

Introduction

While researching ancient glass from diverse archaeological excavations in Israel for the past twenty years, and with the accumulation of finds, publications and knowledge of this intriguing discipline, I have learned to appreciate the array of insights, in which the investigation of glass may shed light on historical and cultural issues.

One such topic is the transition from Byzantine to Islamic rule in Syria-Palestine, and while it has been established for some time now that the Arab conquest had not caused widespread devastation, the nature of the Byzantine–Islamic transition and the processes it involved are still widely debated.

This book examines the transition from Byzantine to Islamic rule in Jerusalem and its environs, in light of excavated glass assemblages. Besides serving as a bountiful case study, Jerusalem was selected for this research due to its unique status: during the fifth–sixth centuries, as a thriving Christian cosmopolitan metropolis; and in the first centuries following the Arab conquest of the region, as a political and religious center for the emergent Islam, alongside a thriving Christian community. This book, therefore, explores how glass finds illuminate cultural and ethnic aspects of the various populations that had used them.

1.1 THE MAIN OBJECTIVES AND SCOPE OF THE RESEARCH

Glass finds are frequently discovered in most post-Hellenistic sites in Israel, and considerable data have been accumulated from archaeological excavations in the country during the past decades. These data enable glass researchers to construct typologies that contribute significantly to establishing definitive chronologies, which should constitute the basis for any archaeological and/or historical reconstruction. Furthermore, the systematic examination of glass from regulated archaeological excavations may identify typological, stylistic and technological changes, which reflect wider cultural and economic trends within an ancient society. Yet, the archaeological and historical disciplines have generally neglected to appreciate the valuable contribution embodied in the research into ancient glass.

This research, therefore, establishes the interpretation of glass finds within their contexts, as a valid and reliable manifestation of the processes that the populations in Syria-Palestine experienced during the initial period following the Arab conquest, which had taken place in the fourth decade of the seventh century. Focusing on glass assemblages from sites and complexes occupied from the

fifth/sixth through the eighth centuries in Jerusalem and its environs, further illuminates the nature of the Byzantine–Islamic transition in Syria-Palestine, and sketches a historical-chronological picture deriving explicitly from the archaeological data. So far, no synthesis of this kind has been conducted in the field of Byzantine-period and Early Islamic-period glass from Israel.

In this study I chose to first classify and date the glass finds in a typo-chronology (as presented in Chapter 3), and then weigh these observations in reference to the glass assemblages from the Jerusalem area and to the archaeological contexts in which they were discovered (as presented in Chapters 5 and 6).

A comprehensive up-to-date typological and chronological investigation was constructed by me especially for my Ph.D. dissertation, incorporating the glass finds that were prevalent from the mid-fifth through the eighth centuries in Jerusalem and its surroundings in particular, and in Syria-Palestine in general (see Chapter 3). This typo-chronology, based almost exclusively on glassware recorded in regulated well-documented archaeological excavations, provides a much-needed standardized database for discussion of the glass of this period in general.

Moreover, this inclusive, meticulous and richly-illustrated typological-chronological study, with its concentration of the various types and their time range, may serve as a valuable tool for glass researchers, as well as for archaeologists and pottery researchers attempting to better characterize and date certain excavated structures, installations, or settlement phases.

The analysis of the glass assemblages from the sites examined in the book explores the nature of the various types of glass objects, and their distinct distribution in various types of settlements and complexes, establishing some glass vessels and artifacts as possible markers of religious-ethnic affiliation. Furthermore, the identification of trends of continuity and change in the fabrics, technologies, typologies and styles of the glass finds throughout the turbulent period discussed, illuminates the nature of the processes undergone by the various communities in the Jerusalem area.

This book advocates the investigation of glass finds from archaeological excavations within their contexts as a major and reliable tool for the examination of historical processes. Moreover, this study contributes to the fields of ancient glass and archaeology in general, and emphasizes the contribution of the material culture to the ongoing

historical research on various demographic, religious and ethnic aspects of the period of transition from Byzantine to Muslim rule in Syria-Palestine.

1.1.1 The Geographical and Chronological Scopes of the Research

The glass assemblages from the Jerusalem area examined in this book (Chapters 5 and 6) were recovered in excavated sites and complexes within a geographical range that encompasses the ancient city and the surrounding area within 10 km of the city. This area, as well as the broader region that yielded many of the glass finds discussed in the book, had been included within the territories of the Byzantine provinces of *Palaestina Prima*, *Palaestina Secunda* and *Palaestina Tertia*, and later, following the Arab conquest of the region, within Islamic *Bilad al-Sham* and particularly the districts of *Jund Filastin* and *Jund al-Urdunn*.

