THE SEABORNE MIGRATION OF THE PHILISTINES

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Tristan Joseph Barako

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Advisor: Lawrence E. Stager Author: Tristan Joseph Barako

Abstract: The Seaborne Migration of the Philistines

The intrusive nature of the Philistine material culture, which suddenly appears in southern coastal Canaan in the first half of the twelfth century BCE, has never been in doubt. Moreover, it is widely acknowledged that the origin of this material culture is to be found in the Aegean/Mycenaean world, which, by the end of the thirteenth century, encompassed much of the eastern Mediterranean region. Precisely how the Philistines transported themselves and their material culture from their original to their adoptive homeland, however, has never been adequately explained.

A cursory glance at a map quickly reveals that travel from most proposed Philistine homelands (*i.e.*, mainland Greece, the Aegean Islands, Crete, Cyprus) to southern coastal Canaan require travel by sea; however, travel from two others (*i.e.*, coastal Asia Minor, Cilicia) do not. A large-scale, overland migration from these latter regions, although possible, would have been extremely difficult because of the geographic barriers present along this route. More telling is the pattern of sites that have produced the so-called, Sea Peoples material culture: they are all located on or near the coast, thus strongly suggesting that the settlers of these sites arrived by sea.

An examination of the excavation and survey data relating to southern coastal Canaan at the time of the Philistine settlement indicates the influx of a large, foreign population. The question remains, however, was maritime capability *ca*. 1200 BCE commensurate to the task of transporting a great number of people across considerable distances? Evidence contained in texts, iconography, and the results of underwater archaeology pertaining to Late Bronze Age seafaring indicates that, indeed, it was.

A secondary source of data for the Philistine migration is later, better documented, seaborne migrations, such as the Greek colonization of the western Mediterranean. Contemporary histories combined with extensive excavation of the settlement regions provide a clearer picture of most aspects of these later migrations by sea than is available for the Philistines. Finally, the application of migration principles generated in other social scientific fields to the context of the Philistine settlement leads to a broader understanding of the process of the Philistines' migration.

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List of Maps, Tables, Charts, and Illustrations

Maps

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Abbreviations

AA *Archäologischer Anzeiger*

AAA *Annals of Archaeology and Anthropology*

AAAS *Annales archéologiques arabes syriennes*

AF *Altorientalische Forschungen*

AJA *American Journal of Archaeology*

AJBA *Australian Journal of Biblical Archaeology*

AM *Mitteilungen des Deutschen Archäologischen Instituts*, Athenische Abteilung

Am Anth *American Anthropologist*

ANEP *The Ancient Near East in Pictures Related to the Old Testament* (Second edition with Supplement), edited by J.B. Pritchard. Princeton: Princeton University Press, 1969. First edition: 1954.

ANET *Ancient Near Eastern Texts Relating to the Old Testament* (Third Edition with Supplement), edited by J.B. Pritchard. Princeton: Princeton University Press, 1974. First edition: 1950.

Ann Rev Anthropol *Annual Review of Anthropology*

AnSt *Anatolian Studies*

AOAT *Alter Orient und Altes Testament*

AR *Archaeological Reports* (Supplement to *JHS*)

ARE *Ancient Records of Egypt*, Volumes I–IV (Reissue), translated by J.H. Breasted. New York: Russell and Russell, 1962. Original publication: Chicago: Chicago University Press, 1906.

ASA *Annales du service des antiquités de l'Égypte*

ASAA *Annuario della scuola archeologia di Atene e delle missioni italiane in oriente*

ASOR *American Schools of Oriental Research*

BA *Biblical Archaeologist*

BAAL *Bulletin d'archéologie et d'architecture libanaises*

BAR *British Archaeological Reports*

BAR-IS *British Archaeological Reports, International Series*

BASOR *Bulletin of the American Schools of Oriental Research*

BBSAJ *Bulletin of the British School of Archaeology in Jerusalem*

BCH *Bulletin de correspondance hellénique*

BIALond *Bulletin of the Institute of Archaeology, University of London*

BiblAR *Biblical Archaeology Review*

BIES *Bulletin of the Israel Exploration Society*

BIFAO *Bulletin de l'institut français d'archéologie orientale*

BiOr *Bibliotheca Orientalis*

BN *Biblische Notizen*

BSA *Annual of the British School at Athens*

BSFE *Bulletin de la sociéte française d'égyptologie*

CBQ *Catholic Biblical Quarterly*

CRAIBL *Comptes rendus des séances de l'académie des inscriptions et belles-lettres*

CAARI *Cyprus American Archaeological Research Institute*

CAT *The Cuneiform Alphabetic Texts from Ugarit, Ras Ibn Hani and Other Places (KTU: Second, enlarged edition)* (Abhandlungen zur Literatur Alt-Syrien-Palästinas und Mesopotamiens 8), edited by M. Dietrich, O. Loretz, and J. Sanmartín. Münster: Ugarit-Verlag.

DdA *Dialoghi di archeologia*

EA *Tell el-Amarna Tablets*, translated by W.L. Moran. Baltimore: Johns Hopkins University Press, 1992.

EI *Eretz Israel*

ESI *Excavations and Surveys in Israel*

FGH *Die Fragmente der Griechischen Historiker* (1926–58), edited by F. Jacoby. Leiden: E.J. Brill.

GGM *Geographici Graeci Minores* (1855–1861), edited by C. Müller.

IEJ *Israel Exploration Journal*

IJNA *International Journal of Nautical Archaeology*

INA *Institute of Nautical Archaeology*

JANES *Journal of the Ancient Near Eastern Society of Columbia University*

JAOS *Journal of the American Oriental Society*

JARCE *Journal of the American Research Center in Egypt*

JBL *Journal of Biblical Literature*

JCS *Journal of Cuneiform Studies*

JEA *Journal of Egyptian Archaeology*

JESHO *Journal of the Economic and Social History of the Orient*

JFA *Journal of Field Archaeology*

JHS *Journal of Hellenic Studies*

JNES *Journal of Near Eastern Studies*

JPOS *Journal of the Palestine Oriental Society*

JRS *Journal of Roman Studies*

JSOT *Journal for the Study of the Old Testament*

JSSEA *Journal of the Society for the Study of Egyptian Antiquities*

KBo *Keilschrifttexte aus Boghazköi*

KRI K.A. Kitchen, *Ramesside Inscriptions*, I–VI. Oxford: B.H. Blackwell Ltd.

KTU *Die Keilalphabetischen Texte aus Ugarit*, Volume 1 (AOAT 24), edited by M. Dietrich, O. Loretz, and J. Sanmartín. Kevelear and Neukirchen-Vluyn: Butzon & Bercker and Neukirchener, 1976.

KUB *Keilschrifturkunden aus Boghazköi*

LAAA *Annals of Archaeology and Anthropology*, Liverpool

MDAIK *Mitteilungen des Deutschen Archäologischen Instituts,* Kairo

MDOG *Mitteilungen der Deutschen Orient-Gesellschaft*

MHR *Mediterranean Historical Review*

MVAG *Mitteilungen der Vorder-Asiatisch-Ägyptischen Gesellschaft*

NEA *Near Eastern Archaeology*

NG *National Geographic*

OIC *Oriental Institute Communications*

OJA *Oxford Journal of Archaeology*

OLA *Orientalia Lovaniensia Analecta*

OLZ *Orientalistische Literaturzeitung*, Berlin

OpArch *Opuscula Archaeologica*

OrAnt *Oriens Antiquus*

PBP Philistine Bichrome Pottery

PCPS *Proceedings of the Cambridge Philological Society*, Cambridge

PEFA *Palestine Exploration Fund Annual*

PEFQS *Palestine Exploration Fund Quarterly Statement*

PEQ *Palestine Exploration Quarterly*

PMP Philistine Monochrome Pottery

QDAP *Quarterly of the Department of Antiquities in Palestine*

RArch *Revue archéologique*

RB *Revue biblique*

RDAC *Report of the Department of Antiquities, Cyprus*

RdÉ *Revue d'égyptologie*

RS *Ras Shamra*

ScrHier *Scripta Hierosolymitana*

SEG *Supplementum Epigraphicum Graecum*

SIMA *Studies in Mediterranean Archaeology*

SSEA *Society for the Study of Egyptian Antiquity*

TA *Tel Aviv*

TAPA *Transactions and Proceedings of the American Philological Association*

TAPS *Transactions of the American Philosophical Society*

UF *Ugarit-Forschungen*

VT *Vetus Testamentum*

ZÄS *Zeitschrift für Ägyptische Sprache und Altertumskunde*

ZAW *Zeitschrift für die Alttestamentliche Wissenschaft*

ZDPV *Zeitschrift des Deutschen Palästina-Verein*

Introduction

The intrusive nature of the Philistines in southern coastal Canaan during the first half of the twelfth century[1] is not in doubt; moreover, their material culture suggests that the Aegean/Mycenaean world was their homeland. In contrast to the scholarly focus that has been placed upon their origins and compared to their well-understood settlement in Philistia, very little is known or has been ventured in the scholarly literature about how the Philistines transported themselves and their culture overseas.

