center of this stony shelf (Plan 15; Ills. 130 and 131). Prior to excavation, the seemingly unified plan of these walls and structures had particularly impressed us. The eastern section, which was the least eroded by the sea, was the only area where a controlled dig could feasibly take place. This area lies below the cliff which runs along the seashore (Ill. 132). We shall first describe the structures that were excavated and then add some details about the other visible remains.

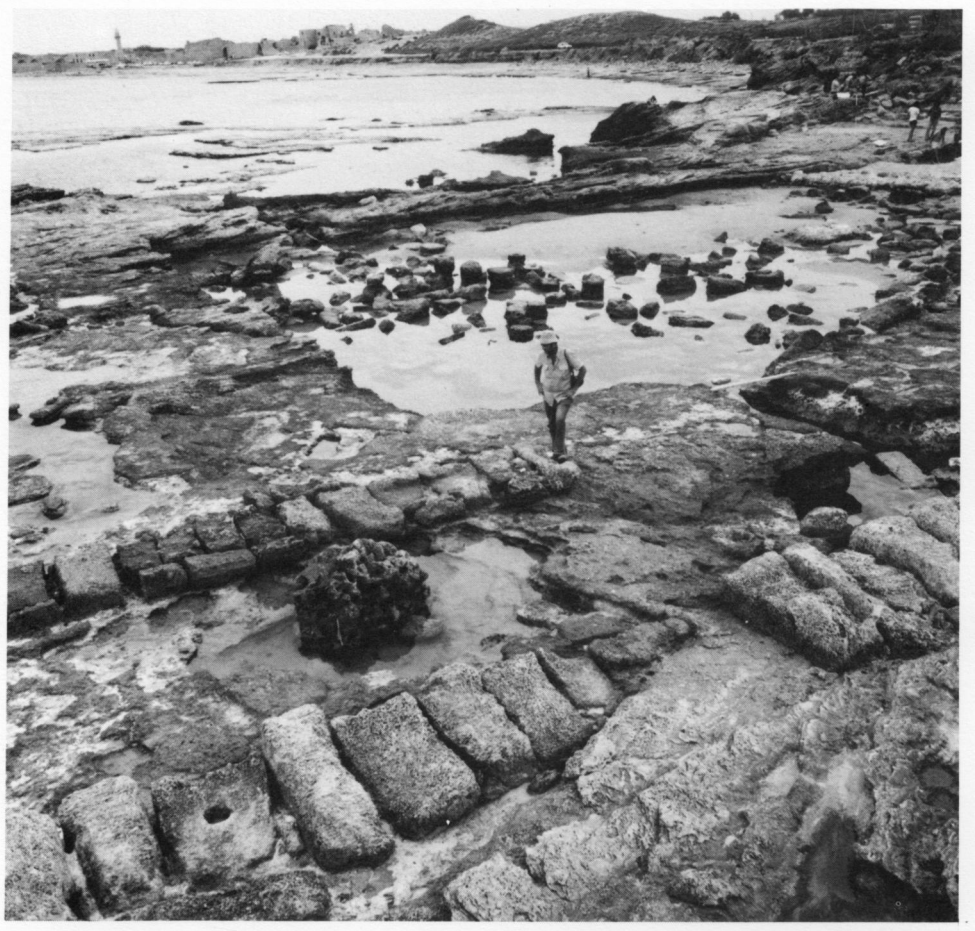
During the excavation, a series of four rooms running on a north-south axis was partially exposed (P33, P27, P1, and P15; Plan 16; Ill. 132). An additional room (P8) to the south of this row can be conjectured from the visible cuts in the bedrock, while a sixth room (P18), to the east of room P33 and not part of the same row, remains unexcavated. Three of these rooms (P27, P1 and P15) form one architectural unit, in which the middle room (P1) is much larger than the two identical rooms flanking it. The central axis of this triple unit is the same as the central longitudinal axis of the pool.

Room P1

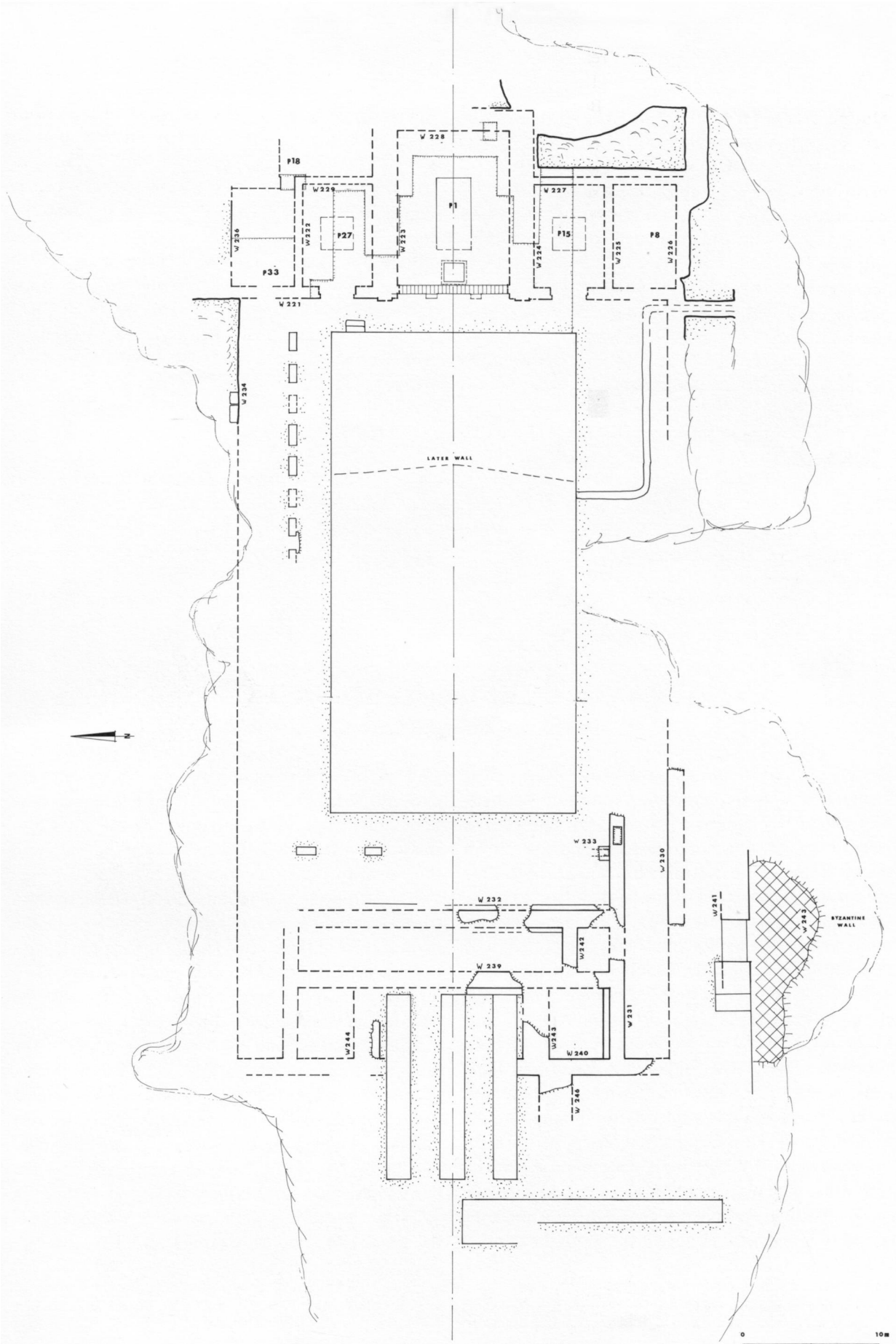
We exposed most of room P1 except for a 1.5 m.-wide balk left standing near the eastern wall W228 (Ill. 134). This main room, which measures 11.2 x 8.2 m., not only shared a common axis with the pool but was

* The area was supervised by Z. Ma'oz.

1. A. Flinder, "A Piscina at Caesarea–A Preliminary Survey," *IEJ* 26 (1976), 77-80.



Ill. 131. The center of the promontory, facing northeast. Note the pool carved into bedrock and built walls around.



Plan 15. A general plan of the promontory palace.

Ill. 132. The excavated area east of the pool, facing south.

entirely open to it. The row of ashlars (60 cm. wide) forming the western boundary of this room was built in a completely different manner than the western walls of the two adjacent rooms, which are nearly on the same line as the central one (Ills. 132, 133). This indicates that these ashlars probably served as a stylobate and not as a wall. A 40 x 75 cm. carved ashlar projection from this line of ashlars, 1.6 m. north of the central axis, could tentatively indicate the placement of one of a pair of portico columns. The northern and the southern walls of this room (W223 and W224, respectively) were almost completely robbed, although some of the foundation stones and remnants of the wall's white lime plaster were preserved *in situ*. These two walls, probably also originally built of ashlars, were exceptionally wide (both 1.8 m.).[2] The eastern wall (W228), built of ashlars and covered with white lime plaster, which was reached only in a small sounding, was narrow (*c.* 1.0-1.2 m.) and preserved to a height of about 30 cm. Both the eastern wall and the eastern section of the southern wall were cut into bedrock. A cavity, whose function was apparently to prevent penetration of sea water into the walls, was likely left here between the walls and the cut bedrock, as in room P15.

The well-preserved mosaic floor, whose western edge alone had been damaged by erosion,[3] was the main feature of this room. The floor had been laid on two separate layers of bedding; the lower one was a mixture of *kurkar* and lime spread directly onto the bedrock, and the upper, about 12 cm. thick, was a mixture of *kurkar* and red soil. In the center of the floor was a decorated "carpet," 5.2 x 2.5 m., with a geometric design basically imitating *opus sectile* floors (Ill. 135). The mosaic was bordered by two parallel colored strips, the outer one red and the inner one black (Ill. 136). Between the carpet and the border lines were small crosses laid in a grid (Ill. 135).

In the west of this room, near the stylobate, were the remains of a pool measuring 1.3 x 1.3 m. (Ills. 130,

2. The relative thickness of these side walls was a result either of their height or because they may have supported a barrel-vaulted ceiling, and/or because of niches which could have been integrated into these walls.

3. See Flinder (above, n. 1), 79-80, Pl. 17C, D. When we first visited the site in October 1975 the mosaic floor was covered by sand. A detailed description and synthesis of this mosaic floor will be published separately.

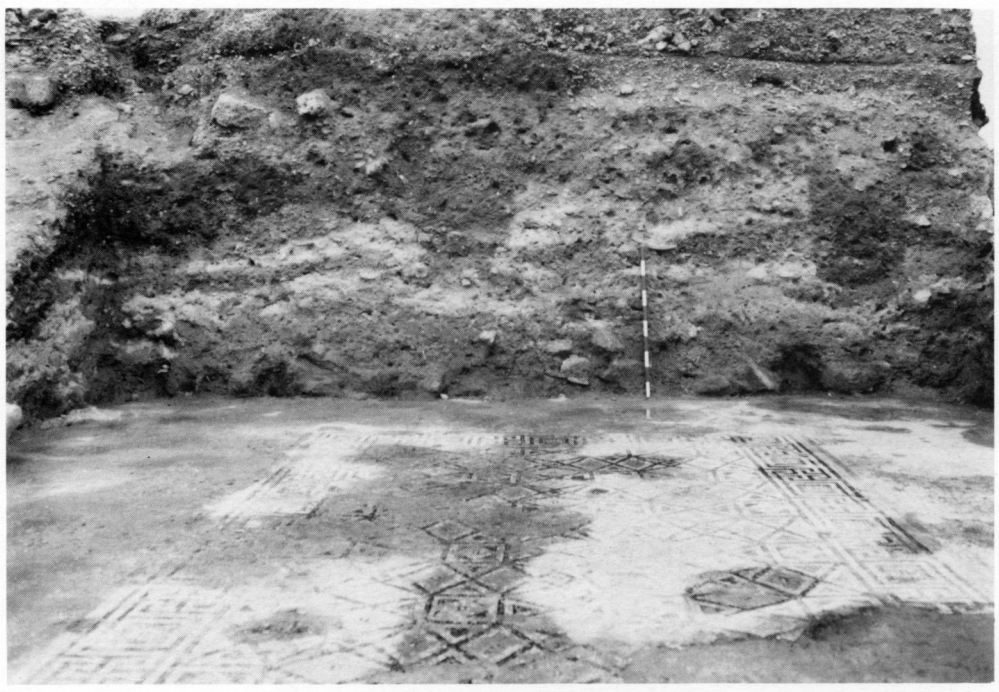
Ill. 133. Foundations of a stylobate west of room P1 with the remains of a small pool to its left, facing south.

133), which had perhaps functioned as a decorative fish pond in antiquity. It had originally been faced with marble slabs, some of which remain on the sides and which would have protruded above the floor level. The robbed floor of this pool lay about 15 cm. lower than the mosaic floor. Although this mosaic was missing due to erosion in the western area of the room where the pool stands, the pool was well integrated into its bedding and they were probably built together.

The eastern part of the room, which was not disturbed by the sea, was covered with a layer of earth 2.5-3.4 m. thick. The lower layer covering the mosaic floor was 70-80 cm. thick, and consisted of brown earth with some ashlar stones (some of which had traces of plaster fragments of fresco) and a large quantity of pottery, mostly amphoras and storage jar fragments. The next layer, also 70-80 cm. thick, was divided into alternate layers of sand, light brown earth, and *kurkar* with pockets of shells. The layers were laid in a slight angle, poured from south to north. A number of crude, and probably recent, graves had been dug into this layer. A 2 m. thick homogeneous layer of earth, probably the result of the clearing of the nearby theater, lay on top (Ill. 134).

Room P15

Only the northern half of this room (7.5 x 5.1 m.) was excavated (Ill. 137). The room was probably entered through the western wall (W221), of which the ashlar foundation alone is preserved. A rectangular groove in the foundation stone may indicate the place of a door socket on the northern side of the door. The northern wall (W224) was almost completely robbed, as in room P1, while the southern wall (W225) has not



Ill. 134. The section left above room P1, looking east.

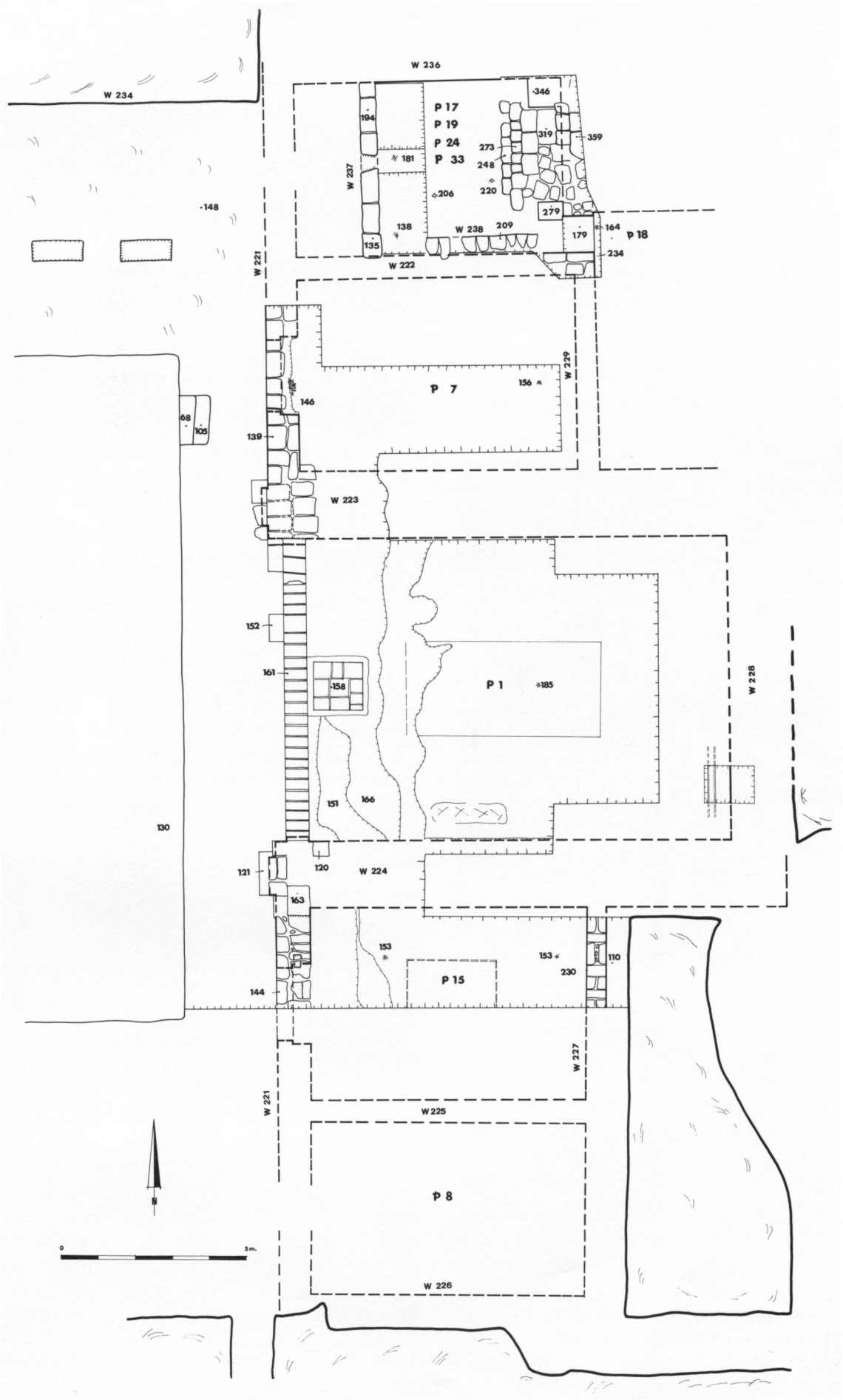
Ill. 135. The main panel of room P1's mosaic floor, facing east.

yet been exposed.[4] The eastern wall (W227), only 55 cm. wide, was built of small ashlars laid in header and stretcher fashion (Ill. 138). Two layers of good quality white lime plaster were preserved on the inner face of the wall. A 1.2 m. wide cavity beyond the eastern edge of the room had been cut into the bedrock. This cavity between wall W227 and the scarp in the bedrock was clearly deliberate — probably a precaution against the penetration of sea water in the building. A similar situation likely existed in the eastern edge of room P1 (Wall W228) and the eastern section of its southern wall (W224), which were also cut into bedrock.

4. The location of this wall is assumed on the basis of the symmetry between rooms P15 and P27.

Room P15 had a mosaic floor which, unlike that in room P1, was found in a poor state of preservation. The floor is basically undecorated, though it had a central panel without internal decoration (2.5 x 2.5 m.) surrounded by two black lines. The room itself was bordered on all sides by two black lines.

Room P15 was covered by an accumulation only 30 cm. thick, but even this was disturbed by later pits. In most of the undisturbed areas the room was covered by a 5 cm. thick layer of muddy ash — an indication of fire. Above the ash layer was a layer of red-orange sandy material, perhaps from the fallen ceilings. A destruction layer which included ashlar



Plan 16. A detailed plan of the excavated area in the promontory palace.

and plaster fragments formed the uppermost layer in the accumulation.

Room P27

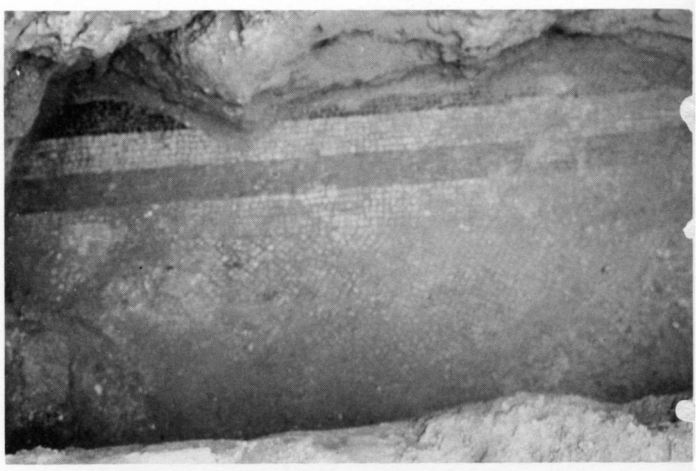
Only the southern part this room (7.5 x 5.1 m.) was excavated (Ill. 139). As in room P15, we exposed the foundation of the western wall (W221) and discovered here an indication of a central door.[5] The southern wall (W223) was chiefly robbed, but its exact line could be determined by the remains of white lime plaster found *in situ* about 2 m. from its western end. We did not reach the eastern wall but we assume that

Ill. 137. The excavated part of room P15, facing east. Note the cut in the bedrock and wall W227 built in front.

it was symmetrical with the eastern one of room P15.[6] The northern wall (W222) was found while excavating the adjacent room (P33).

A mosaic floor, identical to that in room P15 and also in a poor state of preservation, was found here. The poor condition of both these floors is probably a direct result of an intensive fire. As in room P15, here also were remains of a sandy red-orange layer. Many scattered mosaic tesserae were found as well, perhaps from a second storey.

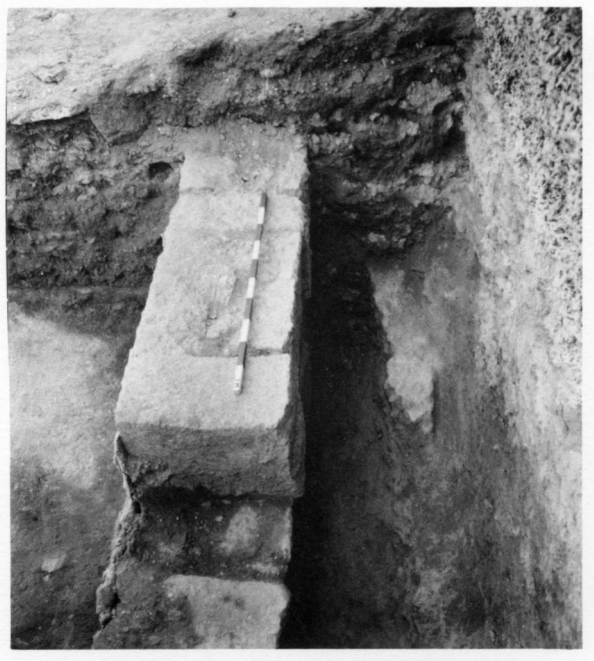
5. As we can learn from the carvings in the foundation layer. The penetration of the mosaic into the wall likely indicates the existence of the door (see Plan 16 and Ill. 139).
6. The assumed eastern wall here is also on the same line with the door exposed in the southeastern corner of room P33—leading into the unexcavated room P18 (see below).



Ill. 136. A small section of two colored border lines beside the eastern wall (W228), facing west.

Room P33

In contrast to the rooms described above, we exposed in room P33 (probably 6.5 x 4.6 m.) a number of floors and later structures. Clear evidence of a northern wall (W236) and a southern wall (W222) was found, each with remains of lime plaster *in situ*. The western wall had been robbed. We were able to determine, however, by following the cuts in the bedrock, that it was a direct continuation of wall W221. The eastern wall has not yet been excavated, but a door exposed in the southeastern corner of the room, leading to the unexcavated room P18, is indicative of its location (Ill. 142).



Ill. 138. Wall W227 adjacent to the cut into the bedrock, facing north.

Ill. 139. The excavated part of room P27, facing north-east. In the background the late flight of steps above room P33 is visible.

The lowest floor of room P33 was carved into the bedrock at +1.38 and was reached in only a relatively small section (Ill. 140). The rock here had been leveled, but the rough finish of the carving led us to question whether this surface actually served as a floor, or if the earliest floor had rather been laid above it. Locus P33 is an accumulation of layers of earth mixed with lime and ash — bedding for floor P24 at +1.61 (Ill. 140). An ash layer (*c.* 6 cm. thick) covering the bedrock itself seemed to be part of this deliberate fill. In its northern edge this floor (P24) and its bedding met wall W236, the northern boundary of room P33. Most significantly, white plaster of this wall begins at the level of floor P24, providing another reason to doubt the existence of the earliest floor at +1.38. It is possible, however, that the original floor was replaced by this fill, for floor P24 is of poor quality compared to the floors in the other rooms. We exposed floor P19 of lime plaster laid over earthen and chalk layers at +1.81, 18 cm. above floor P24. The final floor P17, at +2.06, sloped slightly upwards to the east and was laid over layers of earth and sand. Wall W238, adjacent to wall W222, and Wall W237, 2 m. east of the room's western wall, belong to this floor (Ill. 141). A roughly built flight of six steps, about 2.5 m. wide, was laid over floor P17 at a later stage (Ill. 141). The steps were built between two pilasters. The northern one, adjacent to wall W236, predates the stairs but is a later addition to the wall. The southern pilaster is an extension of the northern side of the door leading into room P18. No floor levels associated with these steps have remained. West of the steps, on floor P17 (particularly on its southern part), we exposed remains of fire and a destruction layer — similar to the ones exposed on the mosaic floors of rooms P27 and P15. The many changes which occurred in room P33, culminating in the staircase and its location in relation to the local topography, lead us to believe that this room probably always served as the entrance to the building.

Ill. 140. A sounding in room P33, facing east. At the left is floor P33 at +1.61 and the levelled bedrock at +1.38 at the right.

Ill. 141. Upper floor of room P33 facing east, with the late flight of steps in the background.

Ill. 142. Doorway between rooms P33 and P18, facing northeast.

Ill. 144. The series of depressions cut into the bedrock north of the large pool, facing west. →

Room P18

The doorway exposed in the southeastern corner of room P33 leads into room P18 which remains unexcavated (Ill. 142). This doorway, which was blocked at a later stage, is situated in the exact northwestern corner of the unexcavated room. Only a few centimeters of a solid lime plaster floor were uncovered beyond the doorway at +1.63.

Ill. 143. A sounding at the northeastern corner of the large pool, facing east.

THE CENTRAL POOL AND ITS SURROUNDINGS

The most prominent feature on the promontory is the large ancient pool, measuring 35 x 18 m. (Plan 17). The constant inundation of sea water into this pool and the resulting accumulation of sand and fallen stones prevented its thorough study. A small sounding in the northeastern corner (Ill. 143) exposed the remains of gray ash and lime plaster on the walls — typical of water installations of the 1st century B.C.E. We assume that such a plaster originally covered the whole pool. Close to this corner we also observed the remains of three steps but doubt that they belong to the original pool.[7] The deepest point we were able to reach was about 1 m. below the present sea-level.[8]

The assumed original level surrounding the pool, following the remains to the east, is about 1.4 m. above sea-level. Therefore, the minimum original depth of the pool was 2.4 m., although it was likely even deeper initially. At some undetermined stage the pool was divided, and probably shortened, by wall W247, 10-11 m. west of the eastern wall.[9] This wall was built of small stones reinforced by gray mortar.