As the entire region discussed in the book underwent varying historical administrative divisions, and in order to avoid citing multiple definitions regarding this region, the term 'Syria-Palestine' is used to describe the geographical range covered by the modern-day states of Syria, Lebanon, Israel and Jordan, and by the territories under the Palestinian Authority. The term *Palaestina* is used only when referring specifically to the Byzantine administrative provinces (e.g., *Palaestina Prima*, *Palaestina Secunda*, etc.).

The beginning of the Byzantine period in the eastern Mediterranean is traditionally set in the year 324, when Constantine the Great becomes sole emperor of the Roman Empire. Nevertheless, the glass products of this period in Syria-Palestine followed a different schedule, and during the fourth–early/mid-fifth centuries they predominately comprised types that reflected and maintained earlier, Roman traditions.

This book, therefore, focuses on the time span from roughly the mid-fifth century, with the emergence of a 'genuine' Byzantine-natured glass tradition and its crystallization during the sixth–seventh centuries, and through trends of continuity, enhancement and innovation in glass making in the seventh–eighth centuries (see Section 7.1).

Periods preceding this time span are occasionally mentioned when relevant to a certain topic. Furthermore, a concise discussion of the glass technologies and products of the ninth–tenth centuries is included (in Section 7.1), although beyond the scope of this book, to provide the concluding outline for the previous episode of glass manufacture, and to illustrate the significant change in the glass industry at that time.

The dates refer to the Common Era (CE), unless stated otherwise. For the use of various chronological terms such as 'late Byzantine', see *Dating Terminology* in Section 3.1.

1.1.2 The Structure of the Book and Its Reasoning

The chapters in this book are divided into sections, and references to a chapter or a section are made by its number.

The first section (1.1) in Chapter 1 discusses the objectives and scope of this study, while its second section (1.2) reviews the state of research in two fields: the research pertaining to the transition from Byzantine to Islamic rule (Section 1.2.1), and the research of glass finds from the Byzantine–Early Islamic periods (Section 1.2.2).

The historical setting of Jerusalem and its environs during the Byzantine and the Early Islamic periods is provided in Chapter 2, focusing on aspects relevant to this study, such as the various communities, types of settlements, settlement within and around the city, urban zoning, continuity and change.

Chapter 3 introduces a comprehensive up-to-date typological-chronological investigation of the body of glass products that was prevalent in Syria-Palestine from the mid-fifth through the eighth centuries. This typological-chronological study was constructed especially for my Ph.D. dissertation, with the intention of creating a much-needed, clear and uniform, well-illustrated database for discussion of the glass of this period.

Chapter 3 includes an introduction, and a presentation of the construction methodology of the typological-chronological study (Section 3.1). The typo-chronology opens with the examination of the glass vessels (Section 3.2), followed by the grouping and classification of the major decoration schemes (Section 3.3) that were employed on these vessels. Another section discusses exceptional glass vessels and artifacts (Section 3.4), and the last one surveys architecture-associated glass products, i.e., windowpanes, tesserae and tiles (Section 3.5).

Two of the most common finds in glass assemblages of the period considered in this book are lamps and windowpanes, which facilitated artificial and natural light for the illumination of interiors. Therefore, the discussions in Chapter 4 elaborate on various aspects of these glass-related illumination schemes: lighting and glass lighting devices (Section 4.1); windows and glass windowpanes (Section 4.2). The major novelty of this chapter is the compilation and assessment of Christian, Muslim and Jewish written sources regarding the employment of these lighting devices in religious public buildings in Jerusalem in the Byzantine and Early Islamic periods (Sections 4.1.3, 4.2.1).

A large selection of significant glass assemblages from excavated sites in Jerusalem and its environs, which had been occupied during the Byzantine and Early Islamic periods, is presented in Chapters 5 and 6. Some of the glass assemblages are examined here for the first time, and others have been only preliminarily studied. These glass assemblages are all thoroughly investigated and analyzed in Chapter 5, with reference to their typology as discussed

in Chapter 3. The glass finds are also considered within their context in the various sites.

A selection of additional, published glass assemblages from the Jerusalem area is evaluated in Chapter 6. Together, the corpora of material from both chapters (5 and 6) enable the construction of a comprehensive picture of the body of glass from Jerusalem and its vicinity during the Byzantine and Early Islamic periods, as illustrated in the next chapter.