At first glance, there are two main reasons to suppose that the Philistines migrated mainly, if not entirely, by sea: 1) almost all "Sea Peoples" sites are coastal and distributed discontinuously so as to appear as beachheads, thus strongly suggesting that the people who settled them arrived by sea; and 2) there is ample, ancient textual evidence to connect the Philistines and their congeners with ships and seafaring.

Two basic preliminary assumptions need to be established, however, before reconstructing a seaborne migration: 1) there was a population influx from elsewhere and 2) this population's place of origin necessitated travel by sea in order to reach their ultimate destination (*i.e.*, southern coastal Canaan). An examination of the excavated Philistine Pentapolis sites (*i.e.*, Ashdod, Ashkelon, Tel Miqne-Ekron[2]) reveals the simultaneous and uniform appearance of numerous, unprecedented material culture traits (see Chapter 1). These traits reflect innovations in a variety of cultural and conceptual

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[1] Unless otherwise noted, all centuries and millennia referred to or numerical dates given refer to BCE (Before the Common Era).

[2] Henceforth to be referred to simply as Tel Miqne. Tel Miqne can be confidently identified with Philistine Ekron based on the discovery of a royal monumental inscription at the site, which was dedicated by Achish, the ruler of Ekron (שר עקרן; Gitin, Dothan, and Naveh 1997).

ways, which include pottery production, animal husbandry, food preparation, textile manufacturing, architecture, and cultic practice. When viewed collectively, they reveal a significant break from the preceding material culture of the region, namely, the indigenous Canaanite. Combined with contemporary (*i.e.*, Papyrus Harris I) and later (*i.e.*, Onomasticon of Amenope, Hebrew Bible) textual notices attesting to the settlement and continued presence of the Philistines in southern coastal Canaan, little doubt can remain regarding the first assumption above.

The problem of Philistine origins has been taken up by many, and yet remains largely unresolved (see Chapter 2A, pp. 36–39). Now that the Philistine material culture is more clearly understood as a result of extensive excavations at major Philistine Pentapolis sites and its similarity to the material culture of the Mycenaean world is readily apparent, the geographical range of their putative homeland has come into sharper focus. By the end of the Late Bronze Age the Mycenaean cultural sphere of influence encompassed mainland Greece, the Aegean Islands, coastal Asia Minor, Crete, Cyprus, and Cilicia. With the exception of coastal Asia Minor and Cilicia, settlers from the rest of these regions must have traveled by sea in order to reach southern coastal Canaan. The journey from coastal Asia Minor and/or Cilicia to southern coastal Canaan — although possible by land — was much easier when made by sea, as I shall argue below (see Chapter 2C–D, pp. 66–77).

Beyond the question of the historical existence of a seaborne migration, there are also questions concerning details of the migration: 1) what was the scale?; 2) if it was large, were maritime technology and seamanship of the time commensurate to the task?; 3) was it an abrupt or gradual peopling of southern coastal Canaan?; 4) was there an

additional component of overland movement, as the Medinet Habu reliefs of Ramsses III seem to indicate?; and 5) what was the nature of the Philistines' initial encounters and interaction with the previous inhabitants of the region?

The primary sources of data bearing upon these questions are: 1) ancient texts relating to the Sea Peoples in particular and to maritime matters in general; 2) the archaeological site and survey data from Philistia as well as other regions of the eastern Mediterranean that were a part of the Mycenaean material culture *koine*; 3) depictions of ships roughly contemporary with the initial Philistine settlement; and 4) Late Bronze Age shipwrecks from the eastern Mediterranean, especially the Uluburun wreck.

A secondary source of data is later, better-documented seaborne migrations, such as the Greek colonization of the western Mediterranean, the Viking settlement of the north Atlantic, and the European peopling of the Americas. Contemporary histories combined with extensive excavation of the settlement regions provide a clearer picture of every aspect of these later migrations by sea than is available for the Philistines.[3] Although the historical, technological, and geographic circumstances varied greatly from one migration to another, consistencies in certain details may still emerge, which can be beneficially applied to the Philistine seaborne migration.[4]

When attempting to reconstruct the scale of migration, two problematic issues arise: 1) the estimation of ancient populations based on site excavation and regional

[3] J.L. Davis employed a similar methodology in his study of Minoan colonization in the Cyclades (1980:259).

[4] The methodology proposed and the consistencies anticipated here have been used and observed in sociological studies of modern migrations: "One method of compensating for the lack of data that may exist with respect to a particular migration process is to use information that has been gathered about an analogous or contiguous migration . . . There is persistence over time and space of those migrations that aim at satisfying basic human needs" (Åkerman 1979:288).

survey (see Chapter 3, pp. 91–95); and 2) the identification of ethnicity in the archaeological record (see Chapter 4B, pp. 116–122).

Calculating ancient populations based on excavated sites and/or a regional survey is always a difficult matter, especially in the case of Philistia. Only three of the five Pentapolis sites (*i.e.*, Ashdod, Ashkelon, Tel Miqne) have been excavated down to Early Iron Age strata. Of these, only Ashdod and Tel Miqne have wide enough exposures of the twelfth-century settlements to allow for reasonable estimates of size. Excavation at other sites in Philistia and survey work have yielded few sites with significant amounts of Mycenaean IIIC:1b pottery,[5] the hallmark of the earliest Philistine presence. Therefore, population estimates for Philistia, and in turn for the initial Philistine settlement, must remain speculative.

Despite the widespread agreement regarding the existence of a Philistine ethnicity (cf., however, Sherratt 1998), opinions differ as to the percentage of Philistines at Philistine sites. The perseverance of Canaanite traits in the material culture at Pentapolis sites has led many to conclude that indigenous peoples constituted some portion of the population of Philistia (see especially Bunimovitz 1990). Whether this amalgamated material culture — Cypriote and Egyptian stylistic elements in the pottery are also evident (T. Dothan 1982a:160–85) — reflects the Philistines' tendency to acculturate (Stone 1995), or, indicates a mixed population will significantly affect one's conception of the size of the incoming population.

[5] When referring to the locally made, Mycenaean IIIC:1b pottery of Philistia, Philistine Monochrome Pottery (PMP) will be used. The term Mycenaean IIIC:1b (Myc IIIC:1b) will be retained for the locally made Mycenaean pottery of the twelfth century in other parts of the eastern Mediterranean. Philistine Bichrome Pottery (PBP) refers to the second stage of Philistine ceramic production.

The reconstruction of the historical events leading up to the Philistine settlement is closely connected to this problem of mixed populations and migration scale. If the Philistines assumed the role of foreign conquerors, destroying Canaanite cities and driving out their inhabitants, then it is likely that few Canaanites would have been a part of the subsequent Philistine settlement. If, however, the Philistines were forcibly settled in southern coastal Canaan (as suggested in Papyrus Harris I), or, if they peaceably coexisted alongside the Canaanites, then the size of the incoming Philistine population was probably smaller. Egypt's status in Canaan during the Twentieth Dynasty (1190–1075) would have greatly affected the circumstances surrounding the Philistine settlement. Whether Egypt controlled all of southern Canaan or just the interior and the Jezreel Valley would have dictated the ease or difficulty with which the Philistines established a new homeland.

Once having established that there was a seaborne migration and that it involved a significant number of people, it then becomes necessary to demonstrate that maritime technology was sufficiently developed to have permitted such a population movement. This movement does not simply entail the ability to sail from their place of origin to their ultimate area of settlement, but also involves the capability to transport themselves and their fully developed, urban culture (T. Dothan 1992a:97; Stager 1995:345) across considerable distances. Therefore, these Philistine settlers would have required ships with cargo holds sufficiently large to accommodate those items necessary for the establishment, upon their arrival, of urban centers that were built atop the destroyed, LB Canaanite settlements. A fleet of such ships would have been needed in order to populate

the Pentapolis, assuming that the Philistines were the main inhabitants of these sites during the twelfth century.

Fortunately, there is a wealth of information about Late Bronze Age shipping and seamanship in the eastern Mediterranean derived from a variety of sources: crew sizes can be inferred from the number of oars shown on various ship depictions (Wachsmann 1995:28), as well as from the Linear B tablets (Wachsmann in press a); Ugaritic texts refer to fleet (RS 20.238, RS 20.18, KTU 2.47) and cargo sizes (RS.20.212); and shipwrecks (*i.e.*, Uluburun, Cape Gelidonya) reveal a great deal about ship size, construction, as well as the types and amounts of cargo taken on board (Pulak 1988; 1997; Bass 1967).