Significant to the understanding of the building are

7. Steps leading into pools — at least in the Herodian period — are generally situated in exact corners and do not penetrate the sidewalks around the pool, as is the case here. These steps may be a later modification.
8. The pool is partially covered by sand and debris composed of building blocks. The constant inundation of sea water makes it extremely difficult to determine its exact floor level.
9. The later wall is angled slightly, although it, too, is symmetrical, coming to a point exactly midway across the width of the pool.

the remains that surround and relate to the pool. Parallel to the pool the bedrock is carved over a length of nearly 10 m., at a distance of 6.8 m. from its northern edge near the northeastern corner. At one point, traces of white lime plaster could be discerned on this scarp, which is integrated into W234 as indicated by two building stones at its western end — remnants of wall W234 that once stood here. Parallel to the scarp, 2.6 m. to the north of the pool, there is a line of eight depressions carved into the bedrock at 90 cm. intervals, each measuring 130 x 60 cm. (Ill. 144).

West of the pool, again 6.8 m. from its edge, are the remains of a 2 m. thick wall (W232). Signs of three depressions, similar to the ones north of the pool, lie 2.6 m. from the pool. Two of the depressions are carved in the rock close to the northwestern corner of the pool, and the edge of the third depression is carved into the small preserved section of wall W233, just west of the southwestern corner.

A similar situation exists south of the pool. The remains of wall W230 lie 6.8 m. from the pool.[10] Remains of wall W231 (1.1 m. wide),with one depression carved into the top of the stones of the wall, lie 2.4 m. south of the pool, near its southwestern corner (Ill. 145).

No section of the original floor was found surrounding the pool, but from the leveling of the rock at about +1.30 and from the floor levels of rooms P15 and P26 we can estimate an original floor level at about +1.40. All these facts point to a regular and even floor surrounding the pool.

We assume that walls W234 in the north, W232 in the west, and W230 in the south are remains of the walls that once surrounded the pool. The rectangular depressions may attest to columns that once formed a peristyle around the pool. Walls W231 and W233 would, in that case, constitute the foundations of this stylobate. In any case, if we restore colonnades with eighteen even intercolumnar spaces north and south of the pool, and three to the west, all the depressions mentioned above would be well-integrated into that pattern (Plans 15 and 17). We assume that additional depressions existed at all, or most, of the other intercolumnar spaces. The original function of these depressions is unclear. They may have served as flower boxes. No colonnade, however, existed to the east, but a similar open space, 2.4 m. wide, existed here, resembling the interval between the pool and the colonnades on the other three sides of the pool.

Ill. 145. Wall W231 with a depression cut into it, facing southwest.

Structures to the West of the Pool

Additional walls (W239, W242, W243, W240, W246 and W244) may indicate the divisions of this area into rooms and corridors. These walls are of various widths, ranging between 1.10 m. and 2.40 m. Only their lowest course, built of relatively large ashlar stones, is preserved. This may have constituted the foundation course, whereas the walls themselves could have been narrower.

A row of three parallel rectangular depressions, located 13-26 m. west of the pool and measuring 13.5 x 1.7 x 8 m., are noteworthy. The central depression is aligned with the central axis of the pool. They are undoubtedly part of the original construction and, although today they are usually full of sea water, there is no reason to believe that they were necessarily so in antiquity. Their function remains obscure. Southwest of these three pools and perpendicular to them is a fourth, 19 m. long, which is not related to the axis of the building.

The western extremity of the promontory is a roughly shaped semicircle. We do not know if this is natural or a result of building activity.[11] In any case, little remains of the western extremity of this building. Southwest of the pool the remains of an east-west

10. Although wall W230 is preserved only beside the southwestern corner of the pool, the scarp in the bedrock, west of room P8, correlates with the continuation of the line of this wall.

11. One may make a comparison, for example, with the rounded terrace in the upper level of the northern palace at Masada; see Y. Yadin, *Masada, Herod's Fortress and the Zealots' Last Stand* (New York, 1966), pp. 41-47.

wall (W241) can be observed partially below the late wall W245. Here there are signs of what might be a 3 m.-wide threshold, which could have offered access to the sea. This tentative threshold is opposite what appears to be a corridor between walls W239 and W232.

There are very few remains north and south of the pool besides those already mentioned. Most that exist seem to be later and will be described below. We have no knowledge of the boundaries of the building to the north or south; perhaps only an underwater survey could clarify them.

Note should be made of the heights of the outcrops of bedrock after the quarrying of the scarps into which the building was constructed had been completed. These high outcrops are particularly noticeable to the southeast and to the north of the pool, and might indicate that there were rooms on a higher level, possibly on the level of a second storey.

The eastern boundary of the building is also uncertain. Although the row of rooms which we exposed might represent the eastern end, the building could have continued to the east on the cliffs above.

In viewing the overall picture of the remains (the pool, the cuts in the bedrock, the remains of walls, and the rooms to the east), their interrelationship, and their single grid system with a central axis, we have no doubt that they were planned and executed simultaneously. The general symmetry, the overall plan around the pool, and the precision with which the plan was executed also point to simultaneous construction. If any structures existed prior to this building, they were probably obliterated in the course of its construction.

Elements Later than the Promontory Palace

We have already mentioned the later stages in room P33 and the wall which subdivided the large pool. Remains of a substantial wall (W245) southwest of the pool (Ill. 130) probably belong to section of a Byzantine fortification.[12]

South and north of the pool is a series of channels, small pools, and sluices.[13] In contrast to the precision of plan and execution described above, the construction of these channels is irregular. Hence, they seem to be later additions. When these channels were cut, the pool was fed with sea water and may have then served as a fish pond, as Flinder has suggested. However, the total depth of the pool[14] and the traces of plaster in the northeastern corner indicate that the pool probably originally held fresh water. Another channel to the southeast of the pool, built with considerable precision following the lines of the original building and cut through the relatively high rock just beside room P8 (Plan 15), may have been the means of access to the fresh water. Only further exploration can clarify the relationship between this channel and the pool.

B. Pottery*[15]

R. Bar-Nathan, M. Adato

THE HERODIAN PERIOD

The fill (locus P33) below the earliest floor (P24) in room P33 contained few and fragmentary sherds. However, it is possible to identify them generally as fragments of vessels of Herodian date (1-70 C.E.). Some belong to Eastern Terra Sigillata vessels. Three fragments are significant:

1. A rim fragment of a bag-shaped jar with a thickened rim, straight neck, and ridge at the base of the neck (Fig. 1:1). Parallels have been found at 1st century C.E. sites.[16]

2. A rim fragment of a closed cooking pot of reddish brown ware, with a thin and square rim, straight neck, and thin walls (Fig. 1:2). It has no known exact parallels.[17]

12. Probably connected with the fortress built on top of the Roman theater; see A. Frova, *Scavi di Caesarea Maritima* (Milano, 1965), pp. 159-165.
13. And see Flinder's western channel at point A and northern channel at point B; Flinder (above, n. 1), 79.
14. See n. 8 above.
* Figures for this section appear on pp. 170-175.
15. We are grateful to N. Amit who carried out the preliminary research on the palace and whose parallels are included in this report.
16. L.Y. Rahmani, "Jason's Tomb," *IEJ* 17 (1967), Fig. 17:1-4; R. de Vaux, "Fouille au Khirbet Qumrân," *RB* 60 (1953), Fig. 2:1 (= Pl. VIb:97); J. Kaplan, *Two Groups of Pottery of the First Century A.D. from Jaffa and its Vicinity* (Tel-Aviv, 1964), Fig. 2:5; B. Mazar, T. Dothan, and I. Dunayevsky, "En Gedi: The First and Second Seasons of Excavations 1961-1962," *'Atiqot* 5 (1966), Fig. 27:2, 3; Yadin (above, n. 11), p. 94.
17. However a similar cooking pot rim is known to one of the present writers from a pottery assemblage found at Lower Herodium in the area of the stores, and is dated to the first half of the 1st century C.E. Another similar fragment, as yet also unpublished, was found at Aroer. We wish to thank M. Hirshkovitz for this information.

3. An upper body fragment of a Roman lamp of well-fired grayish ware (Fig. 1:3).

THE ROMAN PERIOD

a. THE FILL

A homogeneous pottery assemblage dated to the 2nd and 3rd centuries C.E. was found in a fill of brown earth, 50-80 cm. thick (P6, P9, P30) covering the mosaic floor in the central room P1. (For a discussion of the deposition date, see below). No complete vessels were found. Most of the fragments which were discovered are rim sherds of amphoras and storage jars. The date of the assemblage is based mainly on the amphoras (Fig. 1:4-17), a substantial number of which are North African imports, and on the African Red Slip vessels (Fig. 2:19, 20), all of which date to the end of the 2nd and 3rd centuries. Several other finds indicate a 2nd-3rd century date. The Roman discus lamp (Fig. 2:22) found in this fill is dated to the end of the 1st-2nd century. A pottery tile bearing a stamp of the Roman Tenth Legion Fretensis was also found in the fill, and appears to be of late 2nd century date.

Amphoras

North African Amphora

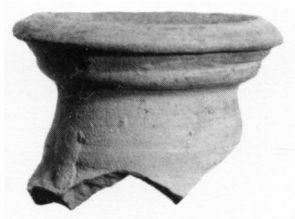
Three examples of one type were found (Fig. 1:4; Ills. 146, 147).

The ware is light orange and contains fine grits which include mica. This type, called the "Africano piccolo,"[18] has a thickened and everted rim which is sometimes ribbed, a cylindrical neck, and two handles attached to the neck below the rim. They were produced on the eastern coast of North Africa[19] and are dated from the second half of the 2nd century until the end of the first half of the 3rd century. The earliest appearance of this type is in an Algerian tomb of the second half of the 2nd century.[20]

An amphora fragment of red-brown ware containing grits has a thickened, stepped, and everted rim and a wide cylindrical neck with a ridge at the base of the neck (Fig. 1:5; Ill. 148). On the interior of the rim and neck are distinctive finger impressions. This type is identified with the Tripolitanian amphora, which was produced in Tripoli and flourished mainly during the 2nd century and into the 3rd and 4th centuries.[21]

Ill. 146. Fragment of North African amphora.

Ill. 147. Fragment of North African amphora.



Ill. 148. Fragment of North African amphora.

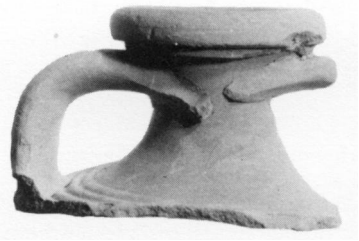
North African-Gallic Amphoras

Six examples of this type were found (Fig. 1:6, 10, 11, 12; Ills. 149, 150, 151), consisting of brown-orange ware with a light brown exterior coat and dark and light grits. The amphora usually has a bead-shaped rim which is triangular in section (Fig. 1:10;

18. G. Kapitän, "Le Anfore del Relitto Romano di Capo Ognina (Siracusa)," *Recherches sur les Amphores Romaines, Collection de l'école Française de Rome* 10 (1972), 245.
19. C. Panella, "Annotazioni in Margine alle Stratigrafie delle Terme Ostiensi del Nuotatore," *Recherches sur les Amphores Romaines, Collection de l'école Française de Rome* 10 (1972), 88.
20. *Ibid.*, 86-88, Figs. 34-35. At Ostia, only fragments of the type appear during the second half of the second century. The mid-3rd century stratum at Ostia contains many examples of this type, whereas the type is rare in the 4th century, and only one example of it is dated to the 5th century; see A. Carandini and C. Panella, *Ostia III, parte seconda, Studi Miscellanei* 21 (Rome, 1973), Pls. XXII:109; XXXVI:262; G. Kapitän (above, n. 18), 245, Fig. 2; C. Panella, *Le Terme del Nuotatore, Scavo dell' ambiente IV, XIV: Anfore. Ostia I, Studi Miscellanei* 13 (Rome, 1968), Pl. XXXVI:526-529.
21. *Ibid.*, Pl. XXIII:517-520; Carandini and Panella (above, n. 20), pp. 559, 562-563, Pls. XXIX:190, XXXVI:263; Panella (above, n. 19), 97, Figs. 59, 60.

Ill. 149.

Ill. 150



Fragments of North African-Gallic amphoras. Ill. 151

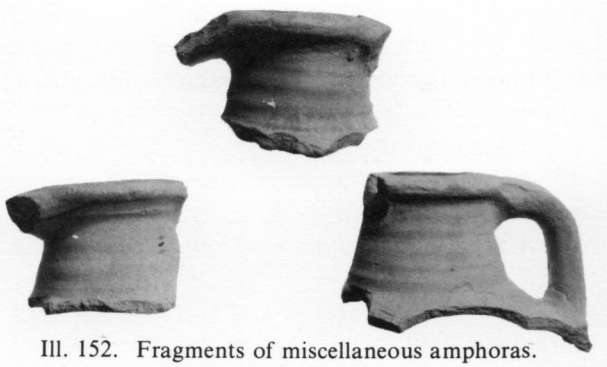
Ill. 149). There are two variant rims: one is thick and round (Fig. 1:11; Ill. 150), and the other is a stepped rim cut in its lower part (Fig. 1:6; Ill. 151). The neck is short and cylindrical. Two handles are attached either to the neck under the rim (Fig. 1:6, 11) or to the middle of the neck (Fig. 1:10). An omphalos base belongs to this type (Fig. 1:12). This amphora type was apparently produced both in Gaul and in North Africa, and is commonly found in the western Mediterranean. It first appeared during the 1st century, was most popular during the 2nd century, and continued into the 3rd century.[22]

Aegean Amphoras

Four fragments of this type were found (Fig. 1:7, 8, 9). The type, which is relatively small, is of orange ware and has a beige coat. It has a rim separated from the neck by two ridges, long and curving handles extending upwards from the neck, and an omphalos base. The type flourished during the 3rd and 4th centuries.[23] At the Athenian Agora, one 5th century example was found.[24] The type was first imported to Ostia during the second half of the 2nd century, was most common there during the 3rd century, and continued into the 4th century. It is commonly found throughout the Mediterranean, and appears to have been produced on the coast of Asia Minor in the eastern Aegean.[25] At the Caesarea hippodrome it appears in strata H1b-H2b.[26] It is significant that the type appears at the palace in a 2nd century assemblage.

Miscellaneous Amphoras

1. An amphora fragment of beige ware, with a bead rim, narrow and cylindrical neck, and handles attached to the neck (Fig. 1:13).
2. Three fragments of one amphora were found (Fig. 1:14; Ill. 152). This type is characterized by its light brown ware and coat, and fairly small grits. It has a bead rim, wide and convex neck, and rounded handles extending from the rim.
3. An amphora fragment of beige ware, having a rim which is triangular in section and handles attached to the neck below the rim (Fig. 1:15).
4. An amphora fragment of dark brown ware, with a collared rim (Fig. 1:16).



Ill. 152. Fragments of miscellaneous amphoras.

5. Two fragments of an amphora type of orange-brown ware, having a thickened rim, and thick, flattened handles drawn from the rim to the shoulder (Fig. 1:17; Ill. 153).

Ill. 153. Fragment of miscellaneous amphora.

22. Panella (*Anfore*, above, n. 20), pp. 106-108, Pls. XXXVII-535-538; XXXVIII-539-540; Carandini and Panella (above, n. 20), pp. 538-540, Pls. XXIII:121, XXIV:133, XXVI:151; XXIX:193; XXXV:264; LIX:525; LX:526-528.
23. Panella (*Anfore*, above, n. 20), p. 108, Pl. XXXIX:541; idem (above, n. 19), 92, Figs. 43-44.
24. H. Robinson, *The Athenian Agora, V: Pottery of the Roman Period* (Princeton, 1959), Pls. 15, 16, 28, 29, 31 (K113, L33, M237, M274, M303).
25. Panella (*Anfore*, above, n. 20), pp. 108-109, Pl. XXXIX:544-545; Carandini and Panella (above, n. 20), pp. 596-599, Pl. XXX:194.
26. J. Riley, "The Pottery from the First Session of Excavation in the Caesarea Hippodrome," *BASOR* 218 (1975), 25, 40, Type 8. Strata Hlb-H2b are mostly dated to the 3rd and 4th centuries.

Storage Jars

The most common jar type found in the palace is a bag-shaped jar with a long and straight neck, a ridge at the junction of the neck and shoulder, two loop handles on the shoulder, a ribbed body, and a rounded-flattened base (Fig. 2:7-9). There are three variants found in the palace. The first two have high necks, and the third a lower neck.

Variant A has a stepped or "double" everted and poorly executed rim (Fig. 2:1-3). The ridge barely protrudes and the shoulder is usually ribbed. The ware is usually brown-orange. One fragment differs from the others in its more metallic ware and sharp ridge (Fig. 2:2).

Variant B has a rounded and thickened rim (Fig. 2:4-6), which is sometimes concave on the interior. The ridge in this variant is also slight. The shoulder ribbing is not as distinctive as that of Variant A. The ware is usually brown-red, but sometimes gray.

Variant C has a folded and thickened rim, a slightly convex and shorter neck than Variants A and B, and a sharp, upturned ridge (Fig. 2:7-9). The ribbing on the shoulder is coarse. The brown-orange ware is coarse and sandy. Fig. 2:9 belongs to this variant but differs slightly in its very short neck.

This jar type corresponds to Riley's Amphora Type 1A from the Caesarea hippodrome, and which is dated from the end of the 1st until the 4th centuries.[27] It is a continuation of a 1st century type with minor, but significant changes. The palace examples exhibit a transition in this type from the earlier form to the 4th century form. The ridge is on the lower part of the neck in the earlier form, but is placed at the top of the shoulders on the 4th century form. The palace examples appear similar to the later form because the ridge is placed at the junction of the neck and shoulder, and the body is ridged. Variant C in particular, with its short neck, begins to resemble the Byzantine form, Riley's Amphora Type 1B.[28]

Small Jar

A small jar has a rounded rim, distinctive ribs on the neck, and thin walls (Fig. 2:10). The ware is red.

Pithos

A large, globular, handmade pithos was found in the fill of room P1 (Fig. 2:11). It is made of heavy, coarse, brown-orange clay with large grits. The surface is rough. Only the rim and one handle are preserved. The pithos has a thick triangular rim, and short neck. Characteristic of this type of pithos are two large loop handles usually attached to the upper part of the body, and a thumb impression at the junction of the lower part of the handle with the body. A similar pithos was found at Jaffa and is dated there to the 1st century C.E.[29] Pithoi of this type are also known at 1st century sites founded by Herod, such as Masada and Herodium.[30] The Caesarea pithos is of such size and weight that it was probably made near the spot of intended use and served as a standing installation. This, coupled with its proximity to a Herodian site, may indicate that it is of earlier date, and thus it may have belonged to the Herodian palace itself.

Cooking Ware

Relatively few examples of cooking ware were found in the fill, compared to amphoras and storage jars.

Closed Cooking Pots

Only rim sherds were found, including a pot fragment with a sharply beveled rim, short and straight neck, and ribbed body of orange-brown ware (Fig. 2:12). This pot continues the tradition of Herodian cooking pots with a triangular rim, but its neck is shorter and straighter — a feature typical of the 2nd century form. It resembles vessels from the Roman villa at Tulul Abu el-Alayiq (Jericho), dated to the end of the 1st century and beginning of the 2nd century;[31] Type A5 from Capernaum dates from 63 B.C.E.-450 C.E. (but which flourished during the Middle Roman period, 135-300 C.E.), and a type from Ḥorvat Ḥazon dates to the 3rd century.[32]

27. *Ibid.*, 26, Nos. 8, 9. Riley dated this form to the 2nd century and gives parallels from Capernaum.
28. *Ibid.*, 26-27.
29. Kaplan (above, n. 16), p. 7, Fig. 1:4, Pl. 2:1.
30. The Masada pithos, as yet unpublished, is presently exhibited at the Institute of Archaeology of the Hebrew University of Jerusalem. The pithos from Herodium, which will be published in the near future by one of the writers, was found in the Bar-Kochba tunnels, and probably fell there from the Herodian palace. The Masada pithos measures 0.90 m. high, with a rim diameter of 0.95 m. at the widest point of the body, and a base diameter of 0.25 m.
31. Tulul Abu el-Alayiq is the site of the Hasmonean and Herodian winter palaces. The Roman villa was built on top of the western wing of the Herodian third palace; to be published in the near future by one of the writers.
32. S. Loffreda, *Cafarnao II: La Ceramica* (Jerusalem, 1974), pp. 32-33; D. Bahat, "A Roof Tile of the Legio VI Ferrata and

A pot fragment with an everted rim and thin walls is of a brown-gray ware different from that of most cooking pots (Fig. 2:13). A similar pot was found in the Roman villa at Tulul Abu el-Alayiq.[33]

A pot fragment with a shelf rim has a loop handle extending from the rim, and is of gritty brown-red ware (Fig. 2:14).

Casseroles

Two types of casseroles were found. One is of fine brown ware with a small vertical loop handle extending from rim to body, a slightly curved wall, and flattened and slightly convex base (Fig. 2:16-18). Only three fragments were found, all of which have different rims. One is flattened and has incised lines (Fig. 2:16), and the other two are inverted (Fig. 2:17, 18). This casserole type, dated to the 2nd and 3rd centuries, resembles Type A12 from Capernaum, and also appears at Ḥorvat Ḥazon.[34]

The second type is of a coarser ware; it has a beveled rim and a twisted, angular horizontal handle (Fig. 2:15). This type was also found in a 2nd century assemblage from Mampsis.[35]

The first casserole type continues a 1st century form, while the second type first appears in the 2nd century and continues into the later period.

Krater

A rim fragment of a krater having a thickened rim and flaring wall (Fig. 2:23) was found. A similar vessel was found at Shiqmona and is dated there to the 2nd century.[36]

African Red Slip Ware

African Red Slip Ware is usually fairly coarse, gritty, and often contains lime particles. The fabric is orange-red and the vessels are covered with a thick slip. The centers of production of this ware were in Tunisia. The ware, which was produced from the 1st through the 7th centuries, is the most common Late Roman ware found in the Mediterranean.[37] The fill in room P1 contained two early examples. One, a bowl fragment with a vertical rim, outcurved wall, flat floor, and low foot (Fig. 2:19), is slightly carinated at the junction of the floor and wall on the outside. There is a groove below the interior rim and two grooves on the floor. The bowl which belongs to Hayes' Form 27 dated 160-220 C.E.,[38] is the standard bowl form at the beginning of the 3rd century.

A platter having an inverted rim, thick and curving walls, and a broad, flat base (Fig. 2:20) was found. A slight groove marks the interior junction of the floor and wall. The outside wall is rough, while the inside surface is burnished. The ware is coarse and gritty. The platter belongs to Hayes' Form 181 dated from the second half of the 2nd century to the first half of the 3rd century.[39]

Local Bowl

The bowl has a shelf rim and rounded body (Fig. 2:21). Its brown-pink ware is coarse and contains mica particles. The interior of the bowl is covered with a self-slip, whereas the outside surface is rough. The bowl shape resembles African Red Slip Ware Form 33, dated 200-250 C.E.[40] The ware is coarser than that of African Red Slip Ware, which may indicate local production of imitations of that ware.

Lamp

A fragment of the upper part of a Roman discus lamp has buff ware and red slip (Fig. 2:22; Ill. 154). It is badly eroded, however traces remain of an *ovolo* decoration surrounding the discus and of an animal (apparently a boar) in the center of the discus. Similar lamps are dated from the mid-1st to the early 2nd centuries C.E.[41]

Pottery Vessels from Ḥorvat Ḥazon," *IEJ* 24 (1974), 167, Fig. 4.

33. To be published in the near future by one of the writers.
34. S. Loffreda (above, n. 32), pp. 38-40; Bahat (above, n. 32), 163-169, Fig. 4. Fig. 2:18 resembles A13 at Capernaum, dated 300-400 C.E. and also a type at Beth She'arim; see N. Avigad, "Excavations at Beth She'arim, 1953, Preliminary Report," *IEJ* 4 (1954), 210, Fig. 3:9-11.
35. A. Negev and R. Sivan, "The Pottery of the Nabatean Necropolis at Mampsis," *Rei Cretariae Romanae Fautorum*, Acta XVII-XVIII (1977), 113-117, Fig. 8:57. See discussion on the Byzantine pottery from the palace for other variants of this type.
36. J. Elgavish, *Archaeological Excavations at Shikmona, The Pottery of the Roman Period* (Haifa, 1977), pp. 17-18, Fig. XI:87 (Hebrew).
37. J.W. Hayes, *Late Roman Pottery* (London, 1972), pp. 13-299.
38. *Ibid.*, pp. 49-51, Fig. 8. The bowl from Caesarea most closely resembles Fig. 8:11, a late development of this form, dated to the first half of the 3rd century.
39. *Ibid.*, pp. 200-202, Fig. 35.
40. *Ibid.*, pp. 55-56, Fig. 9. Two examples given by Hayes from Mainz and from Athens appear quite similar to this bowl in description of ware. It seems that this type of bowl may have been locally imitated in a number of places.
41. R. Rosenthal and R. Sivan, *Ancient Lamps in the Schloessinger Collection, Qedem* 8 (Jerusalem, 1978), pp. 31-42, Nos. 108, 115, 138, 145, 163, and 167.

Ill. 154. Fragment of a Roman discus lamp.

Tile with Stamp Impression

A fragment of a tile bearing a stamped impression of the Roman Tenth Legion Fretensis was discovered in the fill of the palace (Ill. 155).

The presence of Roman legions at Caesarea was confirmed previously by ten Latin inscriptions found in the Caesarea high-level aqueduct.[42] Half are attributed to the Tenth Legion, the others to the Second and Sixth Legions. All the inscriptions are dated to the reign of the emperor Hadrian in the first half of the 2nd century C.E. and refer either to the construction of the aqueduct or to repairs made in it by detachments of the Second, Sixth, and Tenth Legions.[43] This tile may now be added to the list of inscriptions. It should be noted that tiles and bricks bearing stamped impressions of the Tenth Legion have been found up to now only in the Jerusalem region and Jaffa,[44] and all date from 70 C.E. until the late 3rd century.[45] The particular stamp type which appears on the tile from the palace, "LX FRE," dates to the end of the 2nd century.[46] Therefore, it seems that the date of the stamp type on the tile from the fill corresponds generally to that of the remainder of the pottery assemblage.