The synthesis in Chapter 7 opens with the characterization and perception of the glass corpus from the mid-fifth to the eighth centuries in Syria-Palestine (Section 7.1). In the following discussions, this corpus, as reflected in Jerusalem and its environs (and established in Chapters 3, 5 and 6), is scrutinized and considered with regard to its typology and chronology, considering aspects of continuity, change and innovation, as well as local trends and production (Section 7.2). Next, the Jerusalem corpus is compared with several well-dated glass assemblages from three major cities in the region, i.e., Caesarea Maritima, Bet She'an and Ramla (Section 7.3). Following are various considerations of settlement issues and cultural-religious-ethnic contexts associated with the glass finds (Section 7.4). The subsequent discussion identifies trends of continuity and change in the glass industry, and weighs their historical significance (Section 7.5). The final chapter (Chapter 8) holds the conclusions and insights of the research presented in the book.

1.2 THE STATE OF RESEARCH

Following are reviews of the state of research in the two fields relevant to this study: the historical, archaeological and cultural research pertaining to the transition from Byzantine to Islamic rule in this region (Section 1.2.1), and the research of glass finds from the Byzantine–Early Islamic periods in Israel and the neighboring countries (Section 1.2.2).

1.2.1 Research Pertaining to the Transition from Byzantine to Islamic Rule

The traditional approach among historians regarding the Byzantine–Islamic transition believed the Arab conquest of Syria-Palestine in the early seventh century to have been swift and aggressive, and directly responsible for the decline of settlements and the transformation of local societies (e.g., Gil 1992:60–61). This approach drove most archaeologists at work during the first half of the twentieth century to diminish, interpret erroneously, or totally ignore archaeological remains of the ‘late periods’, i.e., from the Byzantine period onward, especially on sites inhabiting earlier, ‘Biblical’ or ‘Classical’ phases (e.g., Walmsley 2007:19, 26; Simpson 2008:115–117). Additionally, the continuing vitality of Christian life and culture in the world of Islam after the Arab conquest has been until recently overlooked by the academic community (e.g., Griffith 2008:1–2).

Moreover, the early knowledge of ceramics of the Byzantine and Early Islamic periods had been, for many years, inadequate, leading to incomplete settlement profiles and precarious site chronologies (e.g., Sauer and Magness 1997:475; Magness 2003:7; Walmsley 2005:106; 2007:48–49, 54–55, 58–59; Bar-Nathan 2011:207–210). Many early studies that adopted the idea of a substantial decline following the Arab conquest, were based on the misdating of local pottery types (e.g., Fine Byzantine Ware, and Cream Ware also known as Mafjar Ware), which had generally been dated too early, as, for example, at Capernaum (Magness 1997; Stacey 2004:16–20). The typologies and chronologies of other pottery assemblages from the Early Islamic period in the region were also problematic and inconclusive, and have lately been challenged by various researchers, as, for example, the Early Islamic ceramic corpus from Abu Gosh, west of Jerusalem (de Vaux and Stève 1950; Stacey 2004:12–13; Cytryn-Silverman 2010:142, n. 1). Furthermore, the pottery from Khirbat al-Mafjar, studied by Baramki (1944), was reconsidered by Whitcomb (1988), establishing a new chronological framework and a revision of the site’s history. This reconsideration was later disputed by others (e.g., Stacey 2004:12; Bar-Nathan 2011:208), and lately revised (and ‘shifted’ 50–100 years earlier) by Whitcomb himself, following recent excavations at the site (Whitcomb and Taha 2013:60).

From the mid-twentieth century, and particularly since the 1980s, studies have acknowledged that the impact of the Early Islamic conquests on society was gradual and more complex than previously perceived. These studies addressed various issues, such as the nature of the conquests (e.g., Donner 1981; Kaegi 1992), as well as the scope, rate and effects of the Islamic expansion on the physical landscape of the region, and on economic, demographic and religious aspects of the local societies (e.g., Kennedy 1986; Haldon 1990a; Levy-Rubin 1994; 2000; Saradi 2006; Laiou and Morrisson 2007:23–42; Donner 2008). The archaeological discipline played little or no role in most of these discussions, and has only lately gained appreciation as a significant tool for the examination of such issues (e.g., Whitcomb 1995a; Hodges 2000:7–33; Walmsley 2007:15–30; Avni 2014:19–30).

Archaeological excavations carried out in the 1970s and 1980s in Jordan and Israel, for example, at Gerasa, Pella and several towns in the Negev, prompted a revised theory of ‘Decline and Fall’ that extended the duration of the devastating effects of the Arab conquest on the region throughout a full century, culminating in the move of the center of political power from Damascus to Baghdad in 750 (Walmsley 2007:25–27).