To treat these issues and the overall question of a seaborne route for the Philistine arrival in the Levant, the order and content of the chapters is constructed as follows: Chapter 1 establishes the basic assumptions for attributing the Philistine settlement to a large-scale migration. First, this involves identifying the Philistine material culture and demonstrating its intrusive nature in the context of southern coastal Canaan during the twelfth century. The Aegean and/or Cypriote affinities of this intrusive material culture — which can be divided into the four categories of architecture, cult, diet, and household industry — are examined. Second, contemporary and later ancient texts, which attest to the influx and settlement of foreign peoples, namely, Sea Peoples, into those same regions where this intrusive material culture appears, are examined.

Chapter 2 demonstrates that this intrusive material culture and foreign people originated in such a place that travel by sea was necessary in order to reach southern coastal Canaan. A review of all putative Philistine homelands is presented, followed by a

discussion of the possible land migration routes. This includes an examination of the following: 1) the distances between the proposed homeland and southern coastal Canaan; 2) the geographic and demographic obstacles posed by the Levantine coast; and 3) the textual and ethnohistorical data pertaining to rates of speed for overland travel. The possible sea migration routes are discussed in Chapter 5 (see Section G3, pp. 153–56).

Chapter 3 is the first of two chapters concerned with the size of the migrating population. This chapter provides an estimate of the population of Philistia at the time of their arrival *ca*. 1175–1150. The first step is to provide an estimate of the inhabited, areal extent of the initial Philistine settlement, represented here by the Pentapolis sites (*i.e*., Ashdod, Ashkelon, Tel Miqne, Gaza, Gath). This estimation is followed by a review of the many population density coefficients proposed thus far in the scholarly literature, and a selection of the coefficient, expressed in terms of persons/settled hectare (ha), most applicable to the demographic make-up of Early Iron Age Philistia. The application of this coefficient to the estimated, areal extent of the initial Philistine settlement produces a size estimate for the population of the Philistine Pentapolis, which is not, however, necessarily the same as that for the migrating population.

Chapter 4 addresses the size of the migrating population from two perspectives — history and ethnicity. First, there is a reconstruction of the historical events surrounding the Philistines' arrival in southern coastal Canaan. The nature of the Philistines' interaction with the local inhabitants of the area (*i.e*., Canaanites) and with the regional hegemon (*i.e*., Egypt) dictates, to a certain degree, the ethnic composition of the Philistine Pentapolis. Whether the Philistines entered the region under peaceful or hostile circumstances would have set the tone for subsequent relations with the host peoples, and

also may have influenced the Canaanites' decision to live in what are clearly identified as Philistine cities (Josh. 13:3; I Sam. 6:17). The Egyptian presence and attitude towards the Philistine settlement would also have affected the ease or difficulty with which the Philistines migrated overland (if there was such a component to their migration), as the reliefs at Medinet Habu seem to indicate.

The possibility that non-Philistines (especially Canaanites) were among the inhabitants of the Philistine Pentapolis significantly affects any estimate of the migrating population. This notion introduces the subject of the identification of ethnic groups through the remains of their material cultures. First, an overview of the broad subject is provided, followed by an assessment of the potential for identifying ethnic group(s) in the material culture of twelfth-century Philistia.

Chapter 5 compares the size of the reconstructed Philistine population that migrated by sea with the seafaring capability available to inhabitants of the eastern Mediterranean during the Late Bronze and Early Iron Ages (cf. Rouse 1986:172). The Philistines would have had to transport not only themselves, but also those items necessary for the establishment of the urban centers that they founded immediately upon their arrival (T. Dothan 1992a:97; Stager 1995:345). Fortunately, as noted above (see p. 6), there is a great deal of information on the subject of Late Bronze Age seafaring at our disposal to aid us in this task (see especially Wachsmann 1998).

Chapter 6 is a comparative study of a later, better-documented, seaborne migration — namely, the Greek colonization of Magna Graecia and Sicily during the Late Geometric and Early Archaic Periods. Particular attention is given to those aspects of the migration unaffected by the confounding factors of time and place. To be sure, for

each migration there were different catalysts, logistical concerns (*e.g.*, distances traveled, waters traversed, numbers of people involved), levels of maritime technology, and challenges upon arrival in their respective new homelands; however, certain constants may yet emerge. These might include: 1) reasons for migrating; 2) preparations undertaken before departure; 3) supplies taken onboard; 4) geographic setting of adoptive homeland — especially strategic for trade, proximity to natural resources, and agricultural potential; 5) socioeconomic composition of the migrating population; 6) nature and extent of interaction with host culture; and 7) nature and extent of contacts with the homeland.

Chapter 7 examines the concept of migration from a theoretical perspective. It begins with a brief overview of the history of migration as an explanatory model for material culture change in Old World Archaeology and particularly in the ancient Near East. Next, it critically reviews the various scenarios reconstructed to explain the Philistine migration (*e.g.*, intrusion of a military élite, complete population displacement) and categorizes them according to terminology created by archaeological theorists (*e.g.*, Trigger 1968:40–47; Clarke 1978:418–64; Kristiansen 1989:219–20; Gamble 1993:Table 1; Anthony 1997:26–27). Finally, it adopts useful principles generated in various social scientific fields (*i.e.*, demography, geography, economics, statistics) and applies them to the socioeconomic, political, and environmental context of the Philistine migration.

Chapter 8 contains the summary and final conclusions. A reconstruction of the Philistine migration and settlement is presented based on an estimate of the size of the incoming seaborne population, conditioned by the limitations of available seafaring capability, and informed by relevant archaeological theory. This model is then compared

with and supplemented by what is known about other migrations, especially those carried out by sea.

Chapter 1. The Intrusive Nature of the Philistine Material Culture

In the first half of the twelfth century[1] a distinctive material culture without precedent and with certain Aegean affinities suddenly appears at sites in southern coastal Canaan. The hallmark of this material culture is the presence of large quantities of locally made Mycenaean IIIC:1b pottery (Myc IIIC:1b).[2] Thus far, three sites in Philistia have produced such quantities (see Map 1): Ashdod (Dothan and Freedman 1967; M. Dothan 1971:20; Dothan and Porath 1982; Dothan and Porath 1993), Ashkelon (Stager 1985a:62, 64, n. 37; 1991:13–14; 1993:107), and Tel Miqne (Dothan and Gitin 1982:16; Killebrew 1984:9; 1998a:383).

The two remaining pentapolis cities, Gath and Gaza, have not been excavated as extensively, especially not in the Early Iron Age strata. Gath, which most scholars identify with Tell eṣ-Ṣafi (*e.g.*, Bliss and Macalister 1902:35; Rainey 1975; Singer 1993:134; Finkelstein 1996b:228, n. 17; Schniedewind 1998:75; Boaz and Maeir

[1] Both Kitchen (1987:39, 52, Table 5) and Wente and van Siclen (1976:218, Table 1) prefer the low Egyptian chronology, which yields approximate dates of 1184–1153 for the reign of Ramesses III, and thus 1176 for his repulsion and settlement of the Sea Peoples. This date agrees with the evidence from sites where Myc IIIC:1b was found directly above Late Bronze Age destructions that contained Mycenaean and Cypriote imports, as well as items bearing pharaonic cartouches. The chronological debate initiated by Ussishkin (1985:222–23; 1992:118–19; 1995:263–64) and championed by Finkelstein (*e.g.*, 1995:218–24) concerned with lowering the date of the initial appearance of Philistine pottery in Israel is discussed at length in Appendix A.

[2] Originally Mycenaean IIIC:1b, or Philistine Monochrome pottery (PMP), was associated with an earlier wave of Sea Peoples, who were thought to have arrived in southern coastal Canaan towards the end of the thirteenth century (T. Dothan 1982a:289–96; 1983:104–6; M. Dothan 1979:130–31; 1989:67–68). In this reconstruction of events, Philistine Bichrome pottery (PBP) was then connected with a second wave of Sea Peoples — this time the Philistines — who, according to the account from Medinet Habu, appeared in the eighth year of Ramesses III's reign. The gradual shift from PMP to PBP in tight stratigraphical sequence at all three excavated Pentapolis sites, however, indicates stylistic change over time within a single population group, rather than two pottery types introduced by successive incoming groups (A. Mazar 1985b:102–7; Singer 1985:112; Stager 1985a:62). Therefore, the appearance of PMP marks the arrival of the Philistines during the reign of Ramesses III — at least 25 years later than the date proposed by the Dothan's according to the two-wave theory — and PBP corresponds to the second generation of Philistine ceramic production.