Ill. 155. Tile Fragment: L(egio) X FRE(tensis).

b. LOCUS P24

Several floors were distinguished in the northernmost room (P33) of the palace. In the fill between floors P24 and P19 only four sherds of significance were found of 2nd century date. The dating of this group to the 2nd century is based mainly on the mortarium fragment which seems to belong to a class which flourished towards the end of the 2nd century C.E. Although we cannot ignore the class of Syrian mortaria which appeared in the eastern Mediterranean during the late 3rd and early 4th centuries, the palace mortarium fragment does not seem to belong to this group. The other three sherds have no exact parallels. A *terminus post quem* is provided by a coin found on the third floor (P17) in this room. The coin is dated 337-341 C.E., and hence provides a relatively early date for locus P24.

Amphoras

The fragmentary amphoras include a fragment of orange-brown ware with a thickened and triangular rim, cylindrical and tapering neck, and rounded handles (Fig. 3:1); they have no known parallels.

A second fragment found is of light orange-brown ware with a stepped rim, cylindrical neck, and the beginning of a flattened, upturned handle (Fig. 3:2)

Storage Jar

A storage jar fragment with triangular rim of red ware and with a painted white decoration on the rim (Fig. 3:3) was found. This may be a smaller variant of the bag-shaped jar discussed above.

42. J. Olami and R. Ringel, "New Inscriptions of the Tenth Legion Fretensis from the High Level Aqueduct of Caesarea," *IEJ* 25 (1975), 148-150. This article contains references to other relevant publications. See also idem, "Two New Inscriptions of the Tenth Legion in the Caesarea Aqueduct," *Qadmoniot* VII (1974), 44-46 (Hebrew).
43. Olami and Ringel ("New Inscriptions," above, n. 42), 148-150; idem ("Two New Inscriptions," above, n. 42), 46. The inscriptions definitely date to the time of Hadrian; however, the date of the aqueduct itself is open to discussion; see L. Levine, *Roman Caesarea, An Archaeological-Topographical Study, Qedem* 2 (Jerusalem, 1975), pp. 30-36.
44. D. Barag, "Brick Stamp-Impressions of the *Legio X Fretensis*," *Eretz-Israel* 8 (1967), 168-182 (Hebrew).
45. *Ibid.*, 73* (English summary).
46. *Ibid.*, 181.

Mortarium

One fragment of a mortarium was found (Fig. 3:4). It is of sandy light orange ware with large dark grits, and has a wide, overhanging rim and flaring wall. The fragment is too small to determine whether the mortarium itself bore an inscription. The class termed "Syrian mortaria," produced on the Lebanese coast in the late 3rd and early 4th centuries, usually bear stamped inscriptions in Greek.[47] These mortaria have been found on the eastern Mediterranean coast and in the Negev, Sinai and Transjordan.[48] A second center of production may be found at Raphiaḥ in the Gaza region.[49] Several examples have also been found in the Caesarea hippodrome.[50] The palace fragment may belong to the Syrian class, however in form and ware it does not resemble Syrian mortaria. It rather more closely resembles mortaria produced in Colchester, England during the second half of the 2nd century.[51]

THE BYZANTINE PERIOD

The latest pottery assemblage belonging to the occupation of the palace dates to the Byzantine period. There are several architectural stages within the palace, however the small amount of pottery found does not allow for more precise dating. The pottery from two loci alone, rooms P15 and P27, is derived from stratigraphic contexts. These rooms were burned in a fire which apparently destroyed the remainder of the palace. Two coins found on the floor of P15 and dated 527-538 C.E. may possibly indicate the *terminus ante quem* of both the pottery and the occupation of the palace.

The remainder of the Byzantine pottery — a small number of sherds from a few loci — is from either intrusive or surface contexts (loci P10, P14, P16). The fragments of Late Roman ware and the lamp date to the end of the 6th and early 7th centuries (Fig. 4). These sherds apparently represent the latest activity at the site of the palace (pits or a squatters' settlement). The date of this activity is confirmed by that of the latest coin from an intrusive context (P28) — 613 C.E.

Amphoras

The "Gaza" amphora is the most common amphora type recovered from the palace. Seven rims and one base fragment were found (Fig. 3:9-11). The amphora usually has a short rim, a long and narrow body, two loop handles on the shoulder, and a rounded base. The rim and shoulder bear clay accretions. The ware is brown-orange with a gray core. This type corresponds to Riley's Amphora Type 2 at the Caesarea hippodrome. Riley proposes that the origin of this type is to be found in the Gaza region, and presents examples which all date from the 4th to the 6th centuries.[52] Similar amphoras appear at Kellia in Egypt from the beginning of the 5th until the mid-8th centuries.[53] This type is discussed in further detail in Ch. IIIB (pp. 97-99).

The remainder of the amphoras are fragmentary and have no known parallels.

1. A fragment of pink ware with large black grits and a white slip was found. It has a thickened and rounded rim and a curved handle extending from mid-neck to shoulder (Fig. 3:5).
2. A fragment of light orange-brown ware, with a thickened and carinated rim and the beginning of a neck and handle (Fig. 3:6).
3. A fragment of orange-brown ware and a white coat, having a thickened and rounded rim, cylindrical neck, and angular handles (Fig. 3:7).
4. A fragment of an amphora or holemouth jar of orange ware, with a short rim, ribbed body and the beginning of a handle (Fig. 3:8).

Storage Jars

1. Three rim fragments belong to the bag-shaped jar type, with a long neck and a ridge at the top of the shoulder (Fig. 3:12, 13).
2. A jar fragment with a thickened rim; maybe a small version of the bag-shaped jar (Fig. 3:14).

Small Jar/Amphoriskos

A fragment of a hollow foot belongs to a small jar or amphoriskos of micaceous orange ware (Fig. 3:15).

47. J.W. Hayes, "North Syrian Mortaria," *Hesperia* 36 (1967), 337-347.
48. E. Stern, *Excavations at Tel Mevorakh (1973-1976), Part One: From the Iron Age to the Roman Period, Qedem* 9 (Jerusalem, 1978), p. 14, nn. 19-24; Hayes (above, n. 47), 342.
49. Y. Israeli, "A Roman Pottery Mortarium," *'Atiqot* 6 (Hebrew Series) (1970), 79, Pl. XXIV:2-4.
50. Riley (above, n. 26), 41.
51. M.R. Hull, *The Roman Potters' Kilns of Colchester* (Oxford, 1963), pp. 110-124, Fig. 66.
52. Riley (above, n. 26), 27-32.
53. M. Egloff, *Kellia: La Poterie Copte* (Geneva, 1977), I, pp. 116-117 (Type 182); II, Pls. 4:18, 21:1 and 60:30.

This type has a long history of development and is commonly found all over the Mediterranean. It first appears in Athens in the early 2nd century and continues there until the late 6th century. Other parallels include Beth She'arim (first half of the 4th century), Khirbet Shema' (4th-5th centuries), and the Caesarea hippodrome (early-mid 6th century).[54]

Cooking Ware

Closed Cooking Pots

1. A fragment of brown ware, with an everted and triangular rim, ridged neck, and carinated shoulder (Fig. 3:16). This resembles Riley's cooking pot Type 2 at the Caesarea hippodrome, dated to the end of the 3rd and beginning of the 4th centuries.[55] The type apparently had two thick handles.
2. A fragment of coarse brown-red ware, with a sloping rim and a short, straight neck (Fig. 3:17).

Casseroles

Three fragments are of a casserole type with beveled rim and twisted horizontal handles (Fig. 3:19-21). Two, of fine brown-orange ware, have angular horizontal handles and thin walls with distinctive ribbing (Fig. 3:19, 20). The third sherd is of coarser, dark brown-red ware, with a thick handle and smooth walls (Fig. 3:21). This casserole type corresponds to Riley's casserole Type 1A at the hippodrome (3rd and 4th centuries), and Types C5 and C6 from Capernaum (300-450 C.E.). It is commonly found in the eastern Mediterranean region.[56] A fragment of this type, found in the fill from room P1 containing the Roman period assemblage (see above), may provide an earlier, 2nd-3rd century, date of appearance for this type.

Small Pot

The pot fragment has an everted rim and ribbed, globular body (Fig. 3:18). Its shape resembles Riley's No. 31A from the hippodrome, which is dated to the 6th century.[57] However the wares differ; this fragment is of an orange fabric uncommon in cooking pots.

African Red Slip Ware

One rim fragment of a bowl has a thickened rim and sloping wall (Fig. 4:1). It belongs to Hayes' Form 105, a common vessel type dated 580-660 C.E.[58]

Cypriote Red Slip Ware

Cypriote Red Slip Ware is characterized by a pink-orange fabric, clean breaks, and an irregular roulette decoration. It dates from the end of the 4th century until 700 C.E.[59] Seven fragments of this ware were found; four correspond to Hayes' Form 9, and three are of rare forms.

1. A badly worn fragment of a thickened and incurved rim closely resembles Form 9, Type A (Fig. 4:2). Type A is the earliest variant of Form 9, and is dated 550-600 C.E.[60]
2. A rim fragment with two grooves on its exterior (Fig. 4:3). It belongs to Form 9, Type C, dated from 580 C.E. until the end of the 7th century.[61]
3. A rim fragment from a bowl, with two rows of roulette decoration on the outside wall below the slightly incurved rim (Fig. 4:4). It most closely resembles Form 9, Type B, which is contemporary with Type C.[62]
4. A rim fragment either of Form 9, Type A or Type B (Fig. 4:5).[63]
5. Two rim fragments identical in fabric and slip (Fig. 4:6, 7). They differ from the previous fragments in their fine yellow-orange ware and thick slip. Both have roulette decoration on the exterior surface. The fabric of these fragments more closely resembles Eastern Sigillata ware than Cypriote Red Slip Ware.
6. A fragment of a rare bowl type with a flat shelf rim and a row of hollow protruding knobs which

54. Robinson (above, n. 24), p. 17, Pl. 41; N. Avigad, *Beth She'arim, III: Catacombs 12-23* (Jerusalem, 1976), pp. 194, 197, Fig. 94:12; E. Meyers, A. Kraabel, and J. Strange, *Ancient Synagogue Excavations at Khirbet Shema', Upper Galilee, Israel, 1970-1972, AASOR* 42 (North Carolina, 1976), pp. 237-238, Pl. 7:23; Riley (above, n. 26), 31.
55. Riley (above, n. 26), 41, No. 56.
56. *Ibid.*, 35; Loffreda (above, n. 32), p. 48; V. Tzaferis, "The Archaeological Excavations at Shepherds' Field," *Liber Annuus* 25 (1975), 40-41, Pl. 19:10; idem, "A Tower and Fortress Near Jerusalem," *IEJ* 24 (1974), 93, Fig. 4:13; B. Bagatti, *Excavations in Nazareth, I: From the Beginning till the XII Century* (Jerusalem, 1969), Figs. 226:8, 287-288; Meyers *et al.* (above, n. 54), Pl. 7:12:28; Egloff (above, n. 53), p. 100, Pl. 47.
57. Riley (above, n. 26), 35.
58. Hayes (above, n. 37), pp. 164-169, Figs. 31, 32.
59. *Ibid.*, p. 301.
60. *Ibid.*, pp. 379-382, Fig. 81.
61. *Ibid.*, pp. 379-382, Fig. 82.
62. *Ibid.*, pp. 379-382, Figs. 81-82.
63. *Ibid.*, pp. 379-382, Fig. 81.

were apparently formed by a stick pushed up from under the shelf (Fig. 4:6). Below the rim are two rows of roulette decoration. An exact parallel, which Hayes classifies as Form 4, comes from Antioch[64] and dates tentatively to the 5th century.[65]

7. A fragment has a flat shelf rim and groove along the edge of its rim (Fig. 4:7). It has no known parallels, but its ware is identical to that of the previous fragment, and it therefore may be classified as a Cypriote Red Slip Ware vessel.

Late Roman C Ware — Phocaean Red Slip Ware[66]

These vessels are characterized by a brown-red fabric and dull red slip which was made of the body clay. The interior surface is rough. The ware is dated from the 5th to the 7th centuries.[67]

1. A rim fragment ending in a flange (Fig. 4:8). It resembles Hayes' Form 3, a common shape dated from the mid-5th to the mid-6th centuries.[68]
2. A heavy, rolled rim fragment with a slight groove below the rim (Fig. 4:9). The exterior surface of the rim has a black band of discoloration, apparently caused by firing conditions. This fragment is an example of Form 10, Type C, dated to the first half of the 7th century.[69]

Local Bowls

These are characterized by the absence of a burnish or slip.

1. A fragment of gritty pink-orange ware with an outturned stepped rim whose upper part is triangular in section (Fig. 4:10). This may be a local imitation of African Red Slip Ware, Hayes' Forms 67 or 68, which both date from the second half of the 4th to the first half of the 5th centuries.[70]
2. A fragment of thick, granular ware with a heavy square rim (Fig. 4:11). A parallel comes from Capernaum (Type C12A), where it is dated to the Late Roman period (300-450 C.E.)[71] At the Caesarea hippodrome this type was classified by Riley as a square variety of Syrian mortaria, and was found in a 6th century stratum.[72]
3. A fragment of well-levigated beige clay has a rounded rim with a straight wall (Fig. 4:12). It may possibly be a lid.

Lamp

A nozzle fragment of a lamp of orange-brown ware (Fig. 4:13). This type has a round reservoir which slopes upwards, a handmade nozzle attached to the reservoir, a flat base, and a high loop handle. The body of the lamp is wheelmade. This type was common during the Byzantine period. Parallels dating to the 3rd-5th centuries come from Samaria, Silet edh-Dhahar, Mampsis, Nessana and Sobota, however this type is sometimes associated with the Persian conquest of 614 C.E.; according to Rosenthal and Sivan, the excavators' dates may be somewhat early.[73]

SUMMARY

The ceramic material from the palace spans the 1st to the early 7th centuries C.E. (the Herodian period to the end of the Byzantine period). It seems that the building was in use for an extended period of time. The sherds found under the earliest floor in room P3 (locus P33) are few and fragmentary, and are only generally identifiable as vessels of the 1st century.

An assemblage was found in the fill on the floor of the central room P1 (loci P6, P9, P30). Although the precise stratigraphic position of the assemblage is unclear, it appears, typologically, to be a homogeneous assemblage belonging to the second half of the 2nd and 3rd centuries C.E. The date is based, in particular, on the amphoras, most of which are North African imports, and on the African Red Slip Ware vessels (Figs. 1:4-17, 2:19-20, Ills. 146-153). A local imitation of an African Red Slip Ware form was also recovered from this group (Fig. 2:21). This assemblage bears importance for dating local wares of the 2nd and 3rd centuries, particularly in the case of the

64. F.O. Waagé, *Antioch-on-the-Orontes, IV: Ceramics and Islamic Coins* (Princeton, 1948), pp. 52-54, Pl. X:916.
65. Hayes (above, n. 37), pp. 376-377.
66. Hayes proposes to change the name of this ware to "Phocaean Red Slip Ware" since its center of production has been located at Phocaea in western Turkey. See Hayes, *A Supplement to Late Roman Pottery* (London, 1980), p. 525.
67. Hayes (above, n. 37), pp. 323-324.
68. *Ibid.*, pp. 329-338, Figs. 67, 69.
69. *Ibid.*, pp. 343-346, Fig. 71.
70. *Ibid.*, pp. 112-118, Figs. 19, 20.
71. Loffreda (above, n. 32), p. 53, Fig. 12:6.
72. Riley (above, n. 26), 26-27, No. 42.
73. Rosenthal and Sivan (above, n. 41), pp. 122-123, Nos. 506-509.

bag-shaped jars with a ridge at the neck. These jars were in use from the 1st to the 4th centuries, with few changes in form. The palace jars exhibit the appearance of minor but significant changes: lowering of the ridge to the lower part of the neck or beginning of the shoulder, dense ribbing, poorer quality of clay, and typical brown-orange color. Variant C (Fig. 2:7-9) is important, as it does not appear at all during the 1st century and seems to be a transitional form leading to the dominant Byzantine form.

The casserole types found in this assemblage also exhibit continuity from the earlier periods and transition into the later periods. The first type (Fig. 2:16-18) appears at the end of the 1st century and continues into the 2nd and 3rd centuries. The second (Fig. 2:15) becomes the dominant type in the Byzantine period.

The appearance of local vessels, together with African amphoras and African Red Slip Ware in one assemblage, indicates commercial connections in the Roman period between Caesarea and the Roman world, particularly North Africa. This picture is complemented by the results of the excavations in the hippodrome at Caesarea. The amphoras found in this assemblage probably included commodities such as wine or fish, yet it is difficult to determine whether the amphoras were used as such or were employed for other purposes, as it is not clear if the amphoras were actually used in the palace or brought in as part of the fill (see discussion in Ch. III, pp. 120-121).

The pottery found on the floor of P24 is particularly important but, due to the fact that it includes only four sherds, it may be only tentatively dated. The mortarium fragment resembles in form and ware a 2nd-century group produced in England. It is possible that the palace mortarium belongs to the 1st century C.E., but due to a lack of published parallels from this period we may only conjecture the possibility of such a date.

The Byzantine pottery has two distinct sources at the palace: the side rooms (in particular, P27) and pits or disturbances. The range of the pottery, especially that from the pits or disturbances, extends from the 5th to the 7th centuries. Two coins found on the floor of P15 dated to the reign of Emperor Justinian I (527-538 C.E.) may shorten the range of the occupation of the palace until this period. It also appears that only the pottery from the disturbances or pits extends into the early 7th century, however the possibility that the palace continued in use until the Moslem conquest should not be ruled out.

Fig. 1: Promontory Palace Pottery

Vessel	Locus	Reg. No.	Description
1. jar	P33	1074/1	orange ware, beige exterior, few small dark grits
2. cooking pot	P33	1074/7	red-brown ware
3. lamp	P33	1074/4	white-gray ware, black slip, few small dark grits
4. amphora	P6	1039/7	light orange ware, beige exterior, few small grits including mica
5. amphora	P6	1039/6	red-brown ware, beige exterior, medium-large white and dark grits, three finger impressions inside neck
6. amphora	P6	1039/3	beige-orange ware, beige exterior, white and dark grits
7. amphora	P6	1039/5	red-brown ware, few dark grits
8. amphora	P6	1039/29	orange-brown ware, few grits
9. amphora	P6	1039/29	brown ware, beige exterior, white and dark medium grits
10. amphora	P6	1039/11	brown ware, small dark and medium white grits
11. amphora	P6	1039/2	orange-red ware, light orange exterior, medium-large dark and white grits, ribbing inside neck
12. amphora	P6	1039/18	light orange ware, beige exterior, small white and dark grits
13. amphora	P6	1039/23	sandy beige ware, beige exterior, white and dark grits including fine crystalline particles
14. amphora	P6	1039/4	beige ware, many small dark grits
15. amphora	P6	1039/4	light brown ware, beige exterior, white and dark small-medium grits
16. amphora	P30	1068/8	dark brown ware, white and dark grits
17. amphora	P6	1039/17	light orange-brown ware, yellowish exterior, white and dark grits

Fig. 2: Promontory Palace Pottery

Vessel	Locus	Reg. No.	Description
1. jar	P1	1008/3	orange ware, beige exterior, gray core, few white grits
2. jar	P9	1015/2	brown-gray ware, few grits
3. jar	P6	1039/13	orange-red ware, brown core
4. jar	P6	1018/8	orange-brown ware, light orange exterior, white grits
5. jar	P6	1039/9	red ware, white grits
6. jar	P6	1018/4	orange-red ware, light orange exterior, white grits
7. jar	P6	1039/12	yellowish-beige ware, few grits
8. jar	P6	1039/10	sandy orange ware, few white grits
9. jar	P6	1039/8	orange ware, beige exterior, white grits
10. jar	P6	1004/10	red-brown ware, few white and dark grits
11. pithos	P6	1039/38	coarse brown-orange ware, many small and large, light and dark grits
12. cooking pot	P6	1018/1	orange-brown ware, beige exterior, gray core
13. cooking pot	P6	1039/43	brown ware, few white grits
14. cooking pot	P6	1039/44	brown-red ware, white grits
15. casserole	P6	1004/9	orange-brown ware
16. casserole	P30	1068/5	brown-orange ware
17. casserole	P6	1039/15	brown-orange ware
18. casserole	P6	1004/8	red-brown ware, few grits
19. bowl	P6	1039/16	orange ware, orange slip, few grits
20. platter	P6	1018/6	orange-pink ware, red slip, burnished inside
21. bowl	P30	1068/6	brown-pink ware, red slip, burnished inside, dark and light grits
22. lamp	P6	1039/1	buff ware, red slip, few grits
23. krater	P30	1068/3	pink ware, small white grits

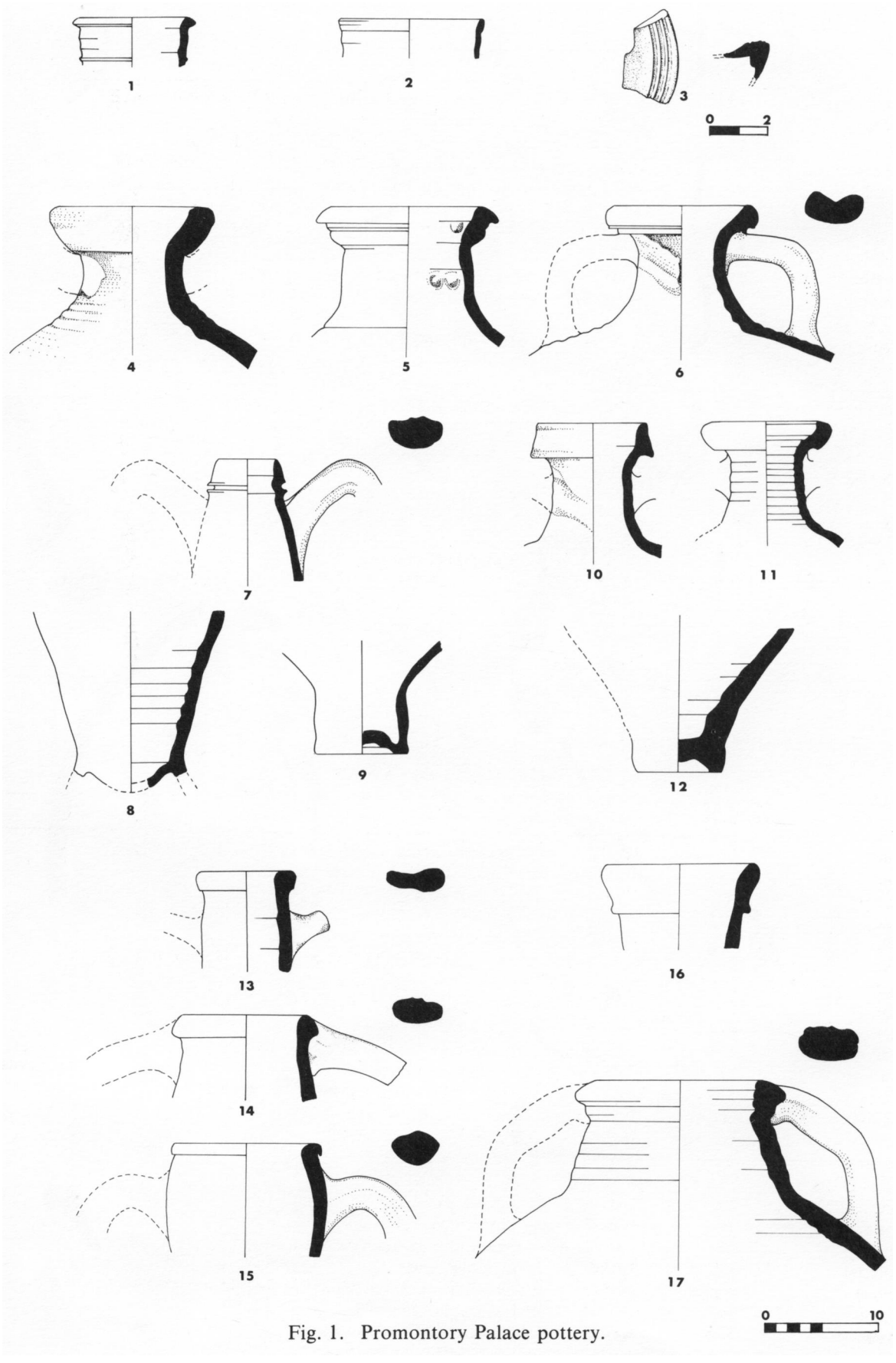


Fig. 1. Promontory Palace pottery.

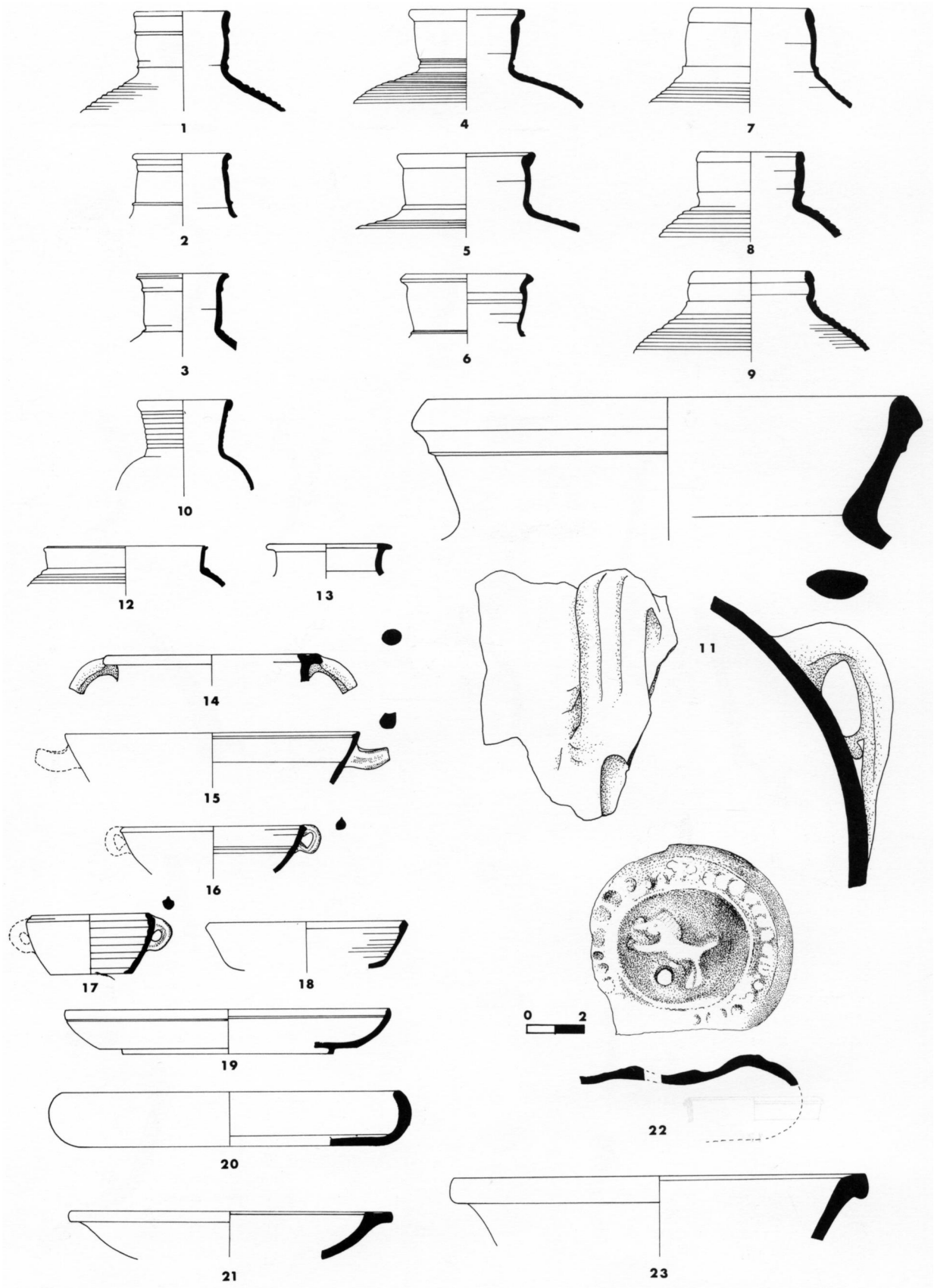


Fig. 2. Promontory Palace pottery.