A different perspective, founded on archaeological surveys and excavations in Jordan and Syria, alas lacking decisive stratigraphical data, set the date for the beginnings of urban transformation and changes in the social structures of the Near East as early as the sixth century, irrespective of the Arab conquest of the region

(Kennedy 1985). This much-quoted model was adopted, for example, by the excavators of Bet She'an (Tsafir and Foerster 1997). However, Schick's detailed examination of sites containing Byzantine and Early Islamic remains established a continuity of the Christian communities in Palestine into the Umayyad period (Schick 1995). Also around the turn of the twentieth century, Foss (1997) assessed the archaeological record from the mid-sixth to the mid-eighth centuries in two regions in Syria, and concluded that those areas "prospered in the sixth century, were to some extent disturbed by the Persian occupation, and were transformed in varying degrees under the Umayyads. Their real decline came in the ninth century or later." (Foss 1997:268).

The accumulating mass of archaeological evidence seems to support another model termed "Intensification and Abatement", involving long durations of settlement growth with intermittent phases of decline, both propelled by internal regional processes rather than external forces (see especially Whittow 2003:414–418).

In his essay of 1999, Kennedy explored political, administrative, ethnic, religious, settlement and environmental changes in "Greater Syria", and suggested a gradual and multifaceted transition into the world of Islam, and a significant break in the mid-eighth century (Kennedy 1999).

Pringle, in his examination of pottery from 636 to 1500 in Syria-Palestine, challenged problems of chronology, periodization, and cultural and ethnic distinctions, and suggested the consideration of a wide range of factors, particularly the socio-economic conditions under which pottery was produced, traded and used (Pringle 1981:46–47). Questions regarding the degree to which Early Islamic pottery may identify populations, as well as issues of local and regional production, and importation and imitation, were also raised by others (e.g., Morony 1995; Whitcomb 1995b; Walmsley 2007:48–59).

Other fields of the material culture have also been researched, examining issues of chronology, technology, iconography and style, and identifying trends of continuity and innovation (e.g., Grabar 2008). Among these fields are numismatics (e.g., Amitai-Preiss, Berman and Qedar 1994–1999; Foss 1994–1999; 2009; Bijovsky 2002; 2010; 2011; 2012a; 2012b; Saradi 2006:14–18; Walmsley 2007:59–64; Heidemann 2008; 2010), sculpture and architectural decoration (e.g., Talgam 2004), wall paintings (e.g., Rosen-Ayalon 1973; Vibert-Guigue 2006–2007), wall mosaics (e.g., King 1976; McKenzie 2013) and mosaic floor pavements (e.g., Donceel-Voûte 1999; Piccirillo 1998; 2001; 2005–2006; Talgam 2000; 2014).

A concise review of the state of Early Islamic archaeology challenged many of the historic, economic and cultural questions, based principally on excavations in Pella and Gerasa (Walmsley 2007). It also considered the material culture, particularly the pottery from the region (Walmsley

2007:48–70). Magness examined various sites and pottery assemblages in Israel and Syria, and deduced that they bear no evidence of violent destruction during the first half of the seventh century, but rather demonstrate prosperity and population growth between the mid-sixth and mid-seventh centuries, followed by varied patterns of settlement and abandonment into the tenth century (Magness 2003:1–2, 215–216).

Additional archaeological studies of the Byzantine–Islamic transition in various regions of Israel include one on the village at Horbat Zikhrin, which had changed its nature and appearance only in the eighth century (Taxel 2005), and a review of rural settlements in the Ramla-Yavneh region during 640–800, depicting a highly varied and complex picture of continuation and abandonment (Taxel 2013). An examination of the settlement processes in the Negev displays slow and gradual cultural and religious transformations in the seventh–ninth centuries (Avni 2008), and recent excavations at Shivta demonstrate that its gradual decline began in the mid-sixth century and ended in the total abandonment of the village in the ninth century (Tepper et al. 2018).

Studies of pottery from archaeological excavations in various sites, published in the past twenty years (e.g., Tiberias: Stacey 2004:89–166; Caesarea Maritima: Arnon 2008a; 2008b; 2008c; Ramla: Cytryn-Silverman 2010; sites in Syria and Jordan: e.g., Walmsley 1995; Villeneuve and Watson 2001), have greatly enriched the knowledge of ceramics of the Byzantine and Early Islamic periods, and entailed a reconsideration of the classification of certain ceramic vessel- and lamp-types, allowing for better dating of archaeological remains.

A concise review (Cameron 2013), accompanied by a vast categorized bibliography, specifies the various questions and the surging scholarship associated with the transition from 'Late Antiquity' to the Islamic world; it also emphasizes the growing attention to the eastern Mediterranean, the Sasanian empire, Ethiopia and the Arabian peninsula. Indeed, one of the latest studies (Bowersock 2017) explores the dynamic environment in Arabia from the mid-sixth to the mid-seventh centuries, in which Islam consolidated, and from which it spread to neighboring lands.