1998:33; *contra* Bietak 1993:299; Stager 1995:342–43),[3] was excavated by the British at the turn of the century and produced PBP; however, no PMP was identified (Bliss and Macalister 1902:Pl. 44).[4] A team from Bar Ilan University led by Aron Maeir is currently excavating the site; however, the excavators have so far only reached early Iron II strata (Boaz and Maier 1998). Although there is little question about the location of Gaza, the presence of the modern city over the ancient site makes reaching early Philistine levels difficult. The British expedition in the 1920's did reveal some Philistine painted ware, but this could just as well have been PBP (Phythian-Adams 1923b:29). PMP, some of it imported, has been found at a number of other sites in Israel but in much smaller amounts than in Philistia (see Table 1).

In addition to its sudden appearance in large quantities (<50%; see T. Dothan 1995; L. Mazow, pers. comm.[5]) at Tel Miqne in Stratum VII (= early Iron I), PMP was also produced in an entirely different manner from the previous LB pottery. The differences lie in the clay sources utilized, clay preparation, formation techniques, and firing methods (Killebrew 1998a:399–401; 2000:243–44). It is conceivable that the same results would be obtained if the pottery from Ashdod and Ashkelon were to be tested in a similar fashion.[6]

[3] The identity of Gath is discussed at greater length in Chapter 3, pp. 86–90.
[4] Cf., however, the skyphos depicted in Pl. 35:10, the surface of which is described as being "first covered with a greenish wash" (Bliss and Macalister 1902:89). Also, T. Dothan is publishing a vessel from Tell eṣ-Ṣafi that is probably Philistine Monochrome (reported in Stager 1995:343). Finally, PMP was reportedly collected in a recent survey (Boaz, Maier, and Schneider 1998:156).
[5] Laura Mazow is currently studying the Iron I pottery from Tel Miqne as part of her Ph.D. dissertation at the University of Arizona, Tuscon.
[6] Neutron Activation analysis already carried out on PMP from Ashdod established for the first time that it was locally produced (Asaro *et al*. 1971). For similar results obtained on Tel Miqne material, see Gunneweg *et al*. 1986.

In attempting to establish an intrusive cultural element, the emphasis below will be upon items of clear or likely foreign origin, primarily from Cyprus and the Aegean. It is important to note, however, that many features of the Canaanite material culture survived the Philistine settlement.[7] It has long been acknowledged that certain Canaanite forms (mainly plain wares) were in wide use at Philistine Pentapolis sites (Brug 1985:115–35; Bunimovitz 1990:212) and that Canaanite (as well as Egyptian and Cypriote) styles influenced the development of Philistine pottery (T. Dothan 1982a:185–91). Although most of these non-Aegean stylistic impulses appear in the Bichrome Period, typical, LB Canaanite, common wares such as storage jars, cooking pots, juglets, bowls, lamps, and flasks also appear in the earliest Philistine strata at Pentapolis sites along with PMP.[8] The intention here is not to minimize those Canaanite elements that are readily apparent in strata corresponding to the initial Philistine settlement, but rather to point out unprecedented features in the material culture of that phase, which, considered as a whole, justify reconstructing an influx of foreign people into the region at that time (B.J. Stone 1995:13).[9]

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[7] Based on the "founders' principle" in population biology (MacArthur and Wilson 1967:154–55), Rouse has suggested that migrant groups atypical of the parent population do not necessarily bring with them the entire material culture assemblage of the homeland (1986:10). For the adoption of material culture traits lacking in the recipient culture but present in the donor culture, see Chapter 7, p. 204.

[8] In general, see Brug 1985, pp. 115–135; Gitin and Dothan 1987, p. 202; Bunimovitz 1990, p. 212; Killebrew 1998a, p. 397. Brug's analysis of the perseverance of Canaanite forms at "Philistine Ware" sites is compromised by his focus on sites outside the area of the Philistine Pentapolis, especially Tell el-Far'ah (S), where one should expect to find a greater retention of Canaanite features in the ceramic assemblage. It should be noted that at Tel Miqne, which has the best sample of early Philistine pottery of Pentapolis sites excavated thus far, only the Canaanite storage jar appears along with PMP in "significant amounts" (Killebrew 1998a:397). For the typical, LB Canaanite storage jar at Philistine Pentapolis sites in the twelfth century, see M. Dothan 1971, figs. 82.9, 83.1–3, and Killebrew 1998a, figs. 7.22–25, 10.23–24, 12.16–17; for cooking pots, see p. 30, n. 36 below; for jugs, see M. Dothan 1971, fig. 82.8; for bowls, see M. Dothan 1971, figs. 1.4, 82.2–3; for lamps, see Killebrew 1998a, fig. 12.18; for flasks, see M. Dothan 1971, fig. 74.15, and Killebrew 1998a, fig. 7.21.

[9] Otherwise aptly put: "As with most forms of multivariate explanation, the larger the number of converging traits, the more likely that the true explanation will indeed be migratory activities" (Chapman and Dolukhanov 1992:170–71).

Other aspects of the material culture besides pottery appear at Philistine sites and are also unprecedented in the southern Levant. These can be grouped into the following four categories: architecture, cult, diet, and household industry.

A. Architecture

Circular, freestanding hearths, which are prominently situated in large rooms, are known from Mycenaean Greece, Asia Minor, Cyprus, Crete, and Israel in the Late Bronze and Early Iron Ages (see Map 2; for references, see Table 2). In mainland Greece, such hearths took pride of place in the megaron palaces at Mycenae, Tiryns, and Pylos. Hearth-rooms appear throughout the Bronze Age in Asia Minor at sites such as Beyesultan, Tarsus, Miletus, and Troy.

During the LC IIIA period on Cyprus there are numerous similar hearths at Enkomi, Kition, Maa-*Palaeokastro*, and Alassa-*Paliotaverna*. On Crete, hearth-rooms have been discovered in late LM III and Geometric strata at Kavousi, Mallia, and Khania. In Israel, freestanding hearths have been excavated in twelfth- and eleventh-century strata at Tel Miqne, Ashkelon, Tell Qasile, and, possibly, Ashdod.

The classic megaron hearth-room, as it was first known in Asia Minor and then later in Mycenaean Greece (see Table 2), *stricto senso* does not exist on Cyprus or in Israel. At no site otherwise identified as belonging to the Sea Peoples in these two regions can one find a freestanding, circular hearth surrounded by four pillars inside the *domos* of a megaron-style building. Most hearths are either square (*i.e.*, Alassa-*Paliotaverna*, Enkomi "Megaron"), rectangular (*i.e.*, Enkomi "Rooms 45 and 77," Tel

Miqne Stratum VII), or keyhole-shaped (*i.e.*, Qasile, Ashkelon), and are generally located in rectangular rooms without the longitudinal axis or vestibule of a megaron. Thus far, the closest analogues to Mycenaean hearth-rooms come from Enkomi and Tel Miqne. At Enkomi, a square hearth, which was most probably surrounded by four pillars, stood at the end of a long, rectangular hall (Dikaios 1969:175–76, Pl.34:1, plans 273–74). At Tel Miqne in Stratum V, there was a small, circular hearth slightly off-center in the *domos* of a megaron-style building (Building 350; see T. Dothan 1998a:156–57, figs. 7, 9; see p. 17 below for a possible similar structure in Stratum VII). In spite of the lack of a perfect parallel for Mycenaean hearth-rooms at Philistine sites, the unprecedented appearance of built hearths in prominent buildings at twelfth- and eleventh-century sites in Israel is still significant.

Stone bathtubs in association with major buildings have been excavated at Tel Miqne (for now, see Karageorghis 2000a:273) and Ashkelon (Master and Aja 2000). At Tel Miqne, a fragmentary bathtub was excavated in a room adjacent to the Stratum VI megaron-type building in Field IV. The chalk bathtub from Ashkelon was located in the southeast corner of Room 25, which was part of a large (more than 6 x 6 m in lateral extent), Phase 19 (= mid-twelfth century) building in Grid 38. In the center of this room stood a mudbrick platform (2.10 x 1.30 x 0.12 m)[10] with a row comprised of one stone pillar and two possible pillar negatives immediately to the east (Lass 1994:31, fig. 6). Similar bathtubs are well known from the LH IIIB Mycenaean palaces on the Greek mainland (for references, see Ginouvès 1962:32ff., Pls. 2–3; Vandenabeele and Olivier 1979:178–80); from Crete as early as the MM III, but mostly from the LM III, during

[10] The terracotta bathtub found in the "House of the Frescoes" at Mycenae was located near the entrance to a room, in the center of which stood a large elliptical hearth (Taylour 1995:55, illust. 32).

which period they were mainly used or reused as coffins (for references, see J.W. Graham 1987:255–69);[11] and from Cyprus primarily during the LC III Period (for references, see Karageorghis 2000a:266–74). The location of these bathtubs near throne rooms (*i.e.*, Pylos; Blegen and Rawson 1966:186–89), in sanctuaries (*i.e.*, Palaepaphos-*Skales*; Maier 1976:95–96, Pl. 16:4), and generally in association with major buildings (*e.g.*, Tel Miqne, Ashkelon) strongly suggests a role in regal, ritual, or, at the very least, élite activities.