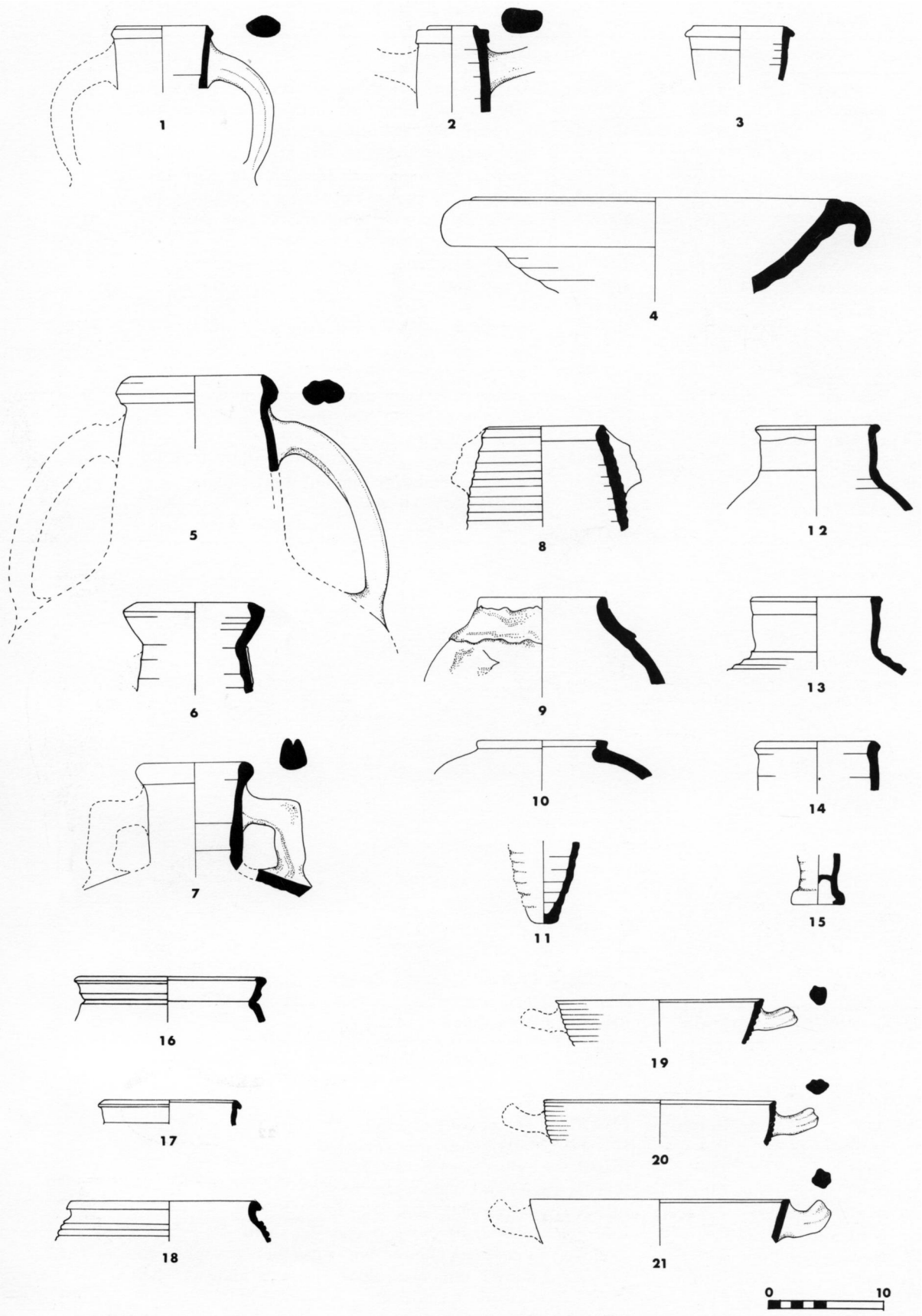


Fig. 3. Promontory Palace pottery.

Fig. 3: Promontory Palace Pottery

Vessel	Locus	Reg. No.	Description
1. amphora	P24	1055/4	orange ware, gray exterior, brown core, white grits
2. amphora	P24	1055/1	light brown-orange ware, many white and dark grits
3. jar	P24	1055/2	red ware, dark red slip, few grits
4. mortarium	P24	1055/5	light orange ware, large dark grits
5. amphora	P27-28	1059/15	pink-orange ware, white exterior, large dark grits
6. amphora	P28	1062/2	light- orange brown ware, few grits including mica
7. amphora	P10	1069/2	orange-brown ware, white exterior, few grits
8. amphora	P27	1059/3	orange ware, many small dark grits
9. amphora	P14	1044/4	brown ware, gray core, few grits
10. amphora	P27	1059/4	brown ware
11. amphora	P16	1028/1	orange-gray ware
12. jar	P14	1044/9	light brown-gray ware, white grits
13. jar	P27	1059/6	light brown-orange ware, yellowish-beige exterior, few white grits
14. jar	P27	1077/2	orange ware, few grits
15. small jar	P27	1059/2	orange ware, many grits including mica
16. cooking pot	P15	1023/1	brown ware, white grits
17. cooking pot	P27	1077/3	brown-red ware, few white grits
18. small pot	P10	1069/13	orange ware, light brown-gray exterior, small dark and light grits
19. casserole	P14	1044/5	orange ware, brown interior, white grits
20. casserole	P16	1025/3	orange ware, few grits
21. casserole	P27	1059/1	dark brown-red ware, white and dark grits

Fig. 4: Promontory Palace Pottery

Vessel	Locus	Reg. No.	Description
1. bowl	P10	1069/17	orange ware, orange-red slip
2. bowl	P10	1069/8	pink-orange ware, reddish slip
3. bowl	P14	1044/1	pink ware, red slip
4. bowl	P14	1044/3	orange ware, red slip
5. bowl	P14	1044/6	light orange ware, red slip
6. bowl	P16	1025/2	yellow-orange ware, red slip
7. bowl	P10	1069/4	yellow-orange ware, red slip
8. bowl	P16	1025/1	brown-pink ware, red slip
9. bowl	P14	1044/7	pink-orange ware, orange slip, small wite grits
10. bowl	P28	1062/4	pink-orange ware, many small and large white grits
11. bowl	P10	1069/6	brown ware, many small and large white and dark grits
12. bowl	P10	1069/9	beige ware
13. lamp	P10	1069/5	light brown-orange ware, many small grits

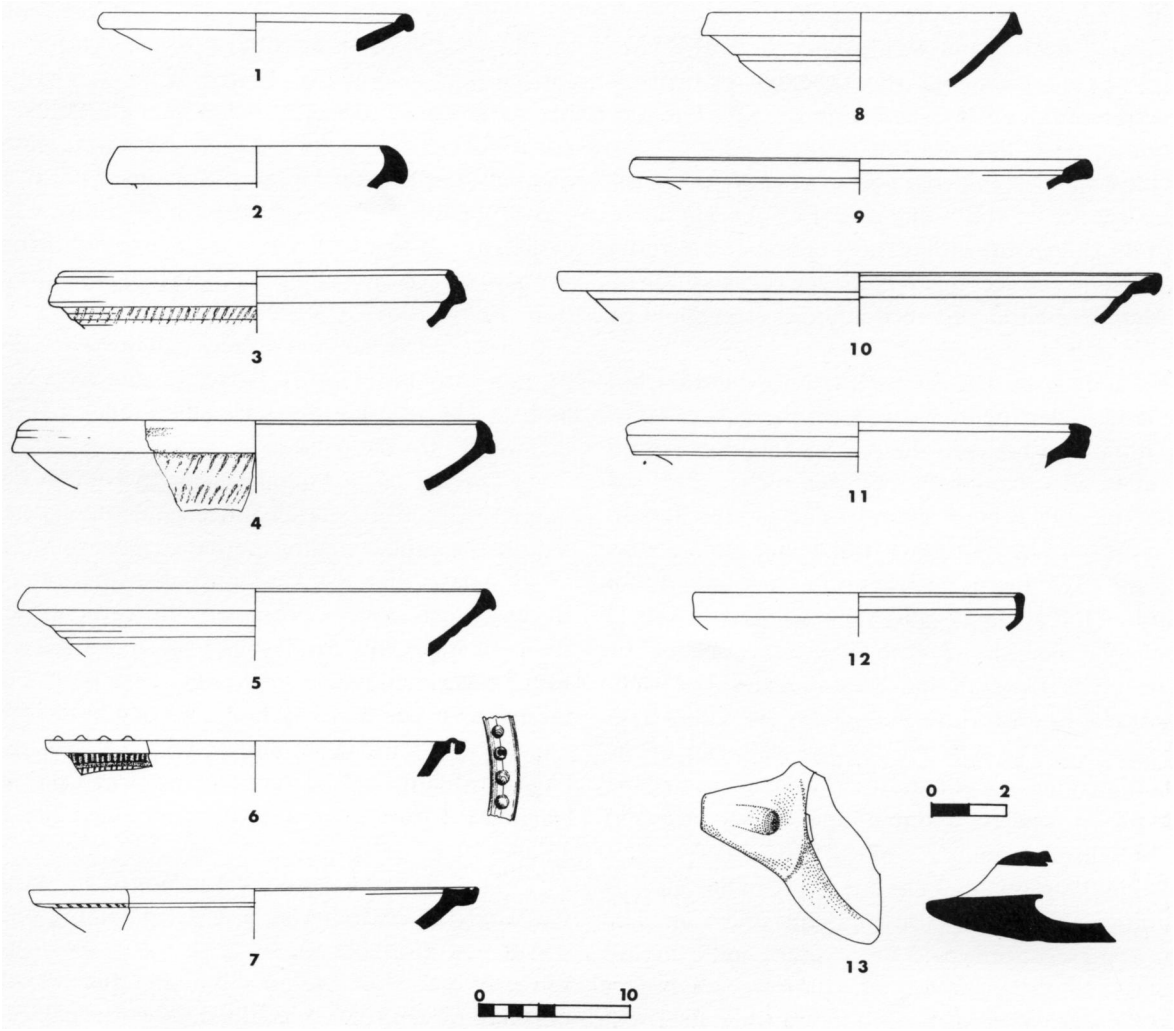


Fig. 4. Promontory Palace pottery.

C. Synthesis

E. Netzer, R. Bar-Nathan

It is difficult to determine the date of the "Promontory Palace" on the basis of the ceramic evidence. Only one early floor (P24 in room P33) yielded material from beneath. Given the poor quality of this floor (in contrast to the mosaic floors in the other rooms and the plastered floor in adjacent room P18) and the contents of the fill beneath it (locus P33) which contained a high percentage of ash, it is unlikely that floor P24 was the earliest floor in room P33. It remains difficult to determine whether P24 was the original floor or a replacement for one which was dismantled. However, the "eternal" conundrum in archaeology must be raised here: Does the ceramic material below the floor necessarily date its construction, or could it be simply a homogeneous fill which originated nearby and was brought here at a later date? The question concerning the date of the construction of floor P24, whether during the Herodian period or later, thus remains unanswered.

Other material evidence pointing toward the possible existence of the building during the Herodian period includes the pithos fragments found in room P1. As noted above, this pithos type is characteristic of Herodian sites, and such a large vessel could be moved only with great difficulty.

Not only is the date of construction a question, but the date of destruction as well, primarily because of the difference between the pottery found in central room P1 and that of the two side rooms, P15 and P27. The pottery from room P1 dates to the Roman period (2nd-3rd centuries), while that from rooms P15 and P27 dates to the Byzantine era (6th-early 7th centuries). Two facts must be considered here: (1) The difference in the state of preservation of the floors. The floor in the central room was well-preserved, whereas those in the side rooms were fragmentary. (2) The difference in the character of the accumulations. A burnt destruction layer covered the side rooms, whereas an intentional fill had been laid in the central room.

Room P1 probably went out of use in the 2nd-3rd centuries and was later intentionally filled up. The side rooms continued to be occupied until the 6th century. Nevertheless, it is difficult to accept the fact that the side rooms continued in use while the room between them was filled with earth to a height of 1.5-2.0 m. Bearing in mind the topography, however, this difficulty can be explained. The bedrock protrudes *c.* 2.0 m. above the surface of room P1 immediately east of the room. Therefore, these levels to the east could have served to determine in some way the height of the fill. The difference in heights may have been bridged either by a gradual slope towards the west or by a support wall at the western edge of room P1. In any case, a decline in the quality of the building in the Byzantine era is visible in room P33 as well as in the pool.

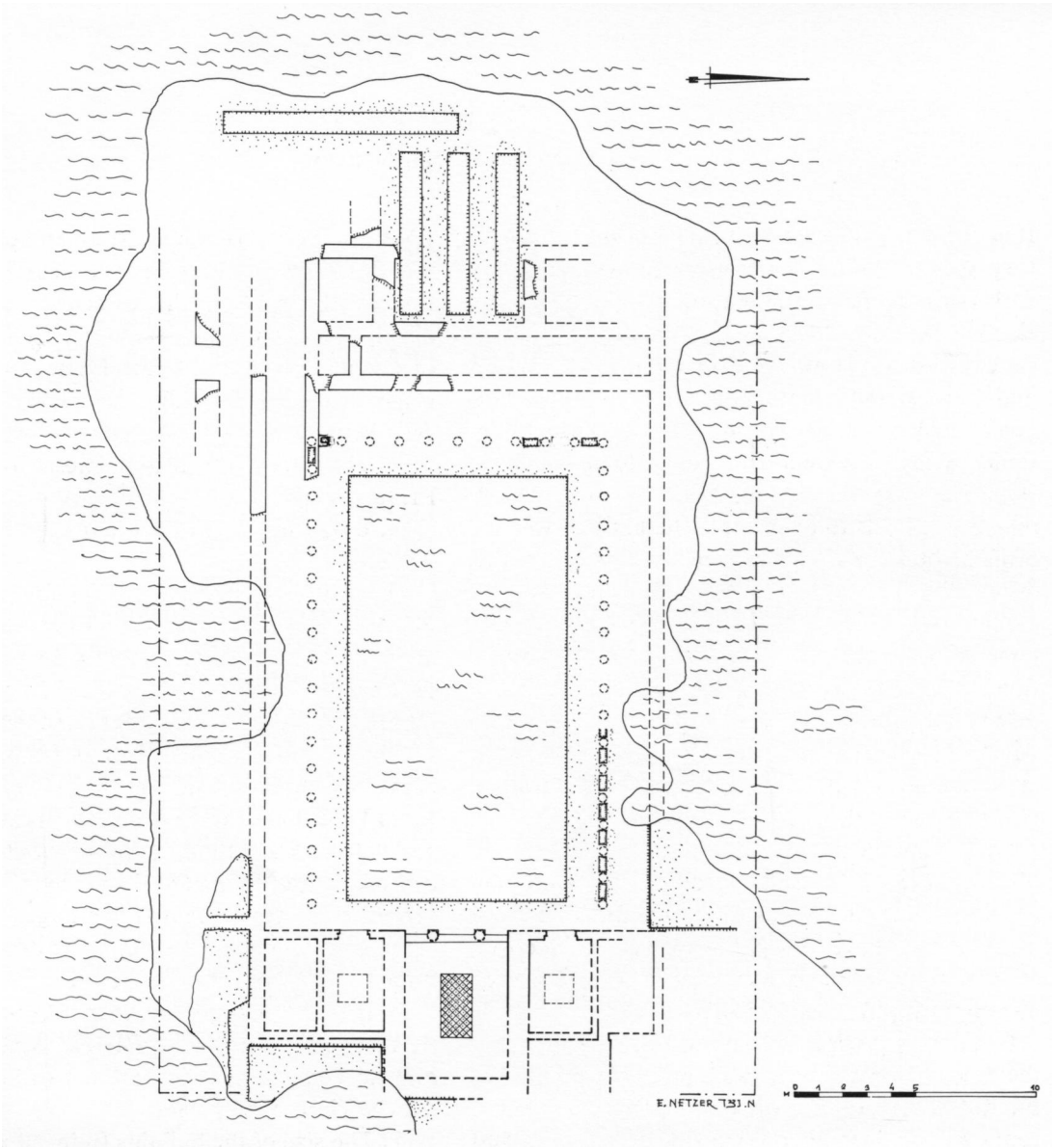
The relatively small amount of pottery from rooms P15, P27, and the upper floors of room P33 creates another difficulty in determining the precise date of the final destruction. Coins dated 527-536 C.E. found on the floor of room P15 offer a *terminus post quem* for the final destruction. Pottery from later disturbances (such as robber trenches near the walls) in room P15 belongs to the end of the Byzantine period and indicates that the building went out of use at the end of the 6th-beginning of the 7th centuries, if not earlier. It is possible that at this stage, if not before, the pool turned into a "piscine" and that the stairs on floor P27 in room P33 were built.

In light of this summary, there remains a possibility that the "Promontory Palace" could have been built in Herod's day. Several factors favor a Herodian origin for the palace:

(1) The size of the building (min. 50 x 100 m.), its unique location, and its magnificence justify its designation as a public building, perhaps a governor's or a king's palace (Plan 17). The large pool in the center of the building is likewise prominent. However, around the pool (especially to the west) was much space in which additional rooms might have been built. Furthermore, if the building had a second storey, the number of additional rooms would have been even larger. In light of this, the pool apparently did not originally function as a piscine, as suggested by Flinder.[74]

(2) The unusual location of a palace built "on the sea" and the centrality of a large swimming pool, which was probably fed by fresh water, are in the spirit of many of Herod's building projects–the northern palace at Masada, the third winter palace at Jericho (on both banks of Wadi Kelt), the construc-

74. Flinder (above, n. 1), 77-80.



Plan 17. A reconstructed plan of the promontory palace.

tion of buildings on artificial mounds at Jericho,[75] and the dramatic location of the mountain palace-fortress at Herodium.

(3) The abundance of swimming pools at Herod's countryside palaces at Jericho and Herodium.[76] Nevertheless, sea-bathing was not a common practice during the Roman period and there was logic, therefore, in building a fresh water swimming pool at the seashore — an idea which would also seem to fit Herod's imagination.

(4) In Josephus' description of Caesarea the palace receives special attention; it is the first structure to be mentioned there.[77] One should also note that, except for the port, the promontory palace was the only structure which, throughout all periods, protruded into the sea.

In light of the above, the pottery of locus P33 and the pithos fragments found in the fill above room P1 strengthen the possibility that the palace was built in the Herodian period, despite the abovementioned difficulties in interpreting the ceramic evidence.

The fact that Caesarea was not destroyed after the First Jewish Revolt, coupled with the relatively long occupation of the building indicated by the pottery, and the general lack of later floor levels (except in room P33), may support the idea that this structure was originally a palace constructed by Herod. Further indications as to the date of the construction of this building will hopefully emerge from additional excavations at the site.

75. See E. Netzer, "The Winter Palaces of the Judean Kings at Jericho at the End of the Second Temple Period," *BASOR* 228 (1977), 1, 10.

76. See *ibid.* and idem, "The Swimming Pools of the Hasmonean Period at Jericho," *Eretz-Israel* 18, pp. 344-352 (Hebrew).

77. *Antiquities*, XV, 9, 6, 331.

CHAPTER SIX

THE ARCHAEOLOGICAL FINDS AND THEIR RELATIONSHIP TO THE HISTORY OF THE CITY

L.I. Levine

The study of Caesarea has appealed to scholars for a number of reasons. The city was one of the most important in ancient Palestine, and for an extended time its supremacy went unchallenged. Founded as a showcase city and endowed with the grandeur that has become the hallmark of Herodian construction, Caesarea soon became the political capital of its province, retaining this position for six hundred years. The magnificent port, described in great detail by Josephus, assured the city economic prosperity for as long as the sea-lanes continued to play a pivotal role in the politics and commerce of antiquity. As the central emporium of the region and undoubtedly its largest city, Caesarea provided the markets for the produce of Palestine and, more importantly, a channel for the export of goods to the rest of the Roman world. Concurrently, goods from other major centers were often channeled through the city to the interior of the country.

Interest in the city is further heightened by the large and influential Jewish, Christian and Samaritan communities which flourished there from the 3rd century onwards. Following the devastation of Judaea that resulted from the two major uprisings against Rome (66-74, 132-135 C.E.), large numbers of Jews moved northward to the Galilee and into the coastal region as well. By the mid-3rd century Caesarea boasted one of the important rabbinic academies of Palestine, and around the turn of the 4th century its sages, under Rabbi Abbahu, appear to have attained a leading role within Palestinian Jewry at large. By the early 3rd century the Caesarean Christian community had become the most influential in the province, and with the advent of Origen (*c.* 232) the city became one of the intellectual centers of the Christian world. This prominence continued for some one hundred years as Procopius, and then Eusebius, assumed the leadership of the city's Christian community. Even after Jerusalem reasserted its primacy in church affairs, an effort crowned with success under Juvenal and officially recognized at the Council of Chalcedon in 451, the Caesarean bishopric retained its metropolitan status and continued to play a role in regional affairs. Finally, Caesarea's Samaritan community grew during the course of the 2nd and 3rd centuries, and by the Byzantine period it was among the largest in Palestine. In each of the three major Samaritan revolts of the 5th and 6th centuries Caesarea served as either the starting point or goal, indicating both the centrality of the local Samaritan community and the importance of the city generally.

Caesarea's demographic diversity is paralleled by an extraordinary variety of sources relating to the city. Josephus tells us much about the events of the 1st century, from Herod's foundation of the city to the end of the First War against Rome.[1] Rabbinic literature provides extensive information about the Caesarean Jewish community of late antiquity, and especially about its rabbinic class. Similarly, the writings of Origen and Eusebius often highlight the achievements and issues confronting the local Christian community of the 4th century. In addition, reference is made to the city by Roman and Byzantine historians, and extensive archaeological remains bear witness to the city-life of the period; inscriptions, coins, amulets, and other small finds contribute significantly to our knowledge of the city.

1. For our purposes, we are ignoring Caesarea's forerunner on the same site, Strato's Tower, the Sidonian colony whose 300 years of history were by and large undistinguished. Strato's Tower never constituted an important political or economic center along the Palestinian coast and is mentioned only infrequently in literary sources of the time. Archaeological material is likewise scarce. For a convenient summary, cf. L. Levine, *Caesarea under Roman Rule* (Leiden, 1975), pp. 5-14; J. Ringel, *Césarée de Palestine: Etude historique et archéologique* (Paris, 1975), pp. 15-26.

This wealth of evidence is indicative of the enormous prosperity enjoyed by Caesarea during the first half millennium of its existence, albeit its success was neither continuous nor single-faceted. Herod's Caesarea was new, bold and very Roman, both in its types of buildings and techniques of construction. The city itself, however, was of modest dimensions, and several important public buildings were located outside the city walls. The archaeological material attests to the opulence of the city in the late Roman period: the art and architectural remains found at the theater, the impressive Roman statues, and the numerous monumental columns, capitals and other architectural pieces reused in later periods all indicate that Roman rule was a period of unusual prosperity and material achievement for the city. This munificence and splendor were renown. The anonymous 4th century *Expositio totius mundi et gentium* notes, "Iam etiam et Caesarea civitas est similiter deliciosior et abundans omnibus...,"[2] Eutropius calls Caesarea an "urbs clarissima,"[3] and Ammianus Marcellinus speaks of the city's unsurpassed splendor.[4]

The Byzantine city continued to flourish, although here the evidence is mixed. Physically, the city grew to its largest extent, far beyond the reaches of Roman Caesarea, and another wall, semi-circular in shape, was now built to protect this enlarged area. Such expansion was not uncommon in late antiquity: many cities and towns in Syria and Palestine, as well as in other locales, achieved thriving economies during this period (now based more on agriculture than on trade), and their populations grew proportionately.[5] It was during this period that a second, low-level aqueduct from the Zerqa River (Naḥal Taninim) was added, and large monumental esplanades were erected in the city. The hippodrome appears to have flourished throughout this period, and the rival parties of Blues and Greens were as active in Caesarea as in other Byzantine cities.

Yet the literary evidence, and at times even the very absence of it for this era, suggests a general decline in the city's fortune. Its political importance waned as the province which its headed became progressively smaller. Neither an Origen nor a Eusebius enhanced the local community with the type of leadership and stature enjoyed earlier. The rabbinic community disappeared and the Jewish community appears to have become of minor importance in Palestinian Jewish life. With the suppression of the Samaritan revolts, this segment of the city's population became marginal and insignificant. Procopius and his student, Choricius, writing in the early 6th century, describe the physical decline of two important Caesarean installations, the port and the aqueducts. The former became so silted that ships were unable to dock, while the poor maintenance of the latter led to severe water shortages in the city.[6] The Byzantines built extensively, and often so thoroughly that earlier remains were practically obliterated. Yet they often reused Roman material: Roman statues decorated Byzantine streets and a stone block with a Roman dedicatory inscription was used later as a step in the theater. When remains of both periods are viewed side by side, the opulence and grandeur of the earlier era become even more apparent.