An extensive evaluation of the abundant archaeological data available today from hundreds of sites in Israel and Jordan has been recently undertaken, addressing the issues traditionally deliberated by scholars focusing on historical sources (Avni 2014). The book's main argument is that the Byzantine–Islamic transition was a slow and gradual process spanning the sixth–eleventh centuries, involving a wide regional variability and diverse settlement patterns, and culminating with the collapse of urban and rural systems. The detailed study of the archaeological record from Jerusalem concludes that the city had evolved into a monolithic Christian entity during the Byzantine period, and transformed in the Early Islamic period into a

multicultural city, while maintaining its former Byzantine urban layout (Avni 2014:109–159).

The following chapters address these issues regarding the Byzantine–Islamic transition, in light of the glass corpus from Jerusalem and its environs, and explore how glass finds illuminate cultural and religious-ethnic aspects of the various populations that had used them.

1.2.2 Research of Glass Finds from the Byzantine and Early Islamic Periods

Glass from the Byzantine Period

The research of glass from the Near East is a relatively young field, and with its beginnings in the nineteenth century it focused on glass artifacts from museum collections (Israeli 2003:93). The publication of the glass finds from the excavations of the expedition of the University of Michigan at Karanis in Egypt in the 1920s, comprised one of the first scientific reports dedicated exclusively to glass (Harden 1936¹). The Karanis publication was followed by Harden's exploration of the development of glass in Syria-Palestine, addressing issues pertaining to the time span under consideration in this book (e.g., Harden 1949; 1962; 1964). However, some of the glass types, now known to date from the Byzantine period, were often assigned a date no later than the fourth century, based on examples from the western part of the Roman Empire (Barag 1970b:2–3). Additionally, many of the glass vessels published by Harden and others (e.g., Illife 1934; Makhoul 1939; Bagatti and Milik 1958) originated from tombs that had been in continuous or intermittent use for a considerable length of time, raising questions of the vessels' contexts and datings (Harden 1965).

The first major corpus of glass finds from Gerasa in Jordan was published by Baur in 1938, and most of the glass finds were associated with the fourth or fifth century, based on the quality and forms of the vessels (Baur 1938:518–519). These dates are for the most part stratigraphically unsubstantiated and are partially based on the erroneous understanding and dating of a site at Jericho.²

The broader issue of glass in the Byzantine world was brought up in Philippe's book covering the fifth through the sixteenth centuries (Philippe 1970). The book included a discussion on Christian glass from Syria, and a section on glass finds from Palestine in the fifth–seventh centuries, surveying material from several excavations known at the time.

The Ph.D. dissertation presented by Barag to the Hebrew University of Jerusalem in 1970 was the first comprehensive study of glass from the Roman and Byzantine periods

from excavations in Israel and the surrounding region (Barag 1970b). That meticulous work covered much of the material known at the time, and re-evaluated the contexts and chronology of the glass finds, based on a scrutinized examination of the sites' stratigraphy, pottery and coins. The discovery in the 1960s of a workshop for the production of glass vessels that functioned during the second half of the fourth century at Jalame near Yoqne'am in the western part of the Jezreel Valley, yielded a landmark research into glass typology and manufacture (Weinberg 1988). Another relevant key publication is the report on the excavation of a church at Shave Ziyon in the western Galilee, its glass vessels forming a typical Byzantine-period assemblage, which comprises the most recurrent types found in many contemporaneous sites in Israel (Barag 1967a).

Lately, Keller (2010b) reviewed the history of research into Byzantine glass from the early art-historical approach and the first recognition of decorated vessels in the late nineteenth century, through the archaeological contributions on glass finds since the 1930s to date, including an account of some of the most important publications of glass finds from excavations in Israel since 1950 (Keller 2010b:5–6). Selections of glass assemblages from excavations in Israel and the neighboring countries, and from collections, as well as specialized topics in the study of glass, are presented below.

Glass from the Early Islamic Period

One of the first publications of a corpus of Islamic glass from an archaeological context presented the glass excavated at Samarra (in modern-day Iraq), which had functioned as the capital of the Abbasid caliphs in the years 836–892 (Lamm 1928). Shortly afterwards, Lamm published his monumental work encompassing all the then-known glass and hard-stone objects from the Near East, dated from the seventh to the fifteenth centuries (Lamm 1929–1930). The study of Early Islamic glass was further enhanced by Lamm's article on the glass finds discovered in the excavations at Susa in Iran, most of which correspond to the eighth–ninth centuries (Lamm 1931), as well as by his volume on glass from Iran in the National Museum in Stockholm (Lamm 1935).