Philistine cultic architecture (of which hearths and bathtubs may be considered a part) and paraphernalia are complex in their combination of elements from the Aegean and Canaanite worlds (T. Dothan 1982a:219; Bunimovitz 1990:213–16). It is not possible to speak of a purely "Mycenaean" cult in the material culture of Philistia because the incoming population quickly incorporated indigenous, cultic and stylistic elements. In order to isolate aspects of this material culture closest to those of their putative homeland, it is best to look at strata of the initial Philistine settlement (*i.e.*, Ashdod XIII, Tel Miqne VII, Ashkelon[12]). Herein one may hope to find largely intact the intrusive material culture before the blurring process of acculturation set in (B.J. Stone 1995:8–11). A major underlying assumption of this study is that the most important data relating to the Philistines' seaborne migration lie in the archaeological remains of their initial settlements. This assumption is especially pertinent for an attempt to form an accurate

[11] The Linear B ideogram for "bathtub" (= *a-sa-mi-to*) appears at Knossos (*246; KN U 437?, U 5186.1?, Ws 8497.α) and at Pylos (*225 ALV; PY Tn 996.1; see Vandenabeele and Olivier 1979:176–80).

[12] These are the provisionally assigned phase numbers, according to grid, that correspond to the initial Philistine settlement at Ashkelon excavated thus far: Phase 19, Grid 38; pre-Phase 12/Phase 13, Grid 50. Philistine monochrome strata are on the verge of being exposed in most of Grid 38 Upper (equivalent to approximately five 10.00 x 10.00-m squares), which should vastly increase our knowledge of the initial Philistine settlement.

estimate of the size of the incoming population, which, in turn, has a direct bearing on the feasibility of a migration by sea.

Cultic buildings from Philistine sites — of which few have been found — are often discussed in the context of the eastern Mediterranean-wide, Sea Peoples phenomenon (A. Mazar 1980:61–73; 2000:215–23; Burdajewicz 1990; H. Whittaker 1997:66–93). Tell Qasile is the most promising site; however, the earliest settlement (Stratum XII) and sanctuary (Building 319; see A. Mazar 1980:13–20) were not established until the second phase of the Philistine settlement, when bichrome pottery was already being produced (Stager 1995:335, fig. 2). At Tel Miqne, a large, eleventh-century (= Stratum V) shrine or temple that exhibits Aegean characteristics was excavated (Building 350; see Gitin and Dothan 1987:204; 1990:29–35; T. Dothan 1998a:155, fig. 7); however, it was built at least a century later than the initial Philistine settlement. An earlier building with hearth or silo (possibly surrounded by four pillars in the Aegean megaron tradition; see Table 2) was found in the same area and dated to the twelfth century (= Stratum VII; Gitin and Dothan 1987:203). At Ashdod, a possible cult building was found that dates to the eighth century (M. Dothan 1967:132–34, Plan 7), and, finally, no cultic architecture from Philistine strata has yet been identified at Ashkelon.

In brief, although it may be said that Aegean traditions survived in the cultic architecture of Philistia (A. Mazar 1985a:68), the data set is still too small, too late in date, and possesses too many Canaanite features to allow conclusive statements to be made about the ethnicity of those people who used these buildings (Bunimovitz 1990:213–14; Burdajewicz 1990:105–11).

B. Cult

Figurines from Philistia assume a prominent place in discussions of Philistine cult. In her ground-breaking work on Philistine material culture, Trude Dothan demonstrates clear stylistic connections between Philistine and Mycenaean terracotta figurines, especially among the seated and mourning/*psi* types (1982a:219–51). Unfortunately, as is the case with the architecture, most of the evidence comes from later Philistine contexts, that is, Bichrome strata, and from sites outside of the Philistine Pentapolis (*e.g.*, Tell ʻAitun, Azor, Tell Jemmeh). However, the head of a figurine with concave cap, which is reminiscent of both the so-called "Ashdoda" (M. Dothan 1971:129–30, fig. 91, Pl. 82; T. Dothan 1982a:234–35, fig. 9) and Mycenaean types (Mylonas 1956:Pls. 13:1–3, 15:7–9; F. Jones 1956:Pl. 16:1–4), was found in Stratum VII at Tel Miqne (Gitin and Dothan 1987:203). Also, similar heads have been found in recent seasons at Ashkelon in strata characterized by PBP (Bloch-Smith 1998; 1999), as was an "Ashdoda" fragment from a salvage excavation at Netiv Ha'aserah, a site midway between Ashkelon and Gaza (A.Yasur-Landau, pers. comm.). Finally, the head on a bronze linchpin from Ashkelon is in the form of a female and probably represents the same goddess as the terracotta "Ashdodas" (Stager 1998:168).

Other items associated with Philistine cult that exhibit mainly Cypriote affinities include notched cow scapulae, bronze wheels for portable incense burners, elaborate linchpins, and knives combining iron blades with ivory handles. Several scapulae have been found at Tel Miqne (Gitin and Dothan 1987:203–4; 1990:28), one from Stratum VI

(= twelfth century) and the rest from Stratum V (= eleventh century).[13] Several incised scapula fragments have been found in Early Iron Age strata at Dor (Stern 1994:96, fig. 49; 2000:199, fig. 10.6) and, more recently, two additional scapulae appeared at Ashkelon in a PBP stratum (Bloch-Smith 1998). Incised scapulae are most common on Cyprus (*e.g.*, Enkomi, Kition, Myrtou-*Pighades*, Palaeopaphos, Polis), where they commonly appear in twelfth-century, cultic contexts (for Enkomi, see Courtois 1971:277–80, figs. 97, 109–10 [right], 113–14, 128; for Kition, see Webb 1985). They were probably used for divination/scapulomancy (Webb 1985:324–28); however, a musical function has also been suggested (Dunand 1954:146, no.7784, fig. 139 bis;[14] 1973:75; Karageorghis 1990; T. Dothan 1998a:155).

From the floor of the Stratum V cultic building at Tel Miqne (*i.e.*, Field III, Building 350) came a variety of luxury items in metal. Among these were three bronze spoked wheels from a cultic stand, reminiscent of the *mekanôt* from Solomon's temple (I Kings 7:27–33), which find the most and best parallels on twelfth-century Cyprus (T. Dothan:1992b; Catling 1964:207–10; H. Weippert 1992:18–30).[15] A double-headed, bronze linchpin for a chariot wheel was also found (T. Dothan 1993), which now has a single-headed parallel at Ashkelon (see previous page). Although linchpins are known throughout the ancient Near East (Ellis 1966), stylistically these from Philistia have the most in common with contemporaneous, twelfth-century, Cypriote bronzework (T. Dothan 1995:49). Finally, knives with iron blades, bronze rivets, and ivory handles were

[13] Reese, who is currently studying the worked bone from Tel Miqne, has so far found 12 incised scapulae, some of them from sheep/goat (pers. comm., 1999). I also have him to thank for information on unpublished, incised scapulae from excavations on Cyprus (see below, this page).
[14] This incised scapula from Byblos dates to the Neolithic Period.
[15] Cf., however, the four-sided stand without wheels found at Megiddo in Level V (=1200–1000; May 1935:19ff., Pl. 18; Catling 1964:205, Pl. 33:d). It is the only other stand of this type excavated in Israel.

found both on the floor of the temple and, poorly preserved, in twelfth-century contexts at Tel Miqne (T. Dothan 1989b). Perhaps the closest parallel can be found at Qasile in Stratum XII (A. Mazar 1985a:6–8); however, similar knives are known throughout the Mediterranean for this period (for references, see T. Dothan 1989b; A. Mazar 1985a:7–8). It is generally accepted that advances in iron-working were introduced into Cyprus from the Aegean towards the end of the thirteenth century as part of a larger influx of metallurgical innovations brought by Aegean settlers to the island at this time (Snodgrass 1980:341, 345; Stech–Wheeler *et al*. 1981:266–67; Waldbaum 1982:336). The bimetallic, ivory-handled knives from Tel Miqne and Qasile may be seen as part of the same technological diffusion, which began in the Aegean and reached the Levant, probably via Cyprus.[16]

C. Diet

Diet as an indicator of Philistine ethnicity and as evidence for the intrusion of a foreign population begins and ends with the high percentage of pig remains found at Philistine sites. Preliminary results from Tel Miqne and Ashkelon showed a rise in the consumption of cattle and pig at the expense of sheep/goat from the Late Bronze to the

[16] Recent excavations at Ashkelon have revealed an additional practice related to cult, or, at the very least, is the preserved physical correlate of some belief: foundation deposits comprised of an articulated puppy placed within a cooking pot. The practice is without precedent in the Canaanite material culture; however, it (unlike most of the material traits discussed in this chapter) has not been observed at sites in the Aegean region and/or Cyprus. Two "puppy-in-a-pot" foundation deposits were located in Phase 18 (= mid- to late twelfth century) rooms clearly devoted to industrial activities, as evidenced by the numerous burning installations and enigmatic sunken storage jars (see pp. 31–32 below) that accompanied them (Master and Aja 2000). It is noteworthy that Aegean-style cooking pots (see p. 30 below) were used for both deposits.