The fortune, fate and prominence of Caesarea in the second half-millennium of its history (640-1265) were far different. If evidence from Byzantine times is somewhat mixed, with archaeological remains indicating a continuum with the past, albeit on a far more modest plane, all such evidence is absent for the last six hundred years of Caesarea's history. The city itself was drastically reduced in size, and many amenities which had serviced it in previous centuries and afforded it a claim to superior rank were now nonfunctioning. Caesarea was no longer a political center, and the economic importance it had retained during the Byzantine era all but disappeared. With the reorientation of the Arab world away from the sea and toward the desert, coastal cities such as Caesarea, Tyre and Alexandria suffered the consequences economically, socially and politically. The buildings from this period are less massive, less ornate, and more reflective of an agriculturally-based domestic economy. Similarly, under the Crusaders Caesarea was never a major port or stronghold. The prominence enjoyed by the coastal cities now belonged to Tyre, Acre and Jaffa.[7] Even though

2. *Expositio totius mundi et gentium*, ed. and trans. J. Rougé, *Sources chrétiennes* 124 (Paris, 1966), p. 160.
3. Eutropius, *Breviarium ab urbe condita*, VII, 10, ed. H. Droysen (Berlin, 1879), p. 120.
4. Ammianus Marcellinus XIV, 8, 11.
5. M. Avi-Yonah, "The Economics of Byzantine Palestine," *IEJ* 8 (1958), 39-51. For the affluence of Syria generally, owing largely to the widespread development of olive plantations, cf. G. Tchalenko, *Villages antiques de la Syrie du Nord* (3 vols.; Paris, 1953-1958); M. Rodinson, "De l'archéologie à la sociologie historique. Notes methodologiques sur le dernier ouvrage de G. Tchalenko," *Syria* 38 (1961), 170-200.
6. L. Levine, *Roman Caesarea: An Archaeological-Topographical Survey, Qedem* 2 (Jerusalem, 1975), pp. 18, 31.
7. M. Benvenisti, *The Crusaders in the Holy Land* (Jerusalem, 1970), pp. 75-145.

medieval travellers are frequently complimentary in describing the city's gardens, orchards and fountains, this, however, does not contradict Caesarea's drastically diminished political, economic and material status.

It is true that we know very little about Moslem and Crusader Caesarea, especially in comparison to the earlier periods. More information would undoubtedly enhance our knowledge of the greater complexity of city-life and perhaps of achievements, and even a measure of prominence which presently escapes us. Nevertheless, it can still be maintained with confidence that an assessment of significant decline is not due merely to a lack of evidence nor to a presumption of the general "decline" in these centuries. Rather, all evidence clearly supports this trend.

Given this overview of the city, its development and decline, we may now turn to the major finds of our excavations. How does the material unearthed contribute to our knowledge of Caesarea? What earlier assumptions may be challenged, which reaffirmed? What new information has been discovered? As is evident from previous chapters, these excavations have brought to light much more data relating to the later rather than to the earlier periods. While Crusader remains have been disappointing in quality and quantity (see below), those of the Arab and Byzantine periods have been better preserved. Very little has been found of Herodian Caesarea or of Strato's Tower. This situation is reflective not only of our excavations. Much the same result was forthcoming in the various probes of the Joint Expedition in other areas of Caesarea and in the excavations carried out in Tiberias and elsewhere. In sites of continuous settlement from antiquity into the Middle Ages, later construction has inevitably disrupted, reused or replaced evidence of earlier levels.

Bearing this in mind, we may now delineate the relationship of the finds, brought here in chronological sequence, to the wider historical context.

ROMAN CAESAREA

Two important finds can be dated to the very early stages of Caesarea's history. First, there are the bottom courses of what was once a massive wall or a pier approaching the port. Stratigraphically this wall appears almost certainly to derive from the Herodian period. If so, this may be a small section of what were once the massive harbor installations so vividly described by Josephus.[8] The structure to which this wall related is not clear. At this point another wall built of large stone blocks protrudes into the sea. Might this also have been part of the Caesarea port, perhaps one of the piers used as a dock?

To the south of our main excavation area, on a promontory just west of the theater, we discovered a mosaic floor, a portion of which had been noticed by Link in 1960 and again by Flinder in 1973.[9] While the mosaic itself has been almost unknown, the nearby rock cuttings have been a constant source of speculation. Guérin assumed that this promontory was part of the southern mole of the Caesarea harbor and that the large rectangular cavity had once been the site of the Drusus tower.[10] Conder and Kitchener were more circumspect; positing the location of the port farther to the north, they suggested that this was the site of a small building.[11] Similarly, the Italian excavators assumed that part of the building was once located here, but refrained from any further speculation.[12] Most recently, Flinder has opined that the cuttings were indeed pools which had once been part of a Caesarean piscine.[13]

The evidence, though fragmentary, may point in quite a different direction. As discussed above, the series of rooms, one of which contained the elegant mosaic floor, clearly relates to the pool and other rock carvings. Given their prominence in the only promontory jutting into the sea, other than the port itself, this complex seems to have been more than a mere piscine. The probable early dating of at least one nearby floor, the symmetry of the rock cuttings (which undoubtedly served as pools and water channels), the breathtaking location, and the precision of execution all suggest that we may have located a magnificent palace in Caesarea. In his *Antiquities*, Josephus mentions a splendid palace (or palaces)[14] of Herod when describing the foundation of the city:

> And when he observed that there was a place near the sea, formerly called Strato's Tower, which was very

8. *War*, I, 20, 5-7, 408-414; *Antiquities*, XV, 9, 6, 331-341.
9. C.T. Fritsch and I. Ben-Dor, "The Link Expedition to Israel, 1960," *BA* 24 (1961), 52-55, and below, n. 13.
10. M.V. Guérin, *Description géographique, historique et archéologique de la Palestine*, II, 2 (Paris, 1875), pp. 323-324.
11. C.R. Conder and H.H. Kitchener, *The Survey of Western Palestine*, II (London, 1882), p. 16.
12. A. Frova, ed., *Scavi de Caesarea Maritima* (Rome, 1966), fig. 9.
13. A. Flinder, "A Piscina at Caesarea–A Preliminary Survey," *IEJ* 26 (1976), 77-80.
14. Cf. the translation of *Antiquities* by R. Marcus, *LCL*, VIII, p. 159, note *e*.

> well suited to be the site of a city, he set about making a magnificent plan and put up buildings all over the city, not of ordinary material but of white stone. He also adorned it with very costly palaces (καὶ διακοσμῶν βασιλείοις τε πολυτελεστάτοις), with civic halls and — what was greatest of all and required the most labour — with a well protected harbour, of the size of the Piraeus.[15]

Similarly, in his *War* he speaks of "the most magnificent palaces" (λαμπροτάτοις ἐκόσμησεν βασιλείοις) with which the king adorned the city.[16] Although we hear nothing of this palace during Herod's lifetime, it is clear that he resided there whenever he visited the city.[17]

What Herod's Caesarean palace looked like is, of course, unknown. It probably was no less imposing than similar Herodian structures in Jerusalem, Masada, Jericho and Herodium.[18] Agrippa I undoubtedly used this same building when he resided in Caesarea. Josephus relates, that when hearing of the king's death the non-Jewish soldiers in his army, then stationed in Caesarea, proceeded to his palace,[19]

> and seizing the images of the king's daughters carried them with one accord to the brothels, where they set them up on the roofs and offered them every possible sort of insult, doing things too indecent to be reported.[20]

It should not at all be surprising that a Herodian ruler, so punctilious in his religious behavior when in Jerusalem, would allow himself such license vis-à-vis Jewish practice when outside Judaea. Agrippa seems to have cultivated the behavior of a Hellenistic king when in Caesarea, as is reflected in his theater appearances and on the coins he minted there.[21] Similarly, although Herod Antipas, Agrippa's uncle and tetrarch of the Galilee and Peraea (4 B.C.E.-39 C.E.), was also scrupulous when in Jerusalem and when minting coins,[22] he, too, gave expression to more worldly proclivities in his palace at Tiberias, including figural representations of animals.[23] These descriptions afford us an idea of the extraordinary magnificence of Herodian palaces in Jerusalem, Tiberias,[24] and Caesarea.

No doubt the praefect-procurator of Judaea, whose official seat was in Caesarea, took up residence in Herod's palace after the year 6, much as he did when visiting Jerusalem.[25] In fact, *Acts* refers specifically to "Herod's praetorium" in Caesarea,[26] and this undoubtedly refers to the palace of Herod which had been converted into a praetorium or residential quarters for the Roman governor.

Our "promontory palace" is indeed a prime candidate for the kind of imposing palatial setting typical of Herod and alluded to by Josephus. As noted above, the setting most befits this king both because of its grandeur, surrounded by the sea on three sides, and by its location vis-à-vis the rest of the city. Both in Jerusalem and Masada Herod appears to have preferred to build his palaces at the outermost reaches of a given site (as on the northernmost tip of Masada or the westernmost part of Jerusalem). The promontory, located at the very southern part of the city, conforms to this pattern as well.

If, indeed, this identification is correct (and our reservations have been carefully enumerated above), the implications for our understanding of the plan of the city and its foci are considerable. Jerusalem was

15. *Antiquities*, XV, 9, 6, 331.
16. *War*, I, 23, 5, 408.
17. Cf., for example, *Antiquities*, XVI, 11, 4, 373.
18. In describing the Jerusalem palace, Josephus says the following:

> Adjoining and on the inner side of these towers, which lay to the north of it, was the king's palace, baffling all description: indeed, in extravagance and equipment no building surpassed it. It was completely enclosed within a wall thirty cubits high, broken at equal distances by ornamental towers, and contained immense banqueting-halls and bed-chambers for a hundred guests. The interior fittings are indescribable — the variety of the stones (for species rare in every other country were here collected in abundance), ceilings wonderful both for the length of the beams and the splendour of their surface decoration, the host of apartments with their infinite varieties of design, all amply furnished, while most of the objects in each of them were of silver or gold. All around were many circular cloisters, leading one into another, the columns in each being different, and their open courts all of greensward; *there were groves of various trees intersected by long walks, which were bordered by deep canals, and ponds everywhere studded with bronze figures, through which the water was discharged*, and around the streams were numerous cots for tame pigeons (*emphasis mine*) - *War*, V, 4, 4, 176-182.

The emphasized section might also be a fitting description of the Caesarean promontory with its deep canals, ponds and drainage system.

19. Following Schalit's interpretation of οἴκαδε, cf. his Hebrew translation of *Antiquities* (vol. 3; Jerusalem, 1963), p. 350.
20. *Antiquities*, XIX, 9, 1, 357.
21. Cf. Levine (above, n. 1), p. 27.
22. Philo, *Embassy to Gaius*, 299-305 and comments by H. Hoehner, *Herod Antipas* (Cambridge, 1972), p. 178, as well as pp. 184ff.; Y. Meshorer, *Jewish Coins of the Second Temple Period* (Tel-Aviv, 1967), pp. 72-75.
23. Josephus, *Life*, 12, 65.
24. *Ibid.*, 12-13, 66-69.
25. R.P.P. Benoit, "Prétoire, Lithostroton et Gabbatha," *RB* 59 (1952), 531-545.
26. Acts 23:35.

Ill. 156. Two Byzantine capitals and columns, possibly part of a monumental structure, embedded in later Crusader wall, facing north.

dominated by two great complexes, the Temple on the eastern ridge, and Herod's palace on the western. Each had its own separate defense system — a wall and the Antonia in the case of the Temple, and a wall and three towers (Phaṣael, Hippicus and Mariamme) for the palace. In addition, each complex had its own water supply, separate ducts and storage system. Similarly, Caesarea would seem to have had two foci: the harbor area with its moles jutting into the sea and its temple to Augustus and Roma, and further south Herod's palace likewise projecting into the sea with a magnificent theater immediately behind it. With this in mind, the southern part of Caesarea between the Crusader city and the theater was probably an important part of the city, and may well have been the site of some of the public buildings mentioned by Josephus. The Joint Expedition's discovery of a series of vaults, one of which served as a 3rd century Mithraeum, further strengthens this supposition.[27]

THE BYZANTINE PERIOD

As has been noted above, it is for precisely this period that archaeological remains provide the most far-reaching corrective to evaluations based solely on literary data and general historical considerations. Byzantine Caesarea was a large city, and its vitality is first and foremost attested to by a number of impressive additions: a new wall, another aqueduct and several imposing Christian buildings. This vitality is also expressed in the attempt to refurbish, restore and re-adapt many of the older structures. The main *temenos* of the city was now the site of a church, and for a time the theater, too, remained in use, although is was now renovated to allow for water games and exhibitions instead of the usual theatrical performances despised by the church. For part of this period the high-level aqueduct was attended to, assuring a steady supply of water to the city.

Continuity with the past is nowhere better expressed than in the impressive "gate-complex" which was discovered embedded in the northeastern corner of the medieval wall (Ill. 156). Although only very partially excavated (to be published separately), its columns, capitals and adjacent structure are nevertheless finds in and of themselves. The architectural elements (especially the capitals) were patently Byzantine in style; yet what gives this material an added dimension of interest is that this structure was built on a main *cardo* of the Roman city, on line with the gate in the Herodian wall to the north, and a large north-south sewage channel, over which a main street

27. See above, ch. I.

undoubtedly passed, to the south. Moreover, the importance of this street is further enhanced by two huge marble pillars which once flanked it and whose remains still tower above ground just to the south of this "gate-complex." (Ill. 157). Thus, it is safe to assume that a Roman street passed along this line and that this plan was followed in the Byzantine period as well.

This element of continuity with the past did not preclude other instances of almost complete reconstruction in the later period, as evidenced in the main excavation area. The Byzantine street was monumental in size as were some of the walls dating from this period. In many cases these were built over Roman remains of the same structures which were often of much more massive construction. This is particularly true of the walls. The extensive Byzantine usage of Roman structures and reconstruction in this area is attested by the fact that in most instances Byzantine structures sat on or very near bedrock or virgin soil. Thus, it seems that during these three hundred years Caesarea was afforded an entirely new look while keeping with the architectural and artistic standards of Byzantine times.

The most impressive of the Byzantine structures found was that containing the mosaic floor and columns, one of which bore the Hebrew inscription "shalom" (Ill. 64). These columns were found among other debris that had evidently fallen from the second floor of the building. The exact nature of this structure has not as yet been ascertained, but the word "shalom" seems to indicate that the building, or at least its second floor, was used by Jews, either as a private home or a communal institution, possibly a synagogue.

If one grants the Jewish character of this building, or at least part of it, the location alone might tell us something about the local Jewish community. Situated on a main street, adjacent to the harbor, it was in as prominent a location as one could hope for in ancient Caesarea. Proximity to a body of water was, of course, not at all strange for the location of an ancient synagogue. Sources attesting to this are well-known.[28] Moreover, a building such as this standing in the center of the commercial area tells us something of the status and interests of the Jews at the time. In two other cities there are indications —one literary, the other archaeological—of a relationship between a synagogue and the economic life of the Jews: Alexandria and Sardis. The Alexandrian synagogue was clearly associated with the various guilds among the Jews of the city, as seating therein was based upon occupation.[29] That of Sardis was located on the main street of the city, adjacent to a series of shops, some owned by Jews, with a direct entrance from these shops to the atrium of the synagogue complex.[30] We know from other sources that the Jews in both these communities, individually and as a group, achieved a remarkably high degree of economic prosperity, political privilege and cultural adaptation. Of course, these two synagogues flourished somewhat earlier than our structure in Caesarea, the Alexandrian one up to the time of Trajan, and that of Sardis during the 3rd to 7th centuries. Thus, if this Caesarean building (or part of it) is indeed a synagogue or any other kind of Jewish communal building, our estimate of the political and economic status of the Jews in the city would be significantly enhanced. All this, of course, assumes

Ill. 157. Remains of a large Byzantine column later included in early Arab wall.

28. *Antiquities*, XIV, 10, 23, 258; Acts 16:13; Philo, *Flaccus*, XIV, 122; *Mekhilta of R. Simeon b. Yoḥai* on Exodus 12:1, eds. Epstein and Melamed, p. 7.

29. *T Sukka* 4, 6, ed. S. Lieberman, p. 273 and parallels.

30. A.R. Seager, "The Building History of the Sardis Synagogue," *AJA* 76 (1972), 425-435.

that we are dealing with a communal institution. Yet even if it is only a private home the implications would be much the same, only on a much smaller scale; the remains would tell us of a prominent Jewish family instead of the community in general.

Ironically, there is almost no archaeological material from the period when the Caesarean Jewish community was enjoying its "golden age," as documented in literary sources. Moreover, we simply do not know the fate of this community in the Byzantine-Arab period. Our literary sources terminate by the mid-4th century and the Jewish community all but disappears from historical view. The claim of later Arab historians that there were 100,000 or 200,000 Jews living in the city when it was conquered in 640 is obviously untenable.[31] Nevertheless, archaeological finds point to the continued existence of the Jews in the city throughout the Byzantine period. Our only archaeological information relating to the Jews as a group in this period is found in a number of funerary inscriptions from a synagogue just north of the medieval city wall, likewise in close proximity to the sea, which flourished from the 4th through the 7th centuries. The exclusive use of Greek in these inscriptions tells us much about the acculturation of the local Jewish community. Taken together with the synagogue, these inscriptions assume an extra dimension of importance and may point to a concentration of Jewish settlement in the northwest part of the city, close to the shoreline.

Not only were there remains of the Hebrew word "shalom" in the Byzantine building itself, but in a second room and in the cellar a number of bowls were found etched or impressed with crosses (see above, Ch. IIIB). Thus it would seem apparent that the building's inhabitants included Christians as well. Either the Jewish and Christian quarters were segregated, or we may have a fascinating instance of ecumenical harmony from 7th century Caesarea!

The small finds from this building are likewise revealing. Some pottery was local, some imported. Included in the latter category was fine ware as well as jars and amphorae from Crete, North Africa and Egypt. Their presence in Caesarea can best be accounted for by the assumption of strong commercial ties. The fact that the last stage of this building can be dated to the mid-7th century indicates the continuation of trade and stability in the region even after the Arab conquest of 640.

Caesarea's prominence on the eve of its fall into Arab hands is noted in the sources. In one context Caesarea is ranked with Jerusalem and Alexandria as bastions of Byzantine rule. In a letter, the Persian monarch Chosroes allegedly taunts the Byzantine emperor, Heraclius, with the following: "You say you have trust in God; why then had he not delivered out of my hand Caesarea, Jerusalem and Alexandria."[32] Moreover, there are several Arab reports of the capture of the city, each vying with the other over who deserves credit for the conquest. Clearly, this hyperbole is partially due to the fact that Caesarea symbolized Christian and Byzantine rule in the Holy Land which the Arabs had now come to replace. In that case, Caesarea the symbol might well have generated some of the rhetoric. Still, it is doubtful if this alone explains these accounts. Caesarea was, in fact, the last city in Palestine to fall into Arab hands, and this only after a seven-month siege and then only by a ruse. "The Muslim sources, therefore, regarded its conquest as the crown of all their military achievements in Palestine, and the early accounts exceeded in number and detail those relating to the conquest of Jerusalem."[33]

THE ARAB PERIOD

Caesarea underwent profound changes under Arab rule. No longer an emporium and capital, the city assumed a reduced physical size along with its diminished political status. A significant re-evaluation in the study of this period may be necessary in light of the dating of the wall of medieval Caesarea. It has long been realized that what is commonly referred to as the Crusader city wall was built in two different stages. Early travellers had noticed this, and Negev added much new evidence in clearing these fortifications. While a few had suggested that the first stage was in fact Muslim, it was generally agreed that both phases date from the Crusader period and that the additions and alterations of the defenses are attributable to Louis IX. A full presentation of the evidence awaits future publication; meanwhile we suggest that the first stage of this wall dates to the early Arab period. Thus, it would seem that the city became drastically reduced in size with the transition from Byzantine to Arab rule, its area retaining about one tenth that of the previous period.

The early caliphs made concerted efforts to fortify

31. Al-Balâdurî, *Futûh al-buldân*, ed. M.J. Goejé (Leiden, 1865), p. 141.
32. Quoted by J. de Haas, *History of Palestine* (New York, 1934), p. 118.
33. M. Sharon, "Ḳayṣariyya," *Encyclopedia of Islam*, IV (Leiden, 1978), pp. 841-842.

the coastal cities of Palestine and Syria. Both 'Umar b. al-Khattāb (634-644) and 'Uthmān b. 'Affān (644-656) supported such activity during their reigns. Many of these cities had presumably suffered during the years of conquest; they were underpopulated as well as in ruins, and the soldiers sent to garrison these towns were given the homes of those who had fled. However this policy of urban renewal was only partially successful. There was even recourse to settling groups of people, especially Persians, in the coastal cities.

The need for fortifications during this period is all too evident from the major threat posed by the Byzantine Empire to the north. The death of the first Umayyad caliph, Mu'awiya (680), introduced a period of turmoil. During these years Byzantine forces swept down the coast, destroying Ascalon, Caesarea, Acre and Tyre.[34] Several centuries later, in 975, the emperor John Tzimisces of Byzantium led an expedition through Syria, capturing Caesarea and other coastal cities. His rule, however, was short-lived.

Caesarea also came under attack from entirely different quarters. Bedouins of Banu Jarrah, taking advantage of the turmoil caused by the Fatimid takeover of Palestine, established themselves (*c.* 971) in the coastal area south of Caesarea, near Ramle. Fifty years later (between 1012 and 1014) they besieged a number of towns and even installed a caliph of their own. This takeover was brief, however, and within little more than a decade Fatimid rule was fully reinstated.

Such circumstances necessitated the protection of Caesarea and, in fact, we have repeated references to the city's fortifications throughout this period. In 985 Mukaddasi speaks of the city's impregnable fortress[35] and in 1047 the Persian traveler Nâsir-I-Khusrau notes its strong walls.[36] When Godfrey conquered Caesarea in 1101 he found the city and its fortifications intact.[37] Moreover, we are explicitly told of the building of fortifications in Caesarea at the turn of the eighth century in the wake of the Byzantine seizure of the city and the whole coastal area. Soon after the Arabs successfully repelled these invaders, 'Abd al-Malik rebuilt both Caesarea and Ascalon and fortified them.

The change to Arab rule was also marked by a radical reorganization within the city itself. The stratum 3 street pattern was altered and, as a result, the plan of the town underwent a significant change. Moreover, in this early Arab period construction was much poorer in quality than in the preceding era, reflecting the neglect and poverty into which Caesarea had sunk at the time.

The destitute state is indicative of the situation of most coastal cities during the 7th to 9th centuries. With the emergence of the Abbasid dynasty centered in Baghdad (763), the situation did not improve. The status of Syria and Palestine declined even further. Iraq and Syria were at odds, and now that the former had assumed center stage, the latter (and Palestine as well) suffered.

With the rise of the Fatimid dynasty in Egypt (969), however, the importance of the seacoast region increased. The Fatimid naval fleet, built to neutralize Byzantine sea power, enabled the rulers of Egypt to fortify and supply the coastal cities despite the chaotic condition in the interior of Palestine during the 10th and 11th centuries. Towards the end of the 10th century and throughout the 11th, the economic and military importance of the coastal cities increased. Trade with Italian cities, especially Venice and Amalfi, breathed new life into this region.

As noted above, a second and later stratum (stratum 2) dates to this period, and the change is indeed striking. Caesarea appears to have once again enjoyed considerable prosperity, although far below the level achieved during the first half millennium of its existence. Little attempt was made to return to the earlier town plan. Construction at this stage was far superior to that of the early Arab period. The well-built courtyards and private homes and the rather sophisticated system of pipes leading to numerous cisterns attest to the relatively high level of material achievement during the 10th to 12th centuries. Together with the wells, the many cisterns indicate that the inhabitants at this stage were totally dependent on local water resources. The aqueducts which had already been failing in the late Byzantine period were clearly out of commission by this time.

Caesarea's increased good fortune is reflected in other data as well. Although never a center of Islamic studies, tradition preserves the names of several

34. A. El'ad, "The Coastal Cities of Palestine during the Early Middle Ages," *The Jerusalem Cathedra* 2 (Jerusalem, 1982), pp. 146-159.
35. Mukaddasi, "Description of Syria, Including Palestine," *PPTS* 3:3 (1896), 55.
36. Nâsir-I-Khusrau, "Diary of a Journey Through Syria and Palestine," *PPTS* 4:1 (1893), 20.
37. *William of Tyre*, A History of Deeds Done beyond the Sea, trans. E.A. Babcock and A.C. Krey (New York, 1943), I, p. 435.

"ulama" who lived and taught in the city.[38] Moreover, traces of a copper industry were found in excavations within the Arab city, and hoards of gold and silver coins as well as gold ornaments attest to a degree of wealth enjoyed by at least some of its inhabitants.[39] The report that the aroma of spices dominated the city's air may also support this notion.[40] A certain prosperity is confirmed by accounts of the enormous wealth found by the Crusaders upon entering the city.[41] The various descriptions of Arab Caesarea by the 10th and 11th century travellers dovetail nicely with the archaeological remains from stratum 2a.

The recovery of Caesarea in these centuries does not appear to have been an isolated phenomenon. Under Egyptian rule from the late 9th century on, whether it be of the Tulunid, Ikhshidid or Fatimid variety, Palestine enjoyed an upsurge economically and politically. The Tulunids, for example, built an artificial harbor in Acre during the 9th century.[42] We also have some information regarding the local Jewish community; it was during this time that Palestinian Jewry attempted to assert itself with regard to Babylonian domination.[43] The Karaite movement, which became Palestinian-centered during the 10th century, was in fact a protest movement aimed at Babylonian Jewish leadership, and this new development may have been influenced by the increasing independence of Palestine from the Baghdad-centered Abbasid rule. Even within rabbinic ranks an attempt was made in 10th-century Tiberias, under the leadership of Ben Meir, to assert Palestinian independence vis-à-vis the Babylonian academies with regard to the fixing of the calendar, a right which carried with it far-reaching religious prerogatives. The founding of a Palestinian *gaonate* was another expression of the reassertion of the local Jewish community vis-à-vis the Babylonian center to the east. Thus, the resurgence of Caesarea can be viewed as but another example of the prosperity and increasing self-consciousness enveloping the country as a whole.

THE CRUSADER PERIOD

Caesarea fell to the Arabs in several stages. Baldwin arrived in the city on his way to Jerusalem, purchasing there bread and cheese. In 1100, delegations from Ascalon, Acre, and Caesarea came to Godfrey, bringing horses and other gifts, as well as a commitment for a monthly tribute in return for immunity from attack. Baldwin subsequently found cause to besiege the city, destroying its orchards and gardens in the process. The actual conquest is described in the bloodiest of terms, but this may be due to the particular penchants of the writers of our sources. As the Crusader kingdom stabilized and expanded, Caesarea became the home of a thriving Christian community.[44]

From all accounts, Crusader Caesarea flourished in the 12th century. From 1101 until 1187 the city enjoyed peace and relative prosperity. It is sometimes described during this period as a large town, having a populous suburb and a truly wonderful harbor. This is clearly an exaggeration, and the most that can be said is that Caesarea was a thriving city, with strong walls and a citadel, but with a mediocre port and covering an area of only thirty acres. In 1187 the city was overrun by the Moslems and in 1191 it was razed and abandoned. For almost forty years it held only a small population. Yakut in 1225 notes the following:

> It used to be one of the chief cities, very superior, with good soil, abounding in goods and in inhabitants. But now, it is no longer thus; it appears more like a village than a city.[45]

Only in 1228 did the Crusaders resume their settlement of the city and begin the long process of rebuilding. However, it was only with the advent and vigorous participation of Louis IX in 1251 that work was completed on the walls and citadel. The city was conquered and destroyed for the last time in 1265.