In the following decades some excavation reports of sites containing an Early Islamic phase included a limited account on the period's glass; among those are reports from sites in Syria (e.g., al-Mina: Lane 1938), Iraq, Iran and Uzbekistan, as well as farther west in Spain and North Africa (see references in Carboni 2001a:16). One of the richest Early Islamic glass corpora was excavated in the 1930s and 1940s at Nishapur in Iran, and published by Kröger in 1995. The glass finds, both imported and locally-made, are mostly associated with the period in which the city thrived as a commercial center in the ninth–eleventh centuries (Kröger 1995).

Two discoveries valuable to the study of Early Islamic glass were published in the past two decades. The treasure sealed

¹ Harden believed the site was abandoned around 460; however, a revision of the excavation report established that the site was still occupied after the fifth century, and that some of the glass finds are typical of the sixth–seventh centuries (Whitehouse 1999).

² See discussion in Section 3.1.

in 874 in the Famen Temple in northeastern China included 19 intact glass vessels evidently datable to the ninth century (Koch 1996; Li et al. 2016). The other milestone is the discovery of a shipwreck, sunk shortly after 1025 at Serçe Limani, off the southern coast of Asia Minor. Its cargo, which included lumps and fragments of glass for recycling, sheds light on the trade, chronology and typology of glass from the late tenth–early eleventh centuries (Bass et al. 2009).

Several general overviews sketchily referred to Early Islamic glass: some addressed problems of chronology and provenance (e.g., von Saldern 1996), and others focused mostly on luxurious specimens (e.g., Carboni 2002; Brosh 2003:319–321). Schick drew attention to several publications on glass of that period, particularly from Pella and Gerasa, in his survey on the archaeology of Palestine in the Early Islamic period (Schick 1998:94–95), and Walmsley briefly mentioned a few studies into glass typology and technology in his book on Early Islamic Syria (Walmsley 2007:65–66).

As for Early Islamic glass from Israel, no comprehensive regional study has been compiled so far. Barag in his Ph.D. dissertation on Roman and Byzantine glass (Barag 1970b, and see above) re-examined certain assemblages that had been dated to the Byzantine period, and detected that some glass finds should be attributed to the Early Islamic period (e.g., from Jericho: Barag 1970b:51–52). In the 1980s, Engle explored various aspects of glass, particularly finds from Jerusalem (e.g., Engle 1984; 1987).

The glass finds from the shops on the Umayyad-period street at Bet She'an provided a corpus well-dated between 738, when the shops had been built, and the earthquake in 749,³ when they collapsed (Hadad 2005:21). A short overview on Early Islamic glass in the region was incorporated in the final report of an excavation north of the White Mosque at Ramla (Gorin-Rosen 2010). Additionally, many excavation reports comprising an account of the Early Islamic glass finds have been published, mainly in the past two decades (see below); alas, some of these publications have used general terms such as 'Early Islamic' or 'Early Arab', while others have assigned a very wide chronological range to many types (and see *Dating Terminology* in Section 3.1).

Glass from Excavations in Israel and Neighboring Countries

Many assemblages containing glass finds from the Byzantine period and/or the Early Islamic period have been studied since the 1990s from excavations in various types of settlements in Israel (see Map 1.2). Extensive glass corpora from major ancient cities have been published, particularly in the past decade, from Jerusalem (see Chapters 5 and 6), Caesarea Maritima (e.g., Peleg and Reich 1992; Pollak 2000; 2003; Israeli 2008), Bet She'an

(e.g., Agady et al. 2002; Hadad 2005; Hadad 2006; Winter 2011; Katsnelson 2014b), Ramla (e.g., Gorin-Rosen 2008b; 2009b; 2010; 2016; Gorin-Rosen and Katsnelson 2005; Jackson-Tal 2008; Pollak 2005; 2007; Winter 2015b), Tiberias (e.g., Johnson 2000; Amitai-Preiss 2004; Lester 2004a; 2004b; Hadad 2008), and Ashqelon (e.g., Katsnelson 1999; Katsnelson and Jackson-Tal 2004).