Early Iron Age (Hesse 1986:21–22, Table 4; Hesse in press).[17] However, this shift was not observed at contemporaneous sites such as Ai, Raddana, Shiloh, and Mount Ebal in the central highlands, the region most often associated with the Israelite settlement. Here, the percentages of pig surprisingly remained near zero in an environment well suited to pig husbandry (Stager 1991:9). This marked discrepancy in pig consumption between regions was attributed to the earliest archaeological manifestation of *kashrut* laws, and pig avoidance/preference was used as an ethnic marker in Early Iron Age Palestine (Stager 1991:9; 1995:344).

More recently, however, there has been skepticism based on two notions: 1) the multiplicity of determining factors in the selection of subsistence strategies, especially in regard to animal husbandry; and 2) the suitability of using material culture traits for the attribution of ethnicity in the archaeological record (Hesse 1990:197; Hesse 1995:217–28; Hesse and Wapnish 1997). In their broad survey of pig husbandry in the ancient Near East, zooarchaeologists Brian Hesse and Paula Wapnish outlined several "pig principles." These "principles" correspond to the ecological, socioeconomic, and cultural variables that affect the decision to raise pig as part of an effective subsistence strategy. When most of these "principles" are applied specifically to the known conditions of the Philistine Pentapolis, however, they do no serious damage to the suggestion that pork

[17] At Ashkelon, pig accounted for 4% of the faunal assemblage in the Late Bronze Age and 19% in the Early Iron Age (Hesse 1986:23, Table 4; Hesse and Wapnish 1997:248). At Tel Miqne there was 8% pig in mixed LB/EI Age contexts and 18% in pure Early Iron Age contexts. At nearby Timnah (Tel Batash), which became a Philistine town by the Bichrome Phase (= Stratum V; see Mazar and Kelm 1993:153; Kelm and Mazar 1995:91–104; A. Mazar 1997:254), pig rose from 5% to 8% of the faunal assemblage between the Late Bronze and Early Iron Ages. The increase of pig may appear to be less pronounced at Tel Miqne and Tel Batash because many of the bone-bearing contexts from *ca*. 1200 were contaminated (Hesse 1990:217). Lev-Tov, who is studying the Iron I faunal remains from Tel Miqne, has reported more recently that pig constitutes only 13% of this assemblage (2000:131, Table 7).

consumption was a mark of Philistine ethnicity. Here, then, is a reconsideration of some of these "principles."

According to the first and second "pig principles," there is a positive correlation between pig husbandry and a settled mode of existence coupled with a moist environment (Hesse 1990:199; Hesse and Wapnish 1997:240–42). In respect to these principles, conditions either remained the same, or, if anything, changed during the time of the Philistine settlement in such a way as to disfavor an intensification of pig exploitation. Based on the available demographic data, there is no reason to suggest that the Philistines led a more settled life than did their Canaanite predecessors. Indeed, the settlement pattern of the Philistine Pentapolis has been said to resemble closely that of the Late Bronze Age Canaanite city-states (Alt 1953:226–30; Bunimovitz 1990:211–12; cf., however, Finkelstein 1996b:226), and, concerning climatic conditions, there is no evidence for a significant change towards a wetter environment in the southern coastal Levant during the first half of the twelfth century, which might explain the sudden rise in the amounts of pig bones found at Philistine sites.[18] Thus, the increased consumption of pig in Philistia during the twelfth century can be attributed neither to an increasingly settled population nor to a changing climate (*i.e.*, principles one and two).

The third "pig principle" states that as agricultural production intensifies, the economic viability of pig-raising diminishes (Hesse and Wapnish 1997:242–46; see also Hesse 1990:200; Redding 1991:23–24). This relationship, argue Hesse and Wapnish, exists for two reasons: 1) agricultural intensification leads to a reduction in the amount

[18] If anything, most scholars would argue that drought conditions prevailed over the eastern Mediterranean *ca*. 1200 (for discussion with further references, see Chapter 7, p. 209). There has not been much support for Liverani's claim that Syria experienced a "little ice age" at this time (1968:81–82).

of land available for pasturage and, therefore, animals that graze, such as pigs, must compete for grain-producing fields; and 2) farming entails plowing and cattle are the primary draught animals. Furthermore, cattle provide a higher rate of protein return (in the form of milk) per unit of labor than do pigs (Redding 1991:24; Hesse and Wapnish 1997:245), which further marginalizes swine in an intensified agricultural setting.

Yet, based on non-faunal evidence it is not possible to state with any degree of certainty whether or not agriculture intensified or decreased between the Late Bronze and Early Iron Ages at Pentapolis sites.[19] If there is a pattern, it appears to show that the percentage of cattle in the faunal assemblage from Tel Miqne remained constant throughout the Late Bronze and into the Early Iron Age (Lev-Tov 1999:14).[20] If cattle percentages in the faunal record can serve as a barometer of agricultural activity, then it appears that there was no change with the arrival of the Philistines. Based on the available evidence, therefore, agricultural intensification cannot serve as an explanation for the rise in the percentage of pig.

A corollary of the third "pig principle" seems to be that "the smaller the site the more extensive the exploitation of pig" (Hesse and Wapnish 1997:246).[21] The two main faunal samples used in this discussion of pig preference and Philistine ethnicity come

[19] Philistia appears as an agricultural, or horticultural, region in the Hebrew Bible (Gen. 26:12–13; Judges 14:5; 15:1, 5; see also Machinist 2000:57), primarily in passages related to the Samson saga, which some biblical scholars date to the twelfth century (*e.g.*, Albright 1970:23; Boling 1975:224). Soggin (1981:226–31) questions the historicity of the settlement of the tribe of Dan west of Benjamin and their subsequent migration north, which serves for some as a *terminus ante quem* for the Samson saga (*e.g.*, Boling 1975:224; Eissfeldt 1975:559). Regardless of one's dating of these texts, the agricultural utilization of the Shephelah and coastal plain could not have changed greatly throughout the Iron Age.

[20] *Bos taurus* comprises 27% of the faunal assemblage in Stratum VIII (Lev-Tov 2000:82, Table 5) and 33% in Stratum VII (119, Table 7). Hesse originally reported that "cattle became much more important with the advent of the Iron Age" (1986:21); however, this statement was made based on a limited sample from the first two seasons of excavation.

[21] Cf., however, Grigson, who argues that pig presence might be positively correlated with urbanism in that swine have the potential to thrive in a city as scavengers (1995:255).

from sites that are anything but small, *i.e.*, Ashkelon and Tel Miqne,[22] yet they have relatively high percentages of pig. Therefore, one must look elsewhere in order to find the probable cause for the unusually high percentage of pig at Philistine sites.

The fourth "pig principle" concerns the role of pig husbandry in rural sectors under the control of a strong centralized authority (Hesse and Wapnish 1997:246; see also Diener and Robkin 1978:202–203; Redding 1991:23; Hesse 1990:200–1). It has been suggested that pig-raising can serve as a means of "economic disengagement and perhaps an expression of political independence" among these rural populations (Hesse and Wapnish 1997:247). Swine husbandry at the household level in rural communities, which generates a commodity of low market value, helps to reduce the household's reliance on redistributive systems controlled by the élite. Again, it is difficult to test this "principle" because all the Philistine faunal data derive from non-rural contexts.

The fifth "pig principle" holds that swine, which reproduce and fatten more quickly than other herd animals, can be part of an effective subsistence strategy for population groups in transition, especially migrants (Hesse and Wapnish 1997:247–48). This suggestion was first made by Pamela J. Crabtree based on her work at West Stow in East Anglia, where the initial Anglo-Saxon settlement of the early fifth century CE was accompanied by a significant rise in the percentage of pig in the faunal assemblage (1989a:209–10; 1989b:106; 1993:295). By the end of the fifth century CE, however, pig

[22] At the time of the Philistine settlement, Ashkelon was probably *ca*. 24 ha in size, if not larger (see Chapter 3A3, pp. 82–84). Tel Miqne expanded from *ca*. 2.50 ha in the Late Bronze Age to *ca*. 20 ha upon the arrival of the Philistines (see Chapter 3A2, pp. 81–82). As of yet, no rural Philistine sites have been excavated that would round out the picture of animal husbandry, which is provided so far only by urban centers. This imbalance in the data is in large part due to the fact that the Philistine settlement was primarily urban in character (T. Dothan 1992:97; Stager 1995:345; see also Chapter 3). Site and survey data from the southern coastal plain indicates an abandonment of smaller sites combined with the consolidation of population in larger sites during the Iron I Period (Finkelstein 1996b:231).

consumption had returned to pre-*Adventus Saxonum* levels, a pattern of animal husbandry seen to reflect the colonizers' "tactical response to the problem of creating a new farming settlement" (Crabtree 1989a:212).