Archaeological finds highlight two aspects of Crusader Caesarea. First, the variety of ceramic remains indicates a relatively flourishing life in the city. Secondly, many of the buildings from the earlier Fatimid era continued to stand, representing stability and continuity with the past. Thus, the generally positive condition of the city at this time as known from literary sources finds expression archaeologically. What is not in evidence are traces of the vicissitudes through which the city went during these 150 years. This, however, may be due to the limited area excavated.

38. Cf. above, n. 33.
39. Cf. ch. 1, nn. 38-39; S. Levy, "A Hoard of Abbasid Coins from Caesarea," *Eretz Israel* 7 (1964), 47-68 (Hebrew); M. Benvenisti (above, n. 7), p. 136; Ringel (above, n. 1), p. 166.
40. Fetellus, "Description of the Holy Land," *PPTS* 5:1 (1896), 47.
41. H. Hazard, "Caesarea and the Crusades," in: *The Joint Expedition to Caesarea Maritima*, ed. C.T. Fritsch (Missoula, 1975), I, p. 83.
42. J. Prawer, *The Latin Kingdom of Jerusalem* (London, 1972), p. 18.
43. S. Baron, *A Social and Religious History of the Jews* (Philadelphia, 1957), V, pp. 24ff., 222ff.
44. See generally, Hazard (above, n. 41), pp. 79ff.
45. As quoted by Hazard (above, n. 41), p. 87.

APPENDIX

SURFACE-FINDS FROM CAESAREA MARITIMA–TESSERAE*

A. Hamburger

Publication of A. Hamburger's article on the Caesarea tesserae is long overdue. Slated for publication already in the late sixties, this important material was held up due to a series of unfortunate circumstances. We are pleased to include this study in our publication. These Caesarea tesserae are new, never having been published nor studied. Since this type of material has been sorely neglected in general, the finds presented below assume an even greater importance.

Among the various surface-finds from Caesarea Maritima are a great number of tesserae, mostly of lead. The tesserae were recovered on the site over the past fifty years, and although they are dispersed among several collections,[1] I have tried to compile as complete a list as possible. This article is an attempt to present and evaluate the evidence.

Tesserae may be defined as small, rounded, angular or irregularly formed pieces of metal—either minted or cast—supplied with a design on one or both sides. The origin of tesserae has been traced to Greece, where seal impression on wax, pottery, or lead were used as identification signs and called *σύμβολον*.[2] In Greece they had already developed into a versatile tool of administration. In Rome they were introduced under Augustus (or perhaps somewhat earlier) and used for the distribution of grain and money (*frumentationes*).[3] They were taken over by the Senate as a convenient means for the regulation of allocations to the militia and the plebians.[4]

Tesserae spread to every facet of life. In addition to being used for public *frumentationes*, they served as entrance tickets to the theater (a custom originating in Greece), the circus, games and races,[5] all of which had once been free for Roman citizens. Responsibility for the organization of games had become a duty which the wealthy could not evade without sufficient reason. These games constituted a heavy drain on the Roman *aedile*, the public officer responsible for their arrangement. The burden was only slightly eased by fiscal compensation,[6] and thus tesserae were used as entrance tickets for spectators.[7] It is not surprising, then, that mention of selling seats is made as early as the 2nd century B.C.E.[8]

At public spectacles it was customary to distribute gifts to the spectators. This was often done by throwing tesserae to the masses, the so-called tesserae missiles, which entitled the recipient to a gift of grain, oil, wine, money, full meals and, *inter alia*, the right to visit a prostitute.[9] These special tesserae were not

* Plates for this section on pp. 202-204.

1. The author was most generously assisted by the cooperation of several private collectors, namely Mrs. Better, Mrs. Fraenkl, Mrs. Mia Josef, Mrs. Ruth Levi, Mr. B. Oestreicher, the late Mr. B. Rabani, the late Mr. M. Redner, and Mr. A. Wegman of Kibbutz S'dot Yam, who for years informed the author of their new finds and lent their collections for prolonged periods for study, and by Mr. E. Link, who provided an electrolytic copy of a most interesting specimen, the main find of the "sea-diver" expedition to Israel in 1960. I also wish to thank the Department of Antiquities in Jerusalem, Museum Beth Chana, S'dot Yam, and the Kadman Numismatic Museum, Tel-Aviv, who entrusted me with their collections. I am very grateful to the late Professor I. Ben-Dor of Atlanta, U.S.A., the late Dr. P. Kahane of the Department of Antiquities, Dr. I. Schatzmann of the Hebrew University of Jerusalem, and Professor H. Seyrig of Beirut for suggestions and references and for the providing of literature.
2. M. Rostovtzeff (Rostowzew), *Römische Bleitesserae* (Leipzig, 1905), p. 5.
3. *Ibid.*, p. 38.
4. *Ibid.*, p. 38.
5. Ibid., p. 51.
6. L. Friedländer, *Roman Life and Manners under the Early Empire* (4 vols.; New York, 1968), II, pp. 1-130 and esp. pp. 9-11.
7. Rostovtzeff (above, n. 2), p. 45.
8. Plutarch, *C. Gracchus* 12, 3.
9. Rostovtzeff (above, n. 2), p. 56; Friedländer (above, n. 6), pp. 1-130 and esp. p. 15; Pauly-Wissowa, *Real-Encyclopädie der*

only issued for one specific purpose, but could also be redeemed by the issuers. Thus the same tesserae might serve various public purposes,[10] a fact which complicates their identification for the modern student.

Not only were tesserae used for public functions, but also for privately sponsored occasions. For example, the so-called "Juventus" tesserae series were issued for the private games of aristocratic youth held in Rome.[11]

In addition, private donors distributed wine, money and grain at feasts with tesserae. The many societies (collegia, professional guilds, burial societies for the veneration of a god, social clubs) held dinners and distributed tesserae on the new year or on the birthday of the emperor.

Tesserae were the medium of organization.[12] Every guest at a meal and recipients of donations needed a tessera to enable him to participate at various functions.

Further, the scarcity of small change led to the use of tesserae as a substitute currency, a custom which became quite widespread. Substantial households with many economic activities issued their own private currency for domestic use. Tesserae were also used for private accounting purposes by merchants and owners of boats, bath houses and taverns. In short, everybody's issuance and handling of tesserae account for the great number of such finds in Rome.[13]

CHOICE OF MOTIFS

The motifs on Roman tesserae are often modifications or copies of coin or gem prototypes. However, they may also be unrelated, bearing *types parlantes*,[14] initials or numbers, and other kinds of symbols. The great similarity of motifs in every craft which had need of engraving or moulds gave rise to the theory that model-books were current at that time, from which these designs were taken.[15] It is also possible that engraving, die-cutting and execution of moulds were not really separate professions, but that the same craftsmen used their skills whenever the demand arose, be it gem, coin or tessera. This would also account for the striking similarity in details of these diverse items. The coin-resemblance of tesserae is pointed out in every publication, and Martial even calls them *nomismata* and mentions *lasciva nomismata*, probably tesserae showing erotic scenes.[16] The resemblance to gems is more marked in the series used for the theater and circus. But one should never forget that tesserae are the most primitive branch in the art of diminutive engraved objects. One cannot expect the same degree of craftsmanship in lead tesserae as in bronze coins or gems. Obviously very little labor went into their execution. Familiar motifs often deteriorated into mere symbolic representations. Despite these limitations craftsmen nearly always managed to convey the desired impression. Problematic motifs may also be due to the fact that lead is a soft material, thus wearing more quickly than the harder bronze, and original execution was often sloppy with part of the design appearing on the flan.

We rarely find inscribed tesserae from Caesarea. Even where an inscription occurs it does not necessarily give a clue as to the use of the tessera. It is assumed that the so-called "official" tesserae in Rome were executed in mints, probably because they often show the motif of one side of a coin on both the obverse and reverse of the tessera.[17]

The number of tesserae from Caesarea which can be compared with local provincial coinage is very small. However, this is true not only of Caesarea, but also of the collection of tesserae at the Bibliothèque Nationale in Paris published by Rostovtzeff and Prou.[18] All these shortcomings cause additional difficulties in identification.

Tesserae might have been used for the following purposes in Caesarea:

1. *Public distribution of grain and oil.* Such activity was not unknown to Herod, founder of Caesarea. During the famine of *c.* 25 B.C.E. he distributed grain brought from Egypt.[19] His grandson, Agrippa I, distributed grain and oil in nearby Berytus during the annual theater performances.[20] The inauguration fes-

Classischen Altertumwissenschaft (31 vols.; Stuttgart, 1894-1938), V, A, pp. 851ff.; Martial, VIII.78.9 as referred to by H. Mattingly, *Roman Coins* (London, 1928), p. 120, n. 1a.

10. Rostovtzeff (above, n. 2), p. 38; see also below, n. 46.
11. *Ibid.*, pp. 87ff.
12. *Ibid.*, pp. 98, 103.
13. *Ibid.*, pp. 106-112, 149-150.
14. *Ibid.*, p. 107.
15. Pauly-Wissowa (above, n. 9), XVI, 1, p. 486; J.G. Milne, "Pictoral Coin-Types at the Roman Mint of Alexandria: A Second Supplement," *Journal of Egyptian Archaeology* 37 (1951), 102.
16. See Martial (above, n. 9).
17. Rostovtzeff (above, n. 2), pp. 11-18.
18. M. Rostovtzeff and M. Prou, *Catalogue des Plombs de l'Antiquité* (Paris, 1900).
19. *Antiquities*, XV, 9, 2, 305ff.
20. *Ibid.*, XX, 9, 4, 211.

tivities of Caesarea[21] probably involved the distribution of grain and oil, and undoubtedly tesserae were issued. Thus we may well expect to find tesserae for *frumentationes* in Caesarea.

2. *Theater and circus.* The abovementioned inauguration festivities took place in the theater and hippodrome. We are told of musical contests, gymnastics, gladiators, wild beasts, and horse and chariot races there.[22] The *ludi circenses* of Caesarea were still mentioned in the 4th century C.E.[23] We may therefore expect that tesserae were used in these places.

3. *Gifts to the spectators - tesserae missiles.* Josephus tells of the generosity of Herod, who is reported to have tried to surpass everything previously known. Such lavishness was aided by Augustus who paid the expenses of the inauguration festivities of Caesarea named in his honor. Moreover, his wife Livia had also sent many of her greatest treasures from Rome.[24] We may therefore presume that the common practice of awarding presents to spectators was followed. Tesserae valid for visits to prostitutes were usually among such presents. We find a reference to the existence of brothels in the description of the hostilities in Caesarea following the death of Agrippa in 44 C.E. Pagan soldiers broke into the palace of the deceased, and robbed the statues of his daughters, which they put—as an extreme insult — on the roofs of the brothels.[25]

4. *Private distributions - Collegia.* Donations of wine, money, and other commodities at festive occasions were common in a provincial town under Roman rule. Collegia undoubtedly existed in Caesarea, as in the rest of the Roman empire. Tesserae were used for funerary purposes and for the organization of banquets and charity distributions.

5. *Substitute currency.* The acute scarcity of small change in Caesarea led to the minting of *minimi*, diminutive coins of small denominations.[26] The same conditions which led to these issues often prompted the use of tesserae, as had been the case in Rome.[27]

DATING

Fixed time limits are available for the dating of tesserae from Caesarea. They could not have been issued later than 640 C.E., after the town fell into Arab hands. It is possible to trace tesserae modelled after coins to 3rd-century C.E. Rome.[28] Rostovtzeff does not hesitate to date them according to their respective coins and heads of emperors, while Hill states as a rule, that imitations of coins are usually made when the originals are no longer issued and became scarce.[29] Milne, too, thinks that it need not be assumed that these tesserae were contemporary with the issues of the coin from which they were copied.[30] But are we really impelled to assume that craftsmen making tesserae, or the patrons who chose the designs, went out of their way in order *not* to use familiar coin patterns? Perhaps the coins of outdated currency were used as models,[31] but as a rule tesserae were probably inspired by contemporary coinage. These tesserae never attempted to duplicate the coin; only part of the design was used,[32] usually on a very small scale; and they were minted in lead. It is improbable that the tesserae designs were based upon coins which were no longer in use and hard to come by. As a rule, we can probably rely on coins models current in Caesarea or the vicinity. The most likely exceptions are in cases where a special event or aspect of city-life is depicted.

DISCUSSION

No. 1 could possibly be a tessera for the distribution of grain.[33]

The design of Nos. 2 and 3 belongs to the group of motifs connected with the distribution of oil, wine, and grain. The locust, here very perfunctorily represented, is a so-called "grain animal." The provinces which supplied the grain for the rest of the Roman empire were symbolized by animals (elephant, rhinoceros, parrot, rabbit, Ephesian fly, etc.). Roman tesserae used for *frumentationes* depict additional animals which live in the grain fields: the ant,[34] locust,

21. *Ibid.*, XVI, 5, 1, 136-141.
22. *Ibid.*
23. *Expositio totius mundi et gentium*, 132, ed. and trans. J. Rougé, *Sources chrétiennes* 124 (Paris, 1966), pp. 164-166.
    Habes ergo Antiochiam quidem in omnibus delectabilibus abundantem, maxime autem circensibus...Ecce similiter Laodicia circenses et Tyrus et Berytus et Caesarea...
24. *Antiquities*, XVI, 5, 1, 139.
25. *Ibid.*, XIX, 9, 1, 357.
26. H. Hamburger, "Minute Coins from Caesarea," *'Atiqot* 1 (1955), 115-138.
27. Rostovtzeff (above, n. 2), pp. 106-112, 149-150.
28. *Ibid.*, p. 39; Pauly-Wissowa (above, n. 9), V, A, 1, p. 853.
29. G. Hill, "The Shekels of the First Revolt of the Jews," *QDAP* 6 (1938), 78-83.
30. J.G. Milne, "Syriac Substitute Currencies," *Iraq* 6 (1939), 93.
31. Hamburger (above, n. 26), 130, Nos. 62-63.
32. Rostovtzeff (above, n. 2), p. 117.
33. *Ibid.*, p. 10.
34. G.M.A. Richter, *Catalogue of Engraved Gems: Greek, Etruscan, and Roman* (Rome, 1956); Pl. XLV:345 depicts an ant

lizard, snail, etc.[35] This symbolism was firmly rooted in all branches of the craft producing small engraved objects.[36] The form of the *kantharos* — though the handles are here omitted — was used on coins of the procurators during the time of Tiberius.[37] (The coins are dated the fourth year of the reign of Tiberius, i.e., 17/18 C.E.) Perhaps the tesserae were issued for distributions in the 1st century. The "K" might mean twenty units of the distributed medium.[38] The griffon or Pegasus belongs to Apollo, patron of the theater (see below).[39]

No. 4 is probably also a distribution tessera.[40] The head seems to represent Apollo.

Nos. 5 and 6 show Romulus and Remus, a widespread coin design. This motif is found among the surface-finds of coins of Constantine. Romulus and Remus appear on issues of Aelia Capitolina in the reigns of Domitian and Elagabalus.

The scorpion on tessera No. 7 is to be understood as an astrological sign, the constellation under which Tiberius was born and the sign which he bestowed upon his military guards, the Praetorians, When these guards drew their rations (the *frumentum publicum*) tesserae depicting the sign of the scorpion were employed for the organization of their delivery.[41] The reign of Tiberius may have influenced the choice of the motif in the provinces, too. This would date the tesserae to the 1st century.

Nos. 8-14 show the type of the short-clad city goddess standing on a prow, the same motif as on coins of Hadrian from Caesarea and neighboring mints.[42] No. 10 has a lion on its reverse, suggesting the probability that the whole series belongs to the games. The term "city goddess" seems to be inadequate for the representation of this type. In this period of syncretism we have to think of the city goddess as representing Tyche, Fortuna, Isis, and sometimes with added features of Demeter, Nemesis, and Athena. On the other hand, one goddess is represented with a short chiton and may be Artemis, the goddess of the hunts, the *venationes*.[43] On No. 8 she holds what is unmistakably a bow. Nos. 9 and 10 are less clear, but there seems to be a bow on these as well. An animal is depicted on the reverse of No. 10. This "city goddess" certainly had the prominent features of Artemis; this could be true also for the Caesarea coinage bearing her image.

Nos. 15-19 show the Ephesian Artemis, of whom a cult statue was discovered in the Caesarea theater. No. 15 shows the type in mummy binds, as on the coin of Faustina Junior from Neapolis.[44] On Nos. 17-19 the image of the Ephesian Artemis may be discerned in crude outline. If Tyche-Artemis was the patroness of the games, the Ephesian Artemis must belong there, too.

Nos. 20-30 all depict animals,[45] which the author ascribes tentatively to the circus. The crab of No. 22 is one of the astrological signs popular during these centuries, as well as the bull which, however, could also depict one of the animals taking part in the games.[46] Nos. 24 and 25 are of the same mould. No. 24, which is clearly defined, received the upper part of the design on the preserved flan, while No. 25 shows the lower part — the mould having become very worn.

Nos. 31-33 depict a *retirarius* or a fisherman throwing a net.[47] It is not clear whether the reverse sides depict the head of an animal[48] or a plant.

belonging to Demeter.

35. Rostovtzeff (above, n. 2), p. 37 proposes that these animals be considered "grain animals."
36. The symbolization of these animals with grain is frequent, particularly on gems. See A. Furtwaengler, *Die antiken Gemmen* (Berlin, 1900), Pls. XIV:67, 68; XXIX:15; XLV:58; XLVI:38, 46.
37. A. Reifenberg, *Ancient Jewish Coins* (Jerusalem, 1940), Pl. IX:126; G.F. Hill, *BMC-Palestine*, Pl. XXVIII:13.
38. See discussion of tessera No. 55a.
39. Rostovtzeff (above, n, 2), p. 33.
40. *Ibid.*, p. 30 mentions the palm tree, "für frumentationes und Schauspiele"; see also Pl. I:5.
41. *Ibid.*, Pl. I:13, p. 35.
42. Hill (above, n. 37), Pls. III:7, VI:9ff.
43. Rostovtzeff (above, n. 2), p. 49. The personification of Roma is also represented with short chiton. However, we may not assume that images other than the Tyche of Caesarea appear so frequently on coins or tesserae from the city.
44. Hill (above, n. 37), Pl. VI:5-7.
45. For the camels of Nos. 28 and 29, see H. Ingholt, H. Seyrig, and J. Starckey, *Receuil des Tessères de Palmyre* (Paris, 1955), Pl. 10:176. For the elephant, see Rostovtzeff and Prou (above, n. 18), Pl. IV:18.
46. Rostovtzeff (above, n. 2), p. 54 mentions tesserae with horses, the names of which are inscribed on the tesserae. Pl. II:2 shows on both sides a venator fighting with an animal, with the contremark *sot*... (defunctus). Rostovtzeff explains that the tessera was used twice, and that the death of the venator was noted on it. It then served as an advertisement for the games and the animal, who appeared for the second time. Rostovtzeff (p. 52) interprets a tessera inscribed *die I* (primo) as belonging to the theater, apparently for the first day. Perhaps the Δ on No. 23 should be understood that it was valid for the fourth day of the games.
47. Friedländer (above, n. 6), pp. 1-130.
48. Rostovtzeff and Prou (above, n. 18), Pl. III:5 shows the head of a bull facing front, which bears some resemblance to Nos. 31-33.

No. 34 could be understood as an astrological sign.

No. 35 has on one side a Nike with a *biga*, and on its reverse an amphora, indicating use in the circus and for distributions of wine or oil. The amphora shows a striking likeness to a coin minted in Jerusalem during the First Revolt.[49] Such coins were found in Caesarea as well. The amphora is understood to represent one of the temple vessels of the defeated enemy.[50] Is it possible that tesserae served propaganda purposes?[51]

Nos. 36 and 37, bearing race horses and Nike, were used at circus events.

Nos. 38-41 should be considered a group. All the specimens depict a divine (or royal) rider with a spear under one arm, one hand raised in salute, and a defeated animal below. The reverse of one piece shows a reclining figure. The motif of the "rider spearing an enemy" came into use at the end of the 3rd century C.E. and was a popular design in the ensuing centuries.[52] It is found on Constantinian coins,[53] and was often used on amulets, representing there "King Solomon" who overcomes Evil.[54] The slain enemy may be a human foe or the "Evil" represented as female. The animal points to the *venationes*. The rider is Helios raising one hand in salute.[55] The reclining figure on No. 38 is treated below in the description of Nos. 50-57. In light of the above considerations, this tessera can be dated to the 4th century on.

Nos. 42-45 all have masks and seem to be theater tesserae. No. 44 depicts three faces combined in one in the manner of a gryllus. The animal on No. 42 may indicate that games, too, were part of the day-long theater program.[56]

No. 46 is ascribed to the theater because of the griffon-Pegasus[57] appearing there and which occurs already on No. 2. Both tesserae depict Pegasus accompanying Apollo and Nemesis, as well as Artemis. Though the beardless youth on the reverse has a caduceus, it is not certain whether he represents Hermes here. The caduceus was given to many gods, and here the combination with the griffon or Pegasus makes it probable that the head should be identified as Apollo.[58]

No. 47 bears the inscription: GPMEVL I, and is presented here, very tentatively, based on some Roman tesserae with similar abbreviated inscriptions.[59] We find there CP — Claudius Procurator, APPRO — Appius Procurator, and TICP — Ti. Claudius Procurator. Rostovtzeff interprets them as issued by *procuratores ludorum* or *munerum et venationem*,[60] who had to fulfill the *cura ludorum* since Augustus.[61] The title of *procurator ludorum* is known to us from Rome, and we have no references to its use outside of Rome. Thus there is a remote possibility that the title *Procurator munerum et venationem et ludorum* could have been used by a procurator of Judea, Gessius Florus, who was in office under Nero in 64-66 C.E., although we know that procurators of Judea struck coins, and that plays were arranged in Caesarea. The interpretation of our tessera would read as follows: G/essius P/rocurator M/unerum[62] E/t V/enationem (et) L/udorum. The letter "I" could possibly mean that the tessera was valid for the first series of the games.

The letters ΔIOC here could mean "of Zeus," and would then probably refer to games or to a banquet given in honor of Zeus. It could also refer to the name of the first month of the Macedonian year. In this case it would signify the time when the tessera became valid.

No. 50, placed at the beginning of a series, depicts a reclining god or goddess represented either in full or to the hips, with cornucopiae and/or animals. The motif is taken from the Egyptian imagery and represents Nilus-Sarapis and Euthenia-Isis-Tyche respectively. In my opinion it could be called the "Sea-god"

49. Reifenberg (above, n. 37), Pl. XI:147a; Hill (above, n. 37), Pl. XXX:II.
50. P. Romanoff, *Jewish Symbols on Ancient Jewish Coins* (Philadelphia, 1944), p. 28: "All emblems of the coins were used in the temple."
51. This was usual on Roman Imperial coins. The reverses served as a means of publicity and propaganda.
52. C. Bonner, *Studies in Magical Amulets* (London, 1950), p. 221.
53. H. Goodacre, *The Bronze Coinage of the Late Roman Empire* (London, 1922), p. 18.
54. Bonner (above, n. 52), p. 209.
55. R.S. Poole, *BMC-Alexandria*, Pl. III:413 shows Helios on horseback to left, with scepter and one hand raised (by Trajan). It is possible, though, that Helios here stands for Apollo or Sarapis-Zeus; cf. M.P. Nilsson, *Geschichte der griechischen Religion in Handbuch der Altertumwissenschaften* (Munich, 1950), II, p. 490, n. 3.
56. Rostovtzeff and Prou (above, n. 18), Pl. III:18 shows a tessera with mask and animal. Pl. XII:14 depicts grylli on both sides.
57. Rostovtzeff (above, n. 2), p. 33 calls it "apollinischer Greif."
58. Rostovtzeff and Prou (above, n. 18), Pl. XII:14 shows the head of Apollo with palm, and on the other side a griffon or Pegasus.
59. The superfluous stroke on the V looks like an error of the engraver.
60. Rostovtzeff (above, n. 2), p. 50.
61. *Ibid.*
62. *Ibid.*, p. 49. The tessera in pl. I:18 is to be read CVR(ator) M(uneris).

because in Caesarea it could not have the meaning of "River-god." No. 50 differs in style from Caesarea tesserae in general, as well as from the sea-god group in particular. Perhaps a foreign craftsman had been employed here.[63] The pile of rocks below the reclining figure represents the first cataract of the Nile on Alexandrian coinage. No parallels have been found of the cross-legged sitting figure on the reverse side. It has many components of the snake-legged IAO, called by Bonner the "Anguipede," though the representation is entirely different.

No. 51 is the only large tessera. The serpent coiled on the back of the horse on Alexandrian coins is called Agathodaimon by Hill,[64] but is referred to by Head as the Asclepian serpent on a coin from Philadelphia, Lydia[65] where there is a connection with the Asclepian horse races.

No. 52 bears a *biga* with Nike as a driver, No. 53 a rider with caduceus, No. 54a Zeus holding Nike, No. 54b Triptolemus with sea monsters. No. 55a depicts a harbor with two ships, and No. 55b Demeter with torch, serpent, ears of corn, and poppies.[66] The sea god on No. 56 is holding an elephant, which could be a grain animal as well as a circus animal.[67] Its reverse shows Eros embracing Psyche.

Nos. 52-56, with the exception of No. 55b, are of silver alloy.[68] Though tesserae of silver seem to be hitherto unknown,[69] the above specimens are certainly tesserae. They are much too small to be medals, and the manner of the execution of Isis and Nilus suggests that they were perhaps imported from Egypt. All are of the same style and were certainly executed at the same period. They all show motifs of the theater or circus, except for No. 55a depicting the harbor. Silver tesserae have not been found elsewhere. Why, then, were they issued in a provincial town? Herod presented glamorous plays at the inauguration festivities and arranged for the repetition of these plays "every fifth year."[70] One receives the impression that these games were held at the inauguration for the very first time, and it seems reasonable to expect that all the silver tesserae were issued on that very special occasion. The more so as the harbor tesserae seemingly were issued following the inauguration, as hinted at by their date, the 192nd Olympiad, mentioned by Josephus as the time of inauguration.[71] However, this had not been the first silver issue; one of the silver tesserae is dated four years earlier!