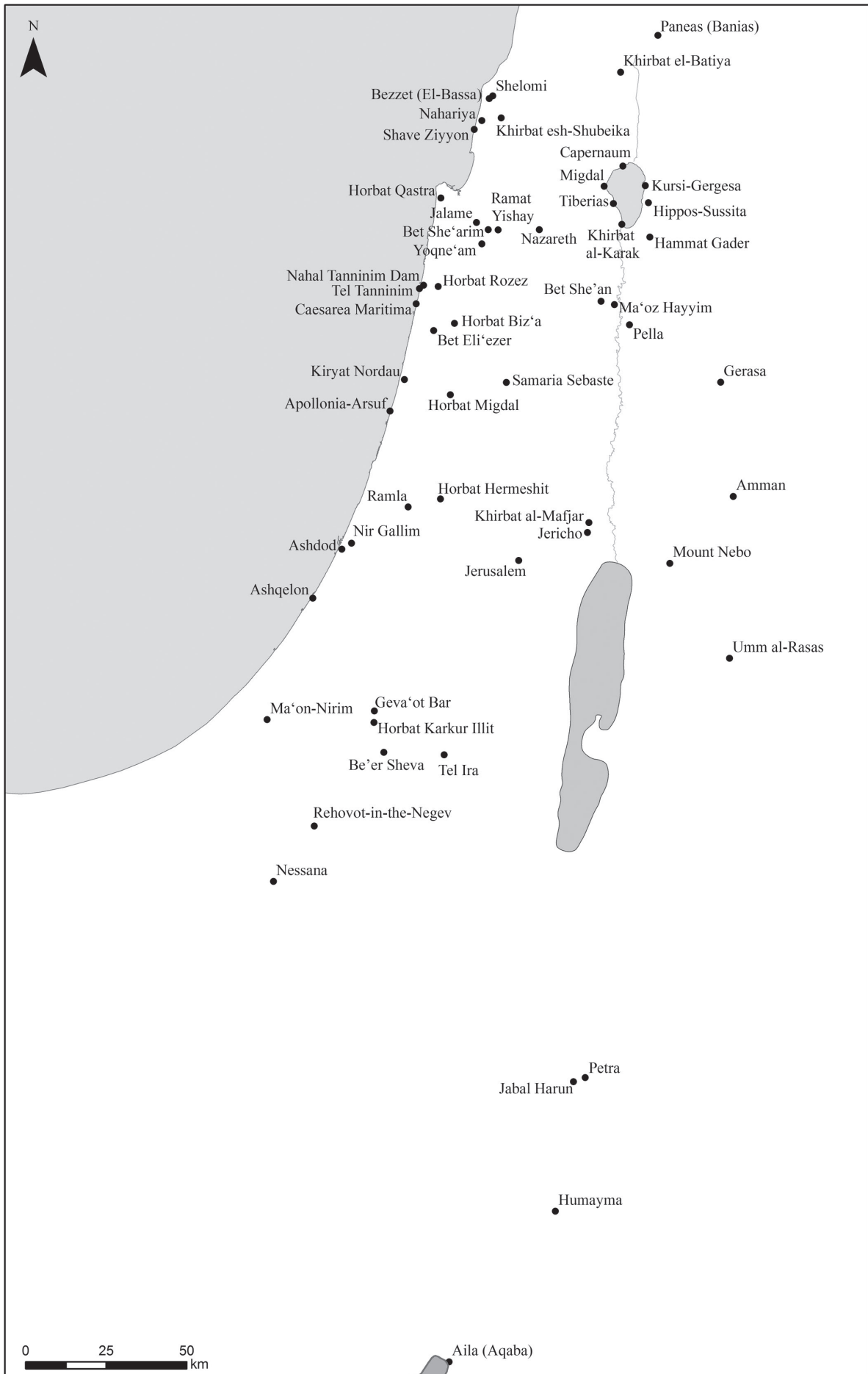
Glass finds from the Byzantine and/or Early Islamic periods from various types of smaller sites around the country were also documented, for example, Khirbat el-Batiya (Gorin-Rosen 2006b), Ahihad (Porat and Getzov 2010), Khirbat esh-Shubeika (Gorin-Rosen 2002b), Kursi-Gergesa (Barag 1983; Katsnelson 2014a), Migdal (Gorin-Rosen 2001b), Khirbat al-Karak (al-Sinnabra) (Delougaz and Haines 1960), Hammat Gader (Cohen 1997; Lester 1997), Yoqne'am (Lester 1996; Gorin-Rosen 2005b), Horbat Qastra (van den Brink et al. 2013), Horbat Rozez (Winter 2010a), Horbat Nazur (Winter 2010b), Horbat Hermeshit (Winter 1998), Ramat Rahel (Jackson-Tal 2016; Katsnelson 2016), Ashdod (Barag 1967b), Nir Gallim (Gorin-Rosen 2002c), Horbat Karkur Illit (Katsnelson 2004), Rehovot-in-the-Negev (Khirbat Ruheiba) (Patrich 1988), Jericho (Sellin and Watzinger 1913; Baramki 1938; Baramki and Stephan 1935), and many more.

Excavation reports containing an account of glass finds from the Byzantine and/or Early Islamic periods have also been published more regularly since the late 1980s from the neighboring countries (see Map 1.2). Studies were conducted on glass from major ancient cities and smaller sites in Jordan, such as Pella (Smith and Day 1989; O'Hea 1992; 1993), Gerasa (Kehrberg 1986; Meyer 1986; 1988; 1989a), Umm al-Rasas (Alliata 1991; Piccirillo 1991), the Memorial of Moses on Mount Nebo (Saller 1941), Petra and its surroundings (O'Hea 2001; Keller 2006; Keller and Lindblom 2008), Humayma (Jones 2013) and Aila (Aqaba) (Jones 2005), as well as a regional typological review of the glass finds from northern Jordan and southern Syria (Dussart 1998).