At Philistine sites the point of decline in pig consumption is less clear. At Ashkelon, as at West Stow, it occurred approximately after the first 100 years of settlement (Hesse and Wapnish 1997:248), whereas at Tel Miqne it took place after almost 200 years — in either case, an unusually long period of economic adaptation (Lev-Tov 1999:14; 2000:135). Furthermore, it would be surprising that urban centers of this size and economic complexity should have required 200 (or even 100) years to develop sufficient cattle and sheep/goat herds, and, subsequently, that increased levels of pig husbandry had ever been necessary (L.E. Stager, pers. comm.).[23]

The decision to raise pig in the ancient Near East can be and has been affected by a wide range of ecological, economic, and cultural[24] factors as outlined above. When these factors are tested against the Philistine Pentapolis sites of the twelfth century, especially Tel Miqne and Ashkelon, they fail to show their generative role in bringing about the increased consumption of swine. This observation brings us back to the earlier suggestion that a pork diet was one of the many Aegean cultural traits that the Philistines brought with them when they migrated to southern coastal Canaan (Hesse 1990:218; Stager 1991:9).

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[23] Although there was undoubtedly a rise in the amount of pig being consumed at Philistine sites in the twelfth century, sheep/goat and cattle were still raised in far greater number. At Tel Miqne and Ashkelon both taxa each constituted approximately 40% of the faunal assemblage (Hesse 1990:Table 3; Lev-Tov 2000:Table 7). This breakdown indicates a developed and well-balanced subsistence economy and is not the mark of a society in crisis.

[24] Two "pig principles" not discussed here, which fall primarily under the rubric of "cultural," concern the impact of class and ritual upon pig consumption (Hesse and Wapnish 1997:251–53). Pig remains sometimes appear in greater quantities in archaeological contexts that have been interpreted as belonging to members of the lower classes (see Chapter 7, p. 198) and/or that were devoted to secular activities.

References to pig consumption (*Iliad* [*Il.*] XXIII.30–34; *Odyssey* [*Od.*] I.140–43; V.333–34; XV.19), boar hunting (*Od*. XIX.427–41), and swine herding (*Od*. IV.640; XV.39, 553–55; XVI.36, 260, 464; XX.246; XXI.139) abound in Homer, whose epic poetry, despite its eighth-century composition date, at times reflected conditions in the Greek world at the end of the second millennium (see Chapter 5, p. 141, n. 30). More importantly, the ideogram for pig appears in the Linear A tablets (sign L 113) from Ayia Triada (HT 38.2, 118.1; Calabrese de Feo 1977:45) and in the Linear B tablets (sign 108) from Knossos (Chadwick, Killen, and Olivier 1971:45–55)[25] and Pylos (Bennett 1955:247–48; Chadwick 1973:205–6),[26] thereby attesting to the animal's importance in the palace economies of the Minoan and Mycenaean worlds.

Archaeology has confirmed what the above texts indicate concerning pork's place in the diet of Bronze Age Aegean civilization. Those sites from the Greek mainland, the Greek islands, and Crete that have well published faunal assemblages show pig percentages at the level of, or in most cases higher than, assemblages from Philistine sites (see Table 9).[27] These breakdowns of herd stocks are in marked contrast to contemporaneous Canaanite and "Israelite" sites, where pig rarely constitutes more than one percent of the total assemblage (Stager 1991:9; 1995:344; Hesse and Wapnish 1997:Table 3).

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[25] The relevant tablets from Knossos are the following: Ce 162, 8346 + 8644; Co 903, 904 + 8008, 906, 907, 909 + 7133 + 7835, 910, 7056; C 767; C (3) 905, 979 + 1032 + 7051 + 7052 + 7657, 1030 + 7055, 1039, 7057, 7058 + 7922. In one livestock inventory (Co 907), 21 boars and 60 sows are recorded (Chadwick 1973:213).

[26] Although pigs appear less often in the tablets from Pylos, they are still mentioned in the following texts: Cn 45, 272, 599, 600, 608, 643, 925; Ua 17, 25; Un 2, 138, 853, 1189. According to Chadwick there is a total of 540 pigs recorded at Pylos (1973:198). See also Cn 02, wherein nine towns give as tribute a total of 25 hogs (205–6).

[27] This, however, was not the case for Cyprus, where, based on the limited data available, pig appears to have played an insignificant role in the Late Bronze Age subsistence strategy.

Just as the absence of pig bones at a given site cannot be taken *prima facie* as diagnostic of an ethnic group (Hesse and Wapnish 1997:238), nor can the presence of pig bones. However, in light of the long list of material culture traits with clear Aegean precedents that are common at Pentapolis sites (see pp. 11–32 above and below), it may be best to view pork consumption as simply one more manifestation of Philistine ethnicity (for a discussion of Philistine ethnicity, see Chapter 4B, pp. 116–22). It is the collective force of these traits that make the case for the identification of an intrusive, ethnically-defined population so compelling.

At Hacınebi a similar phenomenon, but in reverse (*i.e.*, a *decrease* in pig consumption associated with the arrival of a foreign population) has been observed.[28] Hacınebi is a fourth-millennium Anatolian site, at which a Mesopotamian Uruk enclave[29] was identified based on ceramic, architectural, glyptic, chipped stone, administrative, and faunal evidence (Stein and Mısır 1994; Stein *et al*. 1996a; 1996b; 1997).[30] "Pre-contact" phases A (= 4000–3800) and B1 (= 3800–3700) exhibit typically local, Late Chalcolithic features (Stein and Mısır in Stein *et al*. 1996a:208–13; Stein *et al*. 1997:112), whereas in the following "contact" phase B2 (= 3700–3200) a Mesopotamian, Late Uruk-style community inhabited a part of the site (= operations 1 and 6) alongside the indigenous

[28] Hacınebi presents an excellent case study for the identification of an intrusive population in an indigenous setting. Many of the findings from Hacınebi parallel those made at Philistine sites and have been interpreted in a similar way, namely, that unprecedented aspects of the material culture, which have a clear derivation from elsewhere, reflect the arrival of a new group of people. For this reason the excavation results from Hacınebi will be cited elsewhere in this dissertation. For example, see p. 31 below for a discussion of the chipped stone industries at Hacınebi and Ashdod.

[29] Uruk enclaves have also been identified in Iran (*i.e.*, Godin), northern Mesopotamia (*i.e.*, Brak, Hamoukar, Nineveh), along the Syrian Euphrates (*e.g.*, Qrayya, Habuba Kabira-South, Sheikh Hassan, Jebel Aruda), and along the Euphrates in Anatolia (*i.e.*, Hassek Höyük, Samsat, Tepecik). For references, see Stein and Mısır 1994, p. 147 and Stein *et al*. 1996, p. 207, nn. 11–12.

[30] Phoenician colony sites in southern Spain, where the intrusive Semitic population appears to have eschewed pig, whereas the indigenous population did not, may also prove to be fruitful for the study of ethnicity and diet (C.R. Whittaker 1974:71; Schofield 1983:299).

population (= operation 2) (213–220). Preliminary analysis of the faunal assemblage indicates that in "pre-contact" phases A, B1, and "post-contact" phase B2 (operation 2 only) there were the anticipated percentages of herd animals for local Anatolian sites: sheep/goat represented between 44 and 45% of the total; pig, between 27 and 32%; and cattle between 20 and 26% (see Chart 1; Stein and Nicola in Stein *et al*. 1996:258, Table 13). But in operations 1 and 6 of "post-contact" phase B2 there was a very different breakdown consistent with Mesopotamian, Late Uruk sites: 83% sheep/goat, less than 7% pig, and less than 10% cow (see Chart 1; 1996:259–60, fig. 35). This intrasite discrepancy in the faunal record is consistent with the other innovations in the material culture mentioned above,[31] which, taken collectively, were interpreted by the excavators to reflect the influx of a migrant population.