Besides these two dated silver tesserae there is one made of lead which is dated four years later than the harbor tessera, indicating that an event which prompted the issuance of tesserae recurred every four years — most probably the games mentioned by Josephus. The following conclusions may be suggested: (1) The regular intervals point to the recurring event of the plays. (2) The harbor tessera[72] must be conclusive for dating the inauguration in the year 11/10 B.C.E.[73] (3) The plays held at the inauguration were probably the first ones ever to be held in the city. (4) Herod distributed silver tesserae four years earlier.

63. The sea god bears some resemblance to the representations of the river god Belus on coins of Ptolemais; cf. L. Kadman, *The Coins of Akko Ptolemais* (Tel-Aviv, 1961), Pl. XV:218, 219 of Philip Junior. It is also reminiscent of the reclining figures often depicted on tesserae from Palmyra; cf. Ingholt *et al.* (above, n. 45), Pl. XLVIII:1118b, which shows a Nilus.
64. Poole (above, n. 55), p. 159, No. 1308.
65. B.V. Head, *Historia Numorum* (Oxford, 1911).
66. Hill (above, n. 37), Pl. IV:16 shows Demeter, holding a scepter around which coils a serpent (from Caesarea, by Trebonius Gallus), G.F. Hill, *BMC-Phoenicia*, Pl. XLIII:5 has a Demeter with a serpent around her torch (from Sidon, by Severus Alexander). Demeter with Modius and ears of corn appears frequently on coins of Alexandria; cf. Poole (above, n. 55), Pls. XXII:478 (by Trajan) and II:576 where she is veiled (by Hadrian).
67. See discussion of grain animals, pp. 189-190 and n. 45.
68. My thanks are due to Dr. H.R. Cramer, Professor of Geology, Emory University, for examining tessera No. 52 and identifying the material as cerargerite — silver plus added chloride (probably due to prolonged lying in wet surroundings).
69. My thanks are due to Mr. R.A.C. Carsen, British Museum, London, Dr. Guido Bruck, Bundessammlung von Medaillen, Münzen und Geldzeichen, Vienna, and Mr G. Le Rider, Bibliothèque Nationale, Paris, who ascertained for me that no silver tesserae are in their collections.
70. *Antiquities*, XVI, 5, 1, 138.
71. *Ibid.*, 5, 1, 136.
72. No. 55 is the main find of the Link Expedition, which found this tessera submerged in the harbor of Caesarea. It may be considered the most interesting piece presented in this article.
73. This interpretation is contrary to that of E. Schürer, *The History of the Jewish People in the Age of Jesus Christ,* revised ed.; G. Vermes, F. Millar (Edinburgh, 1973), I, p. 306 who dates the inauguration to the year 10/9 B.C.E. M. Avi-Yonah, "The Foundation of Tiberias," *IEJ* 1 (1950-1951), 169 proposes that this occurred in the year 13/12 B.C.E. B. Oestreicher, who previously published tessera No. 55 in "A Contemporary Picture of Caesarea's Ancient Harbour," *Israel Numismatic Bulletin* 2 (1962), 44-47 also reads the year as "21" but concludes that this was 9 B.C.E. His drawing of the very worn sea god is not quite correct.

Description of the three dated tesserae
(The dates are according to the Actium era)

No.	Date	Actium Year	Year (B.C.E.)	Motifs	Material
54b	LIZ	17	15/14	Triptolemus–sea god	silver
55a	LKA	21	11/10	Harbor–sea god	silver
55b	LKE	25	7/6	Demeter–sea god	lead

Triptolemus, who was sent by Demeter to introduce grain to mankind, as well as Demeter herself, are motifs suitable for distributions which habitually took place during plays. Apparently there were a number of silver tesserae, either for especially honored guests or for particularly valuable gifts. Their use as keepsakes is improbable because of their insignificant size. The holes are not secondary additions; Dr. Kindler of the Kadman Numismatic Museum suggests that the holes could have facilitated stacking during distribution and after their recovery for reuse.

The sea god Sarapis, and the cornucopia from which the genius of plenty emerges,[74] as well as Isis-Tyche, appear to be the symbols of the newly founded harbor town. These occur on coins of Caesarea in their conventional representations as busts of Sarapis and Tyche. No 55b depicts Demeter, who was identified with Isis and is known from 2nd and 3rd century C.E. coins.[75]

The motif of Eros embracing Psyche is known from gems.[76] It is often engraved on love charms, as described in detail in Greek magic papyri.[77] This is unusual on tesserae and does not occur elsewhere, as far as I am aware. It may be ascribed somewhat tentatively to a prostitution group. This is based on two considerations: (1) An embracing couple is making love. (2) The motif is used on amulets in order to induce love. Thus, the ascribing seems convincing even if the design is different from those used in Rome.[78]

No. 59, although very small, is as distinctly erotic as No. 60, though both partners are winged. If tesserae were at all intended for prostitution, these are the most likely to have served this purpose. No. 60 belongs to the so-called *spintrae* (tesserae depicting "obscene" motifs), probably the *lasciva nomismata* of Martial, who writes that these were thrown to the spectators at the theater.[79] It differs not only in size and material, but most of all in style and execution, from the Caesarea tesserae, and must have been imported. The numbers on the reverses of these tesserae are reported never to be higher than XVI, and sometimes have an "A" added. Differing opinions have been expressed about the meaning of these numbers and the general use of the *spintrae*. They have been assumed to represent theater tickets, brothel tesserae, and tokens. The most convincing explanation seems to be that the numbers represent asses (16 asses = one denarius).[80] As these Roman numbers occur also on tesserae portraying the heads of emperors, dice-players, and circus designs, it seems that all the tesserae with numbers should be ascribed more generally to the group "gifts to spectators" which could be exchanged, according to their value, for gifts of different values, among them prostitutes. The author thinks it probable, too, that the erotic scenes were directed more generally for the purpose of pleasing the recipients.[81]

74. Poole (above, n. 55), p. 92, No. 783; Rostovtzeff and Prou (above, n. 18), Pl. III:5, 7; Rostovtzeff (above, n. 2), pp. 49-50.
75. See above, n. 66.
76. H.B. Walters, *Catalogue of Engraved Gems and Cameos, Greek, Etruscan and Roman, in the British Museum* (London, 1926), Pl. XX:1465; E. Goodenough, *Jewish Symbols in the Greco-Roman Period* (13 vols.; New York, 1953-1968), III, No. 1185.
77. K. Preisendanz *et al.*, *Papyri Graecae Magicae* (Leipzig, 1928-1931), I, pp. 126-130.
78. M. Rostovtzeff, *Tesserarum Urbis Romae et Suburbi* (St. Petersburg, 1903), pp. 114-115 describes eight tesserae with phalli. One of them, No. 905, has the laureate head of an emperor on the reverse. Rostovtzeff suggests that the inscription AI should be completed "A (sse) I (uno)"; p. 115, No. 913. F. Gnecchi, "I numeri I-XVI sulle tesserae di bronzo," *Rivista Italiana di Numismatica* (1907), 515-516 proposes the same solution.
79. Rostovtzeff (above, n. 2), p. 47 assumes that they gave the right to visit a prostitute or that they were used for payment of the tax vestigal lenaninii. F. Schrötter, *Wörterbuch der Münzkunde* (Berlin, 1930) considers them "Spielmarken oder Eintrittsmarken in Bordelle." F. Lenormant, *La monnaie dans l'antiquité* (Paris, 1897), I, pp. 65ff. believes them to be theater tesserae.
80. See, for example, *Annuaire de la Société Française de Numismatique et d'Archéologie* 13 (1889); 16 (1892), Pls. V, VI, VII.
81. Rostovtzeff ascribes to this group all motifs which he calls "symplegmata" (closely embracing wrestlers). Since he adds after the "symplegmata" No. 911, "mulier nuda viro nudo

Nos. 61 and 62 are representations of Aphrodite, well-known from gem types.[82] They demonstrate how much a type can degenerate, or be simplified, without becoming altogether unrecognizable. Aphrodite was a popular and widely worshipped goddess and patroness.

No. 63 shows a flute-playing dancer. It is possible that Nos. 61 and 63 were used for the organization of private activities of collegia, if such existed in Caesarea.[83]

Nos. 64 and 65 show the three Graces, a motif well-known from gems and tesserae. Rostovtzeff shows the three Graces on the reverse of one theater tessera, as well as on a specimen of a phallus tessera, which he ascribes to prostitution.[84]

The transition between tesserae used for public purposes and private issues is not well-defined. Nevertheless, the author ascribes the following specimens to private use:

Nos. 66-71 all show lyres on one side and one or two serpents on the other, except for No. 66, which has only a lyre. The two serpents on Nos. 70 and 71 are, according to Rostovtzeff, symbolic of a married couple, leading the author to propose that this group was perhaps used for private marriage festivities. The single serpent should then be understood as the house snake Agathodaimon,[85] the bringer of fortune to the house of the newlyweds. The lyre belongs not only to Apollo but to his son Hymen, too.

Furthermore, one important part of the marriage ceremony was the leading of the couple to their house,[86] whereby part of the cortège consisted of musicians playing the lute and a stringed instrument. Hitherto the latter could not be identified due to the fact that the representations are small and not precise.[87] The stringed instrument may well be the lyre.

No. 72 represents an altar surrounded by a wreath, and No. 73 a very conventionalized wreath. Both could well belong to the marriage group also; the wreath is an attribute of Hymen.[88] The same is true for No. 79, discussed below.

Nos. 74-78 have on one side the uterus symbol in its most deteriorated form, looking like an octopus, which was identified by Bonner on amulets.[89] Nearly every amulet showing the uterus symbol is surrounded by an *ouroboros*, a snake biting its own tail, a sign extremely common on amulets.[90] In the author's opinion, this makes it conclusive that the design was meant to represent the uterus symbol, capable of furthering conception. The phallus on the Osiris mummy, and birds on No. 78, may be regarded as fertility symbols.[91]

Thus, it may be suggested that the whole series could have been connected with marriage festivities also in the form of good wishes for fecundity.

No. 79, which depicts two combined wreaths (of Hymen?) and a bird, combines two motifs probably used for the above purpose.

Nos. 80-85 are different representations of Hermes who has become, like Aphrodite, a symbol recognizable only by its attributes[92] and attitudes, all of the former having been seemingly expendable, except the money bag. This must have been the most important piece, because sometimes a second purse in the other hand is supplied (Nos. 83, 84?).[93]

Nos. 87-89 are also connected with Hermes. They depict the cock and the caduceus, even if the other side of Nos. 88 and 89 shows Hygieia. We may proba-

insidens" (nude woman sitting on nude man), it seems possible that the other "symplegmata" show erotic scenes, too.

82. Aphrodite covering herself was used on coin reverses from Akko-Ptolemais of Philip and Salonina; see Kadman (above, n. 63), Pls. XIV:204, XVIII:265. Bonner (above, n. 52), Pl. VIII:158 shows her on an amulet which he thinks may be a love charm. The same type as No. 61 is represented on a tessera in Rostovtzeff and Prou (above, n. 18), Pl. XII:13, with Eros holding a mirror on the reverse. For No. 62, Aphrodite drying her hair; *ibid.*, Pl. III:8; Bonner (above, n. 52), Pl. IX:196.
83. Nilsson (above, n. 55), II, pp. 112, 597; Pauly-Wissowa (above, n. 9), IV, 1, p. 385.
84. Rostovtzeff (above, n. 77). The three Graces are seen on an amulet in Bonner (above, n. 52), Pl. III:61; F.H. Marshall, *Catalogue of the Finger Rings, Greek, Etruscan and Roman, in the Department of Antiquities, British Museum* (London, 1907), p. 20, Nos. 124-126; Rostovtzeff (above, n. 2), p. 52, Pl. I:21 shows three figures with the inscription LVD(i) which belong to the theater. See also above, n. 78 for the phallus.
85. Nilsson (above, n. 55), II, p. 203.
86. C. Daremberg and E. Saglio, *Dictionnaire des antiquités grècques et romaines* (Paris, 1877-1909), III/2, pp. 1647-1651.
87. Rostovtzeff (above, n. 2), p. 107.
88. Daremberg and Saglio (above, n. 86), III/1, pp. 333-334. An altar is shown in Rostovtzeff and Prou (above, n. 18), Pl. IV:4.
89. Bonner (above, n. 52), Pls. VI:139, VII:145. For the Osiris mummy on No. 78, cf. *ibid.*, Pls. I:8, XIX:354, 355.
90. *Ibid.*, p. 250.
91. *Oxford Classical Dictionary*, eds. N. Hammond and H. Scullard (Oxford, 1970), p. 169.
92. A similar deterioration set in gems of the 2nd century C.E. Cf. A. Hamburger, "Gems from Caesarea Maritima," *'Atiqot* 8 (1955), Pl. II, Nos. 26, 27 for Hermes; Ingholt *et al.* (above, n. 45), Pl. XVI:282 is similar to No. 82 here. See also Rostovtzeff (above, n. 2), Pl. II:9.
93. Rostovtzeff (above, n. 2), p. 120.

bly conclude that the anchor and star of No. 80 are the emblems of a business connected with the sea.[94]

Of interest is No. 85 which shows a seven-branched palm along with other religious symbols, the shofar and the lulav. This is an amulet device which developed from the seven-branched menorah, as shown on several amulets published by Goodenough.[95] The tessera seems to have originated among Hellenized Jews who were not offended by the "graven image" of Hermes.

No. 86 is clearly a menorah and undoubtedly comes from a Jewish source.

Hermes, Hygieia (Nos. 88, 89?), Heracles (No. 92), Nemesis (Nos. 94-96), Isis (No. 91), and other unidentified gods may be counted as private issues. The representation of Nemesis with crossed legs may look unusual (Nos. 94, 96), yet we must remember that tesserae are the most primitive branch of the glyptic art, and the craftsmen and customers were probably satisfied if attributes and posture alone made it clear which god was represented. There is no doubt about identifying this posture as that of Nemesis spitting in the breastfold. If the representation of the lower part of the figure became confused with some other god, it seems not to have mattered much.

A number of private tesserae are influenced by the coins of Ascalon. No 90 shows Derketo-Atargatis standing on the Triton (the latter here only shown in outline), as she appears on coins minted by Antoninus Pius during the 2nd century C.E.[96] The unusual clumsy enthroned figure on the reverse is apparently not Zeus himself, although connected to him, but rather Hadad or Baalshamin, whose representation on Palmyra tesserae shows the same clumsiness and the same long garment as the figure on our tessera.[97] No. 91 depicts Isis and is either inscribed AC(KAΛON?) and IS(IS) or depicts an atef-crown above.[98] Heracles on the reverse is a motif known also from the coins of Ascalon.

No. 97 shows a very stylized galley with rudder, the left prow ending in a bird's head with long beak, as on coins of Ascalon of the late 1st century B.C.E.[99] Nos. 96-99 are equally formalized galleys which are of the same style as those depicted on minute coins of Caesarea.[100]

The anchors of Nos. 102-104 are comparable to similar ones depicted on coins of Herod I and Herod Archelaus.[101] Again there is no well-defined borderline between those tesserae which are ascribed to private issues with various purposes and substitute coinage. The galleys could already be substitute coinage but the author thinks it as likely that the motif indicated the business of the issuers.[102] As the anchor group is greatly similar to regular coinage, it is probable that they were coin substitutes.

No. 103 has been converted to a Christian symbol by the addition of doves, fish, and palms, a design depicted on a gem in the British Museum.[103] (This is one of the tesserae which are so badly wrought and poorly preserved that they may be identified only by comparison.)

We have few initials on our tesserae, and it is doubtful if they are to be understood as letters or numbers, and in some cases, if they are to be read in Greek or Latin. No. 102, for example, could be either Λ or V. No. 106 has ϕ-Λ, and No. 107 appears to be Γ. On Nos. 109-111, which are obviously copies of coins of Heraclius,[104] the S should be interpreted as the number "six." Of these tesserae, No. 109 is particularly interesting because the coins of Heraclius generally do not have the double cross-beam which came into use only on Byzantine coins of Constantinople at a time when Caesarea had been in Arab possession for a long time. No. 108 is a Byzantine monogram.

Nos. 112-114 show the head of a laureate emperor. The crescent and stars came into use from the 1st century C.E. when astrology became a dominant factor in life.

No. 115 is of much corroded iron and is still partly covered with a thin layer of silver. The head could be Vespasian, the draped head probably Tyche.

No. 116 shows the only individualistic portrait.

94. *Ibid.*, p. 95 mentions that suitable symbols were used for the tesserae; the stevedores, for example, chose as a design Marsyas — the representation of a Silenus carrying a wine skin on his shoulder. The ancient bagpipers, the *utricularii*, chose a bag as their symbol. Rostovtzeff (above, n. 2), p. 100 assumes that the representations of river boats (leichte Schiffe) were used for river traffic.
95. Cf. Goodenough (above, n. 76), III, pp. 1010-1021.
96. Hill (above, n. 37), Pl. XIV:8, 12.
97. Ingholt *et al.* (above, n. 45), No. 203; Nilsson (above, n. 55), II, p. 116ff.
98. Cf. Hill (above, n. 37), Pl. XIV:15 for comparison.
99. *Ibid.*, Pl. XII:9-11.
100. See Hamburger (above, n. 26), 130, Nos. 62-63.
101. Reifenberg (above, n. 37), Pls. III:33, 33a, IV:57 (for No. 102 here); Hill (above, n. 37), Pls. II:10 (for No. 103 here), XXIV:11 (for No. 104 here).
102. Rostovtzeff (above, n. 2), p. 100.
103. *British Museum Guide to the Early Christian and Byzantine Antiquities* (London, 1921), p. 77, fig. 47.
104. W. Wroth, *Catalogue of the Imperial Byzantine Coins in the British Museum* (London, 1908), Pl. XXVII:1-4. The "y" and "x" on No. 111 here are probably initials.

For the meaning of the CI various explanations may be offered: CI (vile), distribution or currency, or the abbreviation of the name of the issuer.[105]

No. 117 is probably an eagle whose wings surround the SPQR on coins by Severus Alexander.[106] Here an M is in the center.

No. 119 seems to be a representation of the zodiac with an astrological figure in the center. The illegible signs in the cross-partition on the reverse suggest corrupt Hebrew. The unusual spiral form is shown on an amulet published by Goodenough, where Hebrew letters are an addition.[107]

Nos. 118, 120, 121, 123, and 124 cannot be interpreted. The meaning of No. 122 likewise evades us. It could be a military symbol[108] but the possibilities are numerous. The letters are probably abbreviations.

SUMMARY

More than 300 tesserae found at Caesarea were examined by the author. Despite their poor condition and the scarcity of inscriptions, even the most cautious interpretations have achieved interesting results.

The identified tesserae could be ascribed to public distributions, theater, circus, games, and races. We have proposed that the unusual Eros-Psyche design, originally an amulet motif, should be ascribed to the prostitution group. Another amulet motif, the uterus symbol, hitherto unknown on tesserae, together with the lyre and serpent, led us to assume that tesserae were also used for the organization of marriage festivities. The tesserae with a wreath, the attribute of Hymen, seem to belong to such festivities. This suggestion is all the more probable because the bird motif (the symbol of fecundity) is shown together with the wreath motif as well as with the uterus motif. Another symbol, the altar inside a wreath, may belong to the marriage group as well. Private tesserae and substitute currency were identified, although we could find no firm indicator for the collegia.

The unique issue of silver tesserae found a plausible explanation in the lavishness of the festivities of Herod for which a new date has been proposed. Evidence of regular Caesarea games has been gathered.

There are many tesserae whose purpose remains unexplained. Notwithstanding these shortcomings, these insignificant, badly worn and broken, and irregularly formed pieces of cheap metal offer us a remarkable picture of the life-style of a Roman city: its foundation, festivities, acts of generosity, morals and pastimes, family celebrations and expressions of good wishes, manifold gods and various beliefs of its inhabitants, business and relations with neighboring towns whose currency was copied.

Truly the study of tesserae is an absolute necessity for a full understanding of ancient daily life.

CATALOGUE

Preface:

Abbreviations of the collections:

Dep. Ant.	Department of Antiquities, Jerusalem (formerly collection of Bezalel Rabani)
Better	Mrs. Better, Haifa
Beth Chana	Museum Beth Chana (Senesch), S'dot Yam
Fraenkl	Mrs. Fraenkl, Haifa
Hamburger	Collection of the author
Josef	Mrs. Mia Josef, Hadera
Levi	Mrs. Ruth Levi, Hadera
Link	Mr. Edwin Link, Binghamton, N.Y., U.S.A.
Mus. Kad.	Kadman Numismatic Museum, Museum Ha'aretz, Tel-Aviv (formerly collections of Mrs. Fraenkl and Mrs. Josef)
Mus. Tib.	Tiberias Museum (formerly collection of Bezalel Rabani)
Oestreicher	Mr. B. Oestreicher, Ramat Gan
Rabani	Mrs. Tirza Rabani, Jerusalem
Redner	Mr. M. Redner, Zichron Ya'akov

105. Rostovtzeff (above, n. 2), p. 35 mentions the inscription *civile* ("perhaps congiarium").
106. Hill (above, n. 37), Pl. III:13 by Severus Alexander, from Caesarea.
107. Goodenough (above, n. 76), II, p. 268, No. 1145.
108. Rostovtzeff (above, n. 2), p. 32 mentions tesserae of military character.

It is not indicated when a tessera is partly broken, because only few tesserae are complete. Nos. 21, 45, 51, 55a, 81, and 86 were unobtainable at the time of publication. The drawings are preliminary work drawings. Many tesserae could only be identified through comparison with other tesserae, coins or gems. The drawings show the actual state of the tesserae, where sometimes only remnants of the design are preserved. This results in seeming divergencies between description and drawing; see, for instance, Romulus and Remus on No. 6, the rider on No. 41, the triton on No. 90, the galleys on Nos. 97 and 98, the eagle on No. 117, and the locust on No. 2. The drawings were made by the author.

1. *Ob.* Ear of corn with two leaves, growing out of a seed in a hole.
   Rev. Plain.
   Lead, 10:9:2 mms. (Levi).

2. *Ob.* Kantharos, ear of corn to l., locust to r.
   Rev. Griffon or Pegasus to r.
   Lead, 11:11:1 mms. (Hamburger).

3. *Ob.* Kantharos, ear of corn to l., letter "K" to l.
   Lead, 12:11:3 mms. (Redner).

4. *Ob.* Palm tree with figure to l.
   Rev. Head with palm before face.
   Lead, 10:9:5 mms. (Hamburger).

5. *Ob.* Romulus and Remus suckled by she-wolf.
   Rev. Shrimp to r.
   Lead, 10:10:1 mms. (Dep. Ant.).

6. *Ob.* Romulus and Remus suckled by she-wolf, in incuse.
   Rev. Scorpion.
   Lead, 11:11:3 mms. (Mus. Kad.)

7. Scorpion on both sides.
   Lead, 15:12:1 mms. (Josef).

8. *Ob.* Tyche-Artemis to l., wearing turreted crown and short chiton, holds Nike in outstretched r. hand and bow in l. hand, one foot raised, standing on prow. In incuse.
   Rev. Plain.
   Lead, +13:11:2 mms. (Hamburger).

9. *Ob.* Tyche-Artemis to l., wearing high headdress and short chiton, holds bust in outstretched r. hand and bow in l. hand, one foot raised, standing on prow.
   Rev. Plain.
   Lead, 9:7:1 mms. (Hamburger).

10. *Ob.* Tyche-Artemis to l., wearing turreted crown and short chiton, holds bust in outstretched r. hand and bow in l. hand.
    Rev. Lion to r.
    Lead, 11:10:1 mms. (Josef).

11-14. Same (Mus. Tib.).

15. *Ob.* Ephesian Artemis with staffs and stags.
    Rev. Plain.
    Lead, 11:11:1 mms. (Levi).

16. *Ob.* Ephesian Artemis with stags.
    Rev. Plain.
    Lead, 12:9:1 mms. (Josef).

17-19. Same.
    Lead, 10:10:1, 8:7:1, 12:10:1 mms. (Josef).

20. *Ob.* Horned animal to r., inside oval.
    Rev. Plain.
    Lead, 10:9:1 mms. (Hamburger).

21. *Ob.* Humped bull to r.
    Rev. Crab.
    Lead, 11:11:1 mms. (Mus. Kad.).

22. *Ob.* Crab in incuse.
    Rev. Plain.
    Lead, 10:8:2 mms. (Levi).

23. *Ob.* Animal to r., Δ above, inside circle.
    Rev. Plain.
    Lead, 12:11:1 mms. (Dep. Ant.).

24. *Ob.* Head of wolf to l.
    Rev. Animal to right, inside circle.
    Lead, 10:9:1 mms. (Josef).

25. *Ob.* Same mould. Head of wolf to l., inside wreath.
    Rev. Animal to r.; below, indistinguishable design.
    Lead. 10:11:1 mms. (Levi).

26. *Ob.* Animal to r.
    Rev. Plain.
    Lead, 9:7:1 mms. (Mus. Kad.).

27. *Ob.* Animal to r. Bevelled edge.
    Rev. Plain.
    Lead, 13:11:1 mms. (Hamburger).

28. *Ob.* Camel to r.
    Rev. Indistinguishable.
    Lead, 10:10:1 mms. (Josef).

29. Same.
    Lead, 9:9:1 mms. (Josef).

30. *Ob.* Elephant to r.

Rev. Plain, with raised ridge.
Lead, 11:10:1 mms. (Hamburger).

31. *Ob.* Gladiator to r., throwing net.
Rev. Head of animal to front (?).
Lead, 10:10:3 mms. (Hamburger).

32. Same.
Lead, 13:12:4 mms. (Dep. Ant.).

33. Same.
Lead, 16:13:4 mms. (Dep. Ant.).

34. *Ob.* Lion to r., crescent and star above, in incuse.
Rev. Plain.
Lead, 13:12:2 mms. (Josef).

35. *Ob.* Narrow-necked amphora with fluted body and small curved handles. Border of dots.
Rev. Biga to 1. with Nike driving, holding wreath.
Lead, 17:16:1 mms. (Levi).

36. *Ob. Biga* with driver to 1., Nike indicated flying above.
Rev. Headdress of Isis.
Lead, 11:11:3 mms. (Mus. Kad.).

37. *Ob.* Two to three three horses running to 1. Nike indicated flying above, holding wreath.
Rev. Bust to r.
Lead, 9:9:1 mms. (Levi).

38. *Ob.* Helios, rays around head, riding to r. Spear with cross above it under r. arm, 1. hand raised.
Rev. Recumbent figure to 1.; animal (?) below in incuse.
Lead, 9:9:1 mms. (Josef).

39. *Ob.* Two horses to 1., Helios (?) with sun rays indicated, riding to 1., r. hand raised; animal indicated below.
Rev. Plain.
Lead, 11:9:1 mms. (Hamburger).