Byzantine and/or Early Islamic glass assemblages from Syria were recovered, for example, at Jabal Says (Usais; Bloch 2011), Bosra (Wilson and Sa'd 1984) and Qal'at Sem'an (Dussart 2003). A few final reports on glass from these periods were published from Lebanon (e.g., Beirut: Foy 2000a; Jennings 2006) and Cyprus (e.g., Salamis: Chavane 1975; Kourion: Young 2007). The past few decades also saw the publications of substantial Byzantine and/or Early Islamic glass corpora from Egypt, among them those from Alexandria and its environs (e.g., Rodziewicz 1984; Kucharczyk 2005b; 2007; 2010), from Fustat (ancient Cairo; Scanlon and Pinder-Wilson 2001; Shindo 1992; 2000; Foy 2000b; Foy, Picon and Vichy 2003) and from the Sinai peninsula (Gorin-Rosen 2000b; Shindo 2003; 2005; 2007; Church A-152 at Ostrakine⁴).

³ See n. 44, in Chapter 2.

⁴ The Northern Sinai Project was headed by E. Oren, and the glass finds from Church A-152 at Ostrakine were studied and submitted for publication by Y. Gorin-Rosen and the author.



Map 1.2. Location map of major sites mentioned in the book.

Specialized Topics in the Study of Glass

Certain specialized topics pertaining to glass from the Byzantine and Early Islamic periods have also been considered separately through the years, among them the uses of glass in churches (Keller and Lindblom 2008) and as architectural decoration (Carboni 2003), liturgical vessels and wineglasses (Gorin-Rosen and Winter 2010), glass lamps (e.g., Crowfoot and Harden 1931; Hadad 1998; 2003; Olcay 2001; Keller 2010a; Foy 2011), ‘pilgrim’ vessels (e.g., Barag 1970a; 1971; Newby 2008), kohl bottles (Brosh 1993), stain-painted ware (e.g., Lehrer-Jacobson 1990–1993; Watson 1998; Carboni 2001d), Islamic cameo-cut vessels (e.g., Whitehouse 1993; 2003a), windowpanes (e.g., Meyer 1989b; Brosh 1990; Gorin-Rosen 2000b:238–240; Whitehouse 2001d; Foy 2005e; Foy and Fontaine 2008; Schibille, Marii and Rehren 2008), glass mosaic tesserae (e.g., James 2006; 2010; Entwistle and James 2013), and glass weights and stamps (e.g., Miles 1971; Balog 1976; Morton 1985; Entwistle and Meek 2015; Schibille et al. 2016). A review of Byzantine glass by Keller (2010b) also touches on the state of research of some of these topics (Keller 2010b:5–6).

Recently, research has become increasingly focused on the study of the patterns of glass production and distribution, as well as on the identification and classification of distinctive compositional groups of glass, utilizing chemical and isotope analyses (see *Production of Raw Glass and Vessel Glass* in Section 7.1).

Glass from Private and Museum Collections

Many private and museum collections hold glass vessels allegedly retrieved from Israel and neighboring lands. These pieces were mostly acquired in the antiquities market and generally lack a secure provenance; therefore, collection pieces carry much less significance for scholarly, historian-oriented research compared with finds recovered in scientifically conducted archaeological excavations. Nevertheless, collection pieces are helpful in establishing the complete forms of excavated fragmentary finds.

Some glass collections and exhibitions have been documented in extensive catalogues. Several of these catalogues include scholarly articles on issues related to glass from the Byzantine and Early Islamic periods in the region; noteworthy among them are the catalogue of ancient glass in the Israel Museum in Jerusalem (Israeli 2003; with a chapter on Islamic glass, Brosh 2003), the review of the Early Islamic glass in the L.A. Mayer Memorial Institute for Islamic Art in Jerusalem (Hasson 1979), the catalogue of the Ernesto Wolf collection (Stern 2001), the catalogue of the Islamic glass exhibition held in the Metropolitan Museum of Art in New York city (Carboni and Whitehouse 2001), the catalogue of the Al-Sabah collection in the Kuwait National Museum in Kuwait City (Carboni 2001b), the volume on glass in the Nasser D. Khalili collection of Islamic art (Goldstein 2005, with a relevant contribution by Kröger), and the first two volumes of the catalogue on Islamic glass in the Corning Museum of Glass in New York state (Whitehouse 2010; 2014).