40. *Ob.* Helios with sun rays indicated, riding to 1.; dead animal below in incuse.
Rev. Plain.
Lead, 11:9:1 mms. (Levi).

41. *Ob.* Horse to 1., rider with raised arm indicated, Nike (?) indicated flying above; dead animal below 1.
Rev. Unclear.
Lead, 14:14:1 mms. (Hamburger).

42. *Ob.* Crude mask to front.
Rev. Animal to r.
Lead, 10:8:2 mms. (Levi).

43. *Ob.* Mask to front, in incuse.
Rev. Head to r. (Tyche or Apollo), with branch before face.
Lead, 11:10:1 mms. (Hamburger).

44. *Ob.* Three faces combined in one: 1. and r. faces in profile, middle: bearded man. In incuse (gryllus).
Rev. Plain.
Lead, 12:14:2 mms. (Rabani).

45. *Ob.* Comic mask to r.
Rev. Plain.
Lead, 13:13 mms. (Fraenkl).

46. *Ob.* Bust to r., caduceus behind shoulder; border of wreath.
Rev. Griffon to r.
Lead, 12:10:2 mms. (Josef).

47. *Ob.* Three-line inscription: GPU/EVL/I; round borderline.
Rev. Plain.
Lead, 15:15:1 mms. (Hamburger).

48. *Ob.* ΔIOC inside wreath.
Rev. Plain.
Lead, 11:9:1 mms. (Hamburger).

49. Same.
Lead, 10:8:1 mms. (Hamburger).

50. *Ob.* Recumbent figure to 1., rock pile (?) below; round borderline.
Rev. Cross-legged sitting figure, wearing helmet, cuirass (?), round shield under 1. arm, r. arm bowed to shoulder and holding serpents or a whip to 1.
Lead, 16:16:1 mms. (Josef).

51. *Ob.* Recumbent female figure to 1., head ornament, r. arm outstretched, holding vulture-like staff (reed?). Draped around hips. Wreath border. Secondary piercing.
Rev. Bridled horse running 1., coiled serpent to 1. on back holding skhent.
Silver-alloy, 13:13:1 mms. (Beth Chana) (enlarged 1:2).

52. *Ob.* Recumbent figure to 1., head ornament, r. arm outstretched, holding reed; animal below.
Rev. Nike on *biga*, holding wreath in raised 1.

hand; borderline.
Silver-alloy, 13:13:1 mms. (Hamburger).

53. *Ob.* Recumbent bearded sea god to l., wearing head ornament, draped around hips, in outstretched r. hand cornucopiae from which a genius emerges; animal below to l.; ouroboros (?) around border.
Rev. Rider to r., caduceus under r. arm; border of wreath.
Silver-alloy, 15:15:1 mms. (Hamburger).

54a. *Ob.* Recumbent bearded sea god to l., reed in outstretched r. hand, animal below. Border of dots.
Rev. Isis enthroned to r., holding Horus in lap; indistinguishable headgear or beetle above head; falcon (?) on throne backrest; border of dots.
Silver-alloy, 15:15:1 mms. (Levi).

54b. *Ob.* Triptolemus riding sea monster to r.
Rev. Recumbent bearded sea god to l.; cornucopia in l. arm, indistinguishable object in outstretched r. hand.
Silver.

55a. *Ob.* Recumbent bearded sea god to l., nude down to draped hips; wearing head ornament, in outstretched r. hand cornucopia from which genius emerges, l. hand rests on animal; borderline.
Rev. Two sailing boats, harbor entrance above flanked by two towers, colonnades to l. and r.; two figures (?) on each tower; L (?) to l., KA to r.; secondary piercing (two holes); border of dots.
Silver-alloy, 18:18:1 mms. (Link).

55b. *Ob.* Recumbent bearded sea god to l., nude down to draped hips, r. hand holds cornucopia from which emerges genius of plenty (?), l. arm rests on crocodile; second cornucopia behind shoulder (?).
Rev. Demeter standing to r., veiled, wearing kalathos, long chiton and peplos; long torch in r. hand; l. hand holds ears of corn and heads of poppies, garment hangs from l. arm; inscribed L KE.
Lead, 17:17:1 mms. (Hamburger).

56. *Ob.* Recumbent bearded sea god to l., nude down to draped hips. Head ornament, in outstretched r. hand elephant to r. with howdah on its hand, cornucopiae in l. arm; border of wreath; secondary piercing.
Rev. Winged Eros to l., winged Psyche to r. wearing peplos, both embracing. Borderline.
Silver-alloy, 18:18:1 mms. (Levi).

57. *Ob.* Winged Eros to l., laureate (?), embracing Psyche (only part of peplos preserved); in incuse.
Rev. Recumbent figure on couch to l. Below, animal to l.
Lead, 13:13:1 mms. (Hamburger).

58. *Ob.* Eros and Psyche embracing.
Rev. Unclear.
Lead, 10:9:½ mms. (Levi).

59. *Ob.* Eros to l., Psyche to r., both sitting and caressing; in incuse.
Rev. Plain.
Lead, 14:13:1 mms. (Mus. Kad.).

60. *Ob.* Erotic scene.
Rev. VIII inside wreath; secondary piercing.
Bronze, 21:21:1 mms. (Oestreicher).

61. *Ob.* Aphrodite to front, looking r., covering herself with both hands, in posture of Medici statue.
Rev. Plain.
Lead, 9:7:2 mms. (Levi).

62. *Ob.* Aphrodite to front, drying her hair. Small Eros to l. (?), rudder to r. (?).
Rev. Plain.
Lead, 12:10:1 mms. (Mus. Kad.).

63. *Ob.* Dancer to front, playing flute; in incuse.
Rev. Plain.
Lead, 10:9:2 mms. (Levi).

64. *Ob.* Three Graces, figure in middle hatted, r. figure holds indistinguishable object in one hand.
Rev. Plain.
Lead, 9:8:1 mms. (Levi).

65. *Ob.* Three Graces (hatted?) dancing, middle figure seen from behind.
Rev. Plain.
Lead, 12:12:1 mms. (Josef).

66. *Ob.* Lyre.
Rev. Plain.
Lead, 12:11:1 mms. (Josef).

67. *Ob.* Lyre.
Rev. Serpent to r. M at r.

Lead, 12:11:1 mms. (Josef).

68. *Ob.* Lyre.
Rev. Serpent to r. A (?) to r.
Lead, 11:10:2 mms. (Josef).

69. *Ob.* Lyre.
Rev. Serpent to l.
Lead, 13:10 mms. (Dep. Ant.).

70. *Ob.* Lyre.
Rev. Two serpents to r.; serpent seems human-headed. Small figure to r., below, facing l. Λ(?) above.
Lead, 15:13:3 mms. (Levi).

71. *Ob.* Lyre.
Rev. Two serpents to r. (?) to r.
Lead, 13:12:2 mms. (Josef).

72. *Ob.* Horned altar with flames; wreath border.
Rev. Plain.
Lead, 15:15:2 mms. (Oestreicher).

73. *Ob.* Wreath (?); border of dots.
Rev. Plain.
Lead, 19:19:1 mms. (Levi).

74. *Ob.* Uterus symbol. Ouroboros around.
Rev. Cock to r. with caduceus (?).
Lead, 13:13:2 mms. (Hamburger).

75. *Ob.* Uterus symbol, ouroboros.
Rev. Cock to r.
Lead, 12:11:2 mms. (Josef).

76. *Ob.* Uterus symbol inside wreath.
Rev. Bird to r., looking back.
Lead, 12:10:1 mms. (Levi).

77. *Ob.* Uterus symbol.
Rev. Bird to r., looking back.
Lead, 9:9:2 mms. (Hamburger).

78. *Ob.* Uterus symbol. Osiris mummy faces uterus symbol to l.; phallus indicated; head ornament.
Rev. Plain.
Lead, 13:13:5 mms. (Levi).

79. *Ob.* Small wreath.
Rev. Cock to l., inside wreath.
Lead, 14:14:1 mms. (Mus. Kad.).

80. *Ob.* Hermes to front, looking, l., purse in r. hand, caduceus in l. hand, garment hangs over l. shoulder; anchor to l., below; star to r., below.
Rev. Plain.
Lead, 13:9:1 mms. (Josef).

81. *Ob.* Hermes to front, looking r., wears petasos, purse in r. hand, caduceus in l. hand, drapery hangs from l. arm; in incuse.
Rev. Plain.
Lead, 12:10:½ mms. (Mus. Tib.).

82. *Ob.* Hermes to front, purse in r. hand, garment hangs from l. arm.
Rev. Bust of Serapis with kalathos to l. (May also be viewed upside down; Serapis then faces r.).
Iron, 10:10:3 mms. (Mus. Kad.).

83. *Ob.* Hermes to front, purse in r. hand, money bag in l. hand. ΘΕΟΔΩΡΟC inscribed; in incuse.
Rev. Plain.
Lead, 14:13:2 mms. (Hamburger).

84. *Ob.* Hermes with caduceus, purse, and money bag(?)
Rev. Plain.
Lead, 13:13:1 mms. (Rabani).

85. *Ob.* Hermes to front, looking l.; purses in both hands, caduceus behind l. shoulder.
Rev. Seven-branched palm, shofar to l., indistinguishable object to r.
Lead, 11:10:1 mms. (Hamburger).

86. *Ob.* Candelabra with 7 branches on stand; indistinguishable objects to r. and l.
Rev. Plain.
Lead, 11:9:1 mms. (Dep. Ant.).

87. *Ob.* Cock to r. with caduceus (?).
Rev. Plain.
Iron, 11:10:1 mms. (Hamburger).

88. *Ob.* Hygieia to l., feeding serpent.
Rev. Head of cock to r.
Lead, 10:10:½ mms. (Levi).

89. *Ob.* Hygieia (?) with serpent to front, looking r.
Rev. Bird with caduceus above, star at l.
Lead, 11:8:1 mms. (Mus. Kad.).

90. *Ob.* Atargatis, clad in peplos to front, dove in r. hand, stands on Triton, inside wreath.
Rev. Enthroned figure, covered by clumsy garment from neck to feet, to l., holds Nike in r. hand, long staff in l. hand, star to l., crescent (?) to r; borderline.
Lead, 14:12½:3 mms. (Hamburger).

91. *Ob.* Bust of Isis to r., sistrum below chin, flail

over shoulder, facing small Osiris mummy; panther below to r., ACI inscribed at l. I S or atef-crown above head.
Rev. Bust of Heracles to r., club before face, inside wreath.
Lead, 16:16:1 mms. (Levi).

92. *Ob.* Head of Heracles to r.
Rev. Club.
Lead, 12:12 mms. (Josef).

93. *Ob.* Figure to front, wears hat or helmet, holds long staff or torch in l. hand.
Rev. Plain.
Lead, 12:11:1 mms. (Josef).

94. *Ob.* Nemesis to front, looks l., spitting into breastfold, staff in l. arm, bridle below l.
Rev. Animal-headed serpent-legged deity to front, looking at attribute above l. shoulder, animal or ankh hanging from l.
Lead, 10:10:1 mms. (Mus. Kad.).

95. *Ob.* Nemesis to front, spitting into breastfold; bridle below l.
Rev. Figure holds something in outstretched r. hand.
Lead, 6:6:½ mms. (Levi).

96. *Ob.* Nemesis to front, looking l., spitting into breastfold; bridle below l.
Rev. Galley with rudder and wavy line below.
Lead, 9:7:3 mms. (Hamburger).

97. *Ob.* Galley with rudder, prow at r. ending in bird-head with long beak.
Rev. Bird to l. inside wreath.
Lead, 11:10:1 (Levi).

98. *Ob.* Galley.
Rev. Bird to l., thunderbolt above.
Lead, 15:14:½ mms. (Hamburger).

99. *Ob.* Galley.
Rev. Plain.
Lead, 10:10:2 mms. (Mus. Kad.).

100. *Ob.* Prow.
Rev. Plain.
Lead, 14:11:2 mms. (Hamburger).

101. *Ob.* Dolphin to r. in incuse.
Rev. Plain.
Lead, 9:8:3 mms. (Oestreicher).

102. *Ob.* Anchor in borderline or wreath.
Rev. Λ.
Lead, 13:10:2 mms. (Levi).

103. *Ob.* Anchor, dove on crossbeam, branch to l., fish inside branch.
Rev. Plain.
Lead, 10:8:½ mms. (Hamburger).

104. *Ob.* Anchor with double crossbar, inscription.
Rev. Double cornucopiae with caduceus; border of dots.
Lead, 15:14:1 mms. (Josef).

105. *Ob.* Cornucopiae.
Rev. Plain.
Lead, 18:18:3 mms. (Josef).

106. *Ob.* Inscribed: ϕ
Rev. Inscribed: Λ.
Lead, 12:10:1 mms. (Josef).

107. *Ob.* Borderline.
Rev. Plain.
Lead, 29:29:1 mms. (Hamburger).

108. *Ob.* Monogram; borderline.
Rev. Plain.
Lead, 8:8:1 mms. (Levi).

109. *Ob.* S with dots at r. and l; border of dots.
Rev. Cross with double crossbar; border of dots.
Lead, 30:30:1 mms. (Hamburger).

110. *Ob.* S inside border of dots.
Rev. Head to r.; border of dots.
Lead, 16:16:1 mms. (Mus. Kad.).

111. *Ob.* S to l., x to r.; dolphin (?) above l.; secondary piercing.
Rev. Plain.
Lead, 15:15:1 mms. (Levi).

112. *Ob.* Bearded head to r.; star before face
Rev. Crescent and stars.
Lead, 11:11½:1 mms. (Levi).

113. *Ob.* Bearded head, laureate to r.; border of wreath.
Rev. Crescent and two stars.
Lead, 10:10:1 mms. (Mus. Kad.).

114. *Ob.* Bearded head, laureate, to r., star before face.
Rev. Crescent, 7 stars.
Lead, 15:13:1 mms.

115. *Ob.* Head to r., laureate. (Vespasian?).
Rev. Draped head to r.
Iron with thin coating of silver, 22:18:3 mms. (Hamburger).

116. *Ob.* Female head to r.
*Rev.:*C I.
Lead, 10:10:½ mms. (Hamburger).

117. *Ob.* Eagle with wings raised, monogram inside.
Rev. Plain.
Lead, 12:11:1 mms. (Josef).

118. *Ob.* Wheel with eight irregularly spaced spokes.
Rev. Plain.
Lead, 18:18:1 mms. (Levi).

119. *Ob.* Zodiac sign (?) in form of spiral, irregularly spaced partitions; figure inside, stands astride to front, looking r., short staff (?) in l. hand.
Rev. Cross partition with unclear letters or signs in each field.
Bronze, 15:14:1 mms. (Josef).

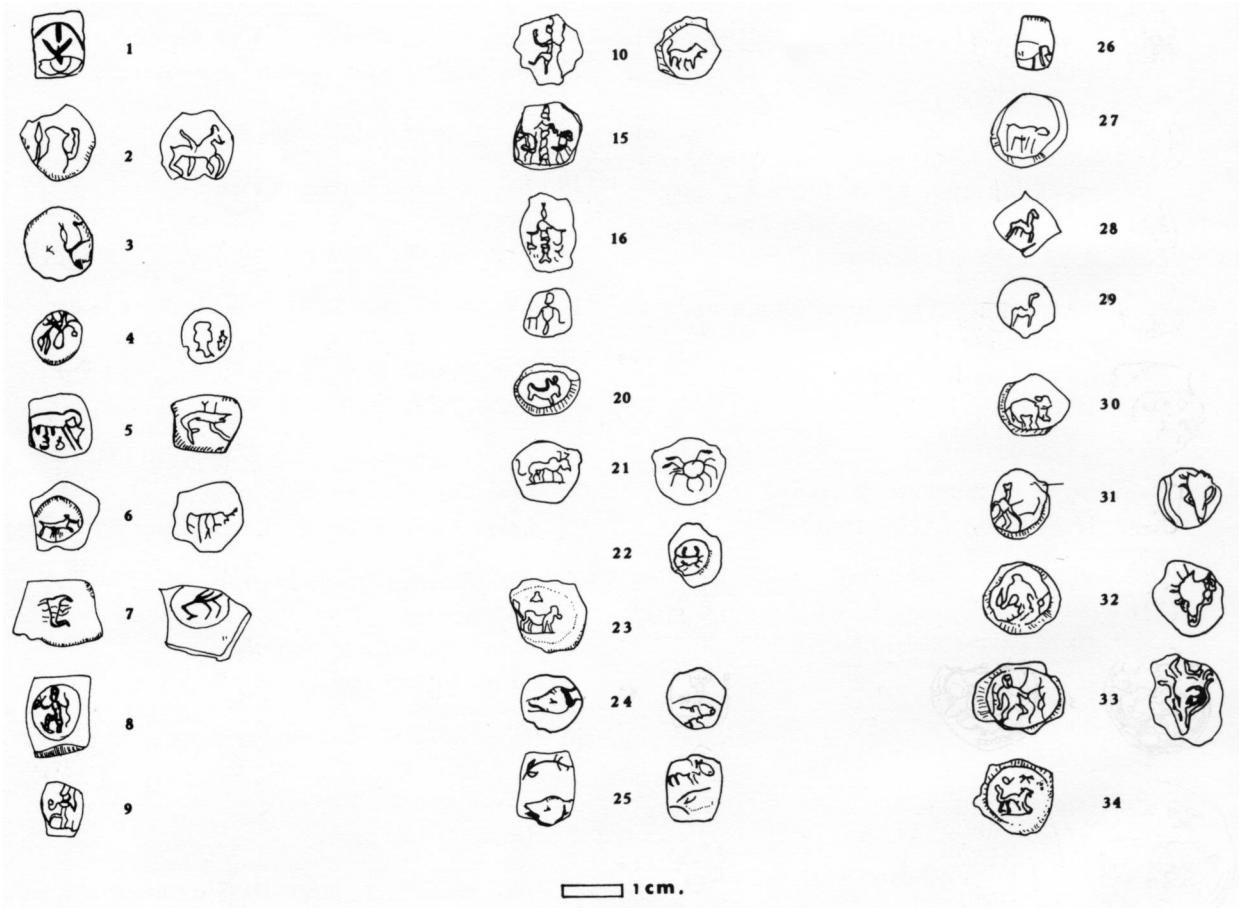
120. *Ob.* Squatting figure in burnus-like garment to r.
Rev. Cock or parrot with rudder to r.
Lead, 14:13:3 mms. (Josef).

121. *Ob.* Squatting woman (?) to r.
Rev. Cock or parrot to r.
Lead, 13:12:3 mms. (Mus. Kad.).

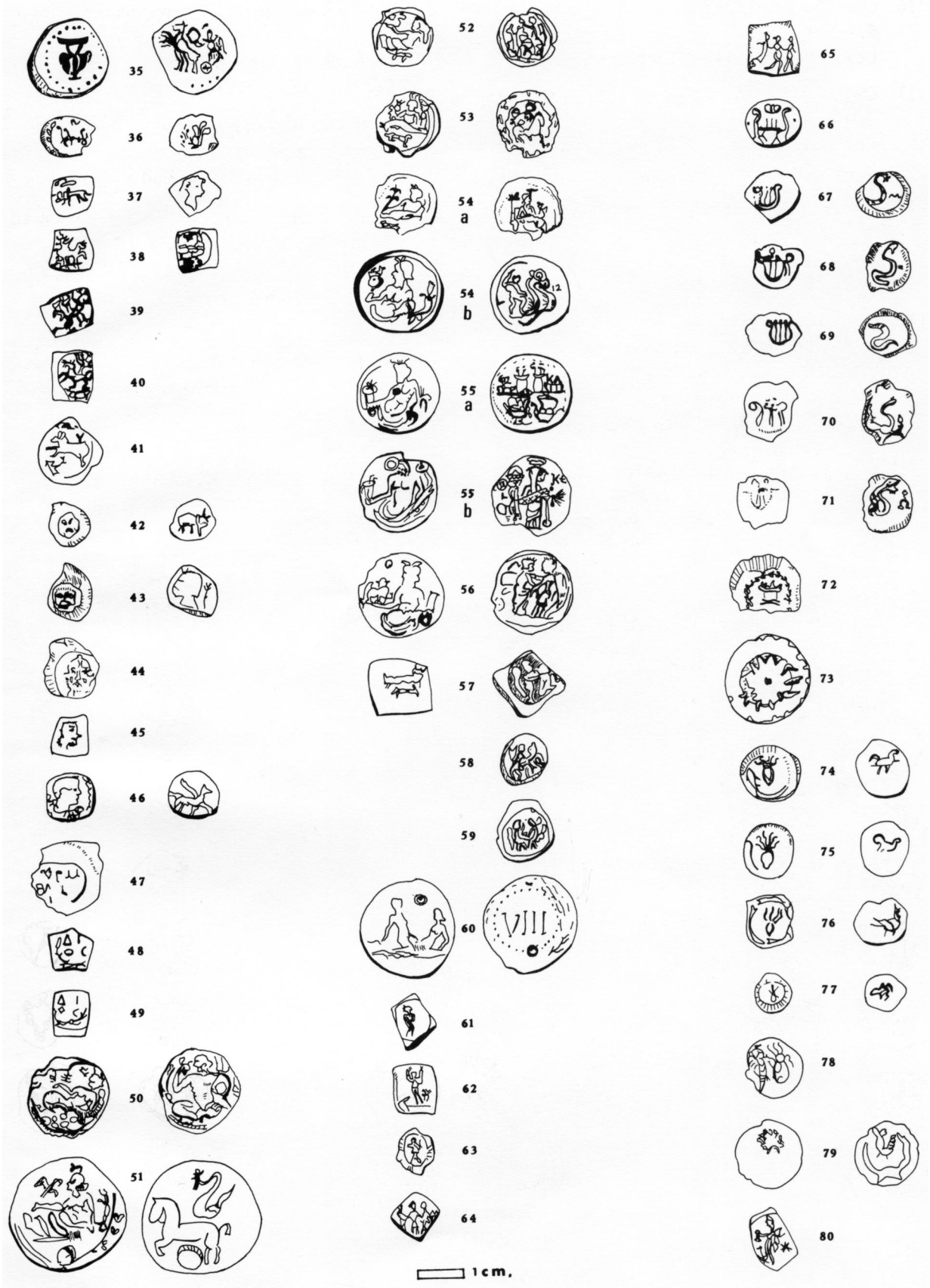
122. *Ob.* Left hand; two lines of letters, beginning above thumb: Q M X (?).
Rev. Plain.
Lead, 12:12:3 mms. (Josef).

123. *Ob.* Sign.
Rev. Crescent with star inside.
Lead, 11:11:1 mms. (Oestreicher).

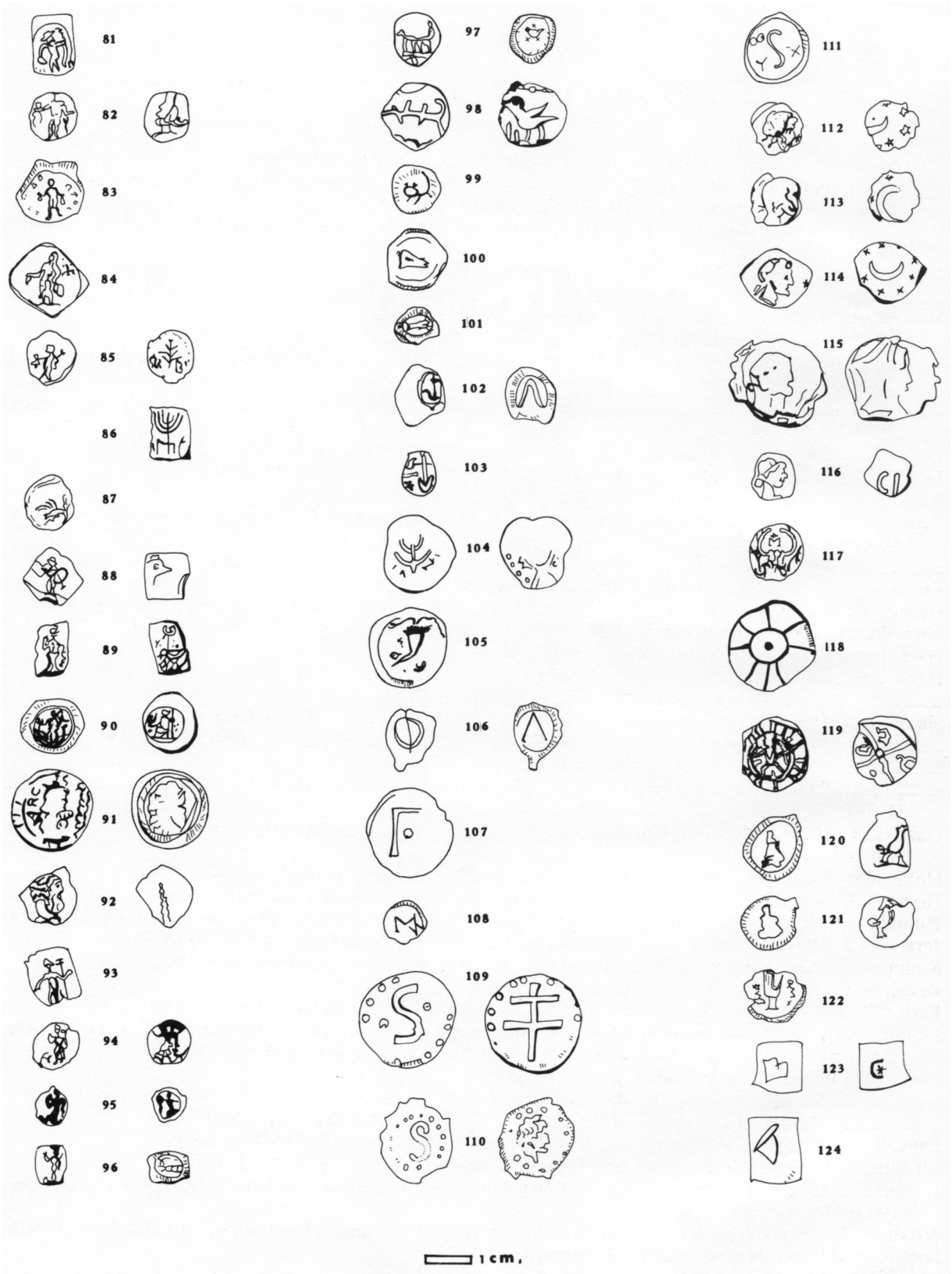
124. *Ob.* Sign.
Rev. Plain.
Lead, 13:11:1 mms. (Dep. Ant.).



Pl. I. Tesserae.



Pl. II. Tesserae.



Pl. III. Tesserae.

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