D. Household Industry

This category broadly encompasses material culture traits related to textile production (*i.e*., loomweights), food preparation (*i.e*., cooking pots), flint-knapping, and possibly even alcohol distillation (*i.e*., grappa installations). Hundreds of unperforated, unbaked, cylindrical loomweights were found in both PMP and PBP strata at Ashkelon (Lass 1994:32–33; Stager 1991:14–15; 1995:346). Large numbers were also excavated at Tel Miqne (T. Dothan 1995:46–47; Bierling 1998:14, Pl. 7b) and a few were recognized

[31] Cf., however, spindle whorls, which reflect continuity in spinning practices at Hacınebi throughout pre-contact phase A and contact phase B (Keith in Stein *et al*. 1997; Keith 1998:513).

at Ashdod in Stratum XIIIa (Dothan and Porath 1993:64, fig. 24.3–5, Pl. 39:4).[32] Levantine loomweights outside of Philistia are of two general types, both of which are perforated. They are either: 1) made of clay, round, and sometimes described as doughnut-shaped (Sheffer 1981);[33] or 2) made of stone and pyramidal (Stager 1995:346).

Outside of the Levant, however, there are clear parallels to these distinctive loomweights at sites in the Aegean region and on Cyprus, such as at Troy, Mycenae, Tiryns,[34] Pylos, Thera, Lefkandi, Enkomi, and Kition (see Map 3; for references, see Table 3). The strata in which most of these were found also contained Mycenaean IIIC pottery. Unlike Philistine pottery (most of which are fineware types; see Bunimovitz 1990:212), or some of the cultic items discussed above, both of which may serve as luxury goods, loomweights are strictly functional and, therefore, less likely to have been used as commodities in trade. As such, they would have been manufactured and used by those people familiar with them;[35] thus far the evidence shows that this was only the case for inhabitants of the Aegean world, Cilicia, and Cyprus.

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[32] A single, concave, cylindrical, clay "pendant weight," very similar in appearance to those found at Philistine Pentapolis sites, was excavated at Megiddo in Stratum VIA (= 1150–1100; see Loud 1948:Pl. 170:26).

[33] Barber viewed the widespread appearance of this type of loomweight in Iron Age Israel, combined with its discovery at Gordion (de Vries 1980:37–39) and in Late Bronze Age Czechoslovakia (Červinka 1946:141), as evidence for a population movement (*i.e.*, the Sea Peoples) from the northern Aegean and/or the Adriatic to the Levant (1991:302–3). Unfortunately, her book was written before the discovery of the distinctive "Philistine" loomweight, whose distribution, or "trail," is more clearly defined than that of the doughnut-type, and which is highly correlated with other traits of the Aegean and/or Cypriote material cultures. Interestingly, based on the distribution of the doughnut-type loomweight and on the Medinet Habu reliefs, the author reconstructed "shiploads of migrating families" (Barber 1991:303), a scenario very much in keeping with that proposed here (see Chapter 7, p. 206).

[34] In prescient fashion, Schliemann correctly identified those found at his excavations at Mycenae and Tiryns as loomweights (1886:146).

[35] Evidence gleaned from burial goods, relief carvings, seal engravings, texts, and ethnographic studies show that spinning and weaving were activities carried out almost exclusively by women in the ancient Near East (Barber 1991:283–99). This phenomenon will have important implications for the consideration of the scale and make-up of the Philistine migration (see Chapter 4, p. 119 and Chapter 7, pp. 197–98, 206).

Along with the masses of decorated Philistine pottery, a few distinctive kitchen wares appear in strata corresponding to the initial Philistine settlement — namely, serving dishes and cooking pots or jugs (Killebrew 1998a:397; 2000:239–43; Yasur-Landau 1992). At Tel Miqne the familiar LB cooking pot with everted, triangular-profile rim (Killebrew 1998a:fig. 3:6–9) appears less frequently during the Early Iron Age (figs. 6.11, 10.12), having been largely supplanted by a globular, one-handled jug (figs. 7:19, 10:13–14, 12:15; 2000:242–43, figs. 12.2.10, 12.3.11–14 [Form AS 10]; Dothan and Gitin 1994:9, figs. 16–17). A similar shift has been observed at Ashkelon and Ashdod (L.E. Stager, pers. comm.).[36] As with the loomweights, there is a trail of sites in the eastern Mediterranean where these previously unattested cooking jugs are found (see Map 4; for references, see Table 4).

Similarly, the *kalathos*, a shallow bowl with flat horizontal handles, which is also known from the Aegean region (Mountjoy 1986:205) and Cyprus (Kling 1989:145, fig. 10c), begins to appear at sites in southern Canaan (*i.e.*, Tell eṣ-Ṣafi, Tel Ṣippor, Ashdod, Tel Miqne, Ashkelon) in the Early Iron Age (T. Dothan 1998b:23, Pl. 13:3; Killebrew 2000:239–40, figs. 12.2:6, 12.3:1 [Form AS 6]). These two kitchen ware items, *i.e.*, the cooking jug and the *kalathos*, are more enduring cultural clues than the finer tablewares because styles of food preparation, which includes the types of cooking pots and serving dishes used, are less susceptible to change (Bunimovitz and Yasur-Landau 1996:91; Finkelstein 1997a:227–30; see also W.Y. Adams 1968:200; Betancourt 1980:7–9). Manifestations of culinary practices (especially in pottery) have already been used

[36] For the typical LB, everted, triangular-profile rim at Ashdod (= Stratum XIV), see Dothan and Freedman 1967:93, figs. 19.2–5; M. Dothan 1971:173, figs. 81.8–10; Dothan and Porath 1993:169, fig. 12.10. For the same rim in the Early Iron Age (= Strata XIII–XII), see M. Dothan 1971:19, fig. 1.13. For the "Aegean"-

elsewhere in the ancient Near East and in the Aegean region to identify immigrant communities in their transplanted settings (Gophna 1976:32–35; Schofield 1983:299; Yasur-Landau 1992:3).

Chipped stone may prove to be another indication of the arrival of the Philistines. At Ashdod length distributions of sickle segments were significantly different between Strata XIII and XII (Rosen 1993).[37] That this change did not accompany the initial Philistine settlement in Stratum XIII, however, but rather took place when the site began to expand in Stratum XII (Dothan and Porath 1993:13), was seen to reflect the slow development of the city's economic subsistence pattern (Rosen 1993:118). At Hacınebi the establishment of an Uruk enclave in phase B2 (see pp. 27–28 above) was marked by, among many other material culture shifts, changes in the chipped stone industry (Edens in Stein *et al*. 1996b:100–4; Edens in Stein *et al*. 1997:124–27; Edens 1998). Blades from "Uruk" contexts were shorter and narrower than their contemporaneous local Late Chalcolithic counterparts (Edens 1998:2). These observations are based on a sample of over 13,000 pieces (Edens in Stein *et al*. 1997:124), a much more statistically significant data set than that currently available for the Philistine settlement. Once the flints from Tel Miqne and Ashkelon are published, it may be possible to write more on this subject in the future.

Recently at Ashkelon a series of unfamiliar installations were uncovered in early Bichrome strata (= Phase 18) of Grid 38 (Bloch-Smith 1998; 1999; Master and Aja 2000). They consist of a storage jar cut off at the shoulder, sunken, and surrounded by a

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style jug in the Early Iron Age (= Stratum XIII) at Ashdod, see Dothan and Porath 1993:179, figs. 17.4 –5, 23.5–6.

[37] This observation is preliminary as it is based on a site-wide sample of 76 flints (MB II to Iron II) with only 39 of these originating from Strata XIII and XII.

raised, shell-laid pavement.[38] Close by, at least two winepresses and numerous hearths were also found. The director of excavations at Ashkelon, Lawrence E. Stager, has suggested that these enigmatic installations may have been used in the production of grappa. The fermenting residue from the wine-making process (clearly carried out nearby) was spread on top of the heated shell pavement and a lid was placed over the entire "pot-still" causing a distilled product (grappa) to collect at the bottom of the jar.

Wine-making in the region is well attested in antiquity: a seventh-century royal winery was excavated in the same area as the "grappa" installations (Johnson and Stager 1995:95; Stager 1996:62–65); a Byzantine winery complete with presses, treading platforms, vats, kilns, and magazines was uncovered north of the city (Israel 1993); and wine is still being produced in the area to this day (see also Chapter 7, p. 212). Insofar as they lived in an environment historically conducive to viticulture, one might expect the Philistines to have used wine-making by-products to create an alcoholic drink famous throughout the Mediterranean.

Finally, David S. Reese, who will publish the shell from Tel Miqne, has discovered a number of *conus* shells worked in a similar fashion to those found on the Greek mainland, Crete, and Cyprus from the Neolithic Period to the Late Bronze Age (1983; 1985; 1998:280). Although the species (*Conus mediterraneus*) is indigenous to the entire eastern Mediterranean region, ground-down and holed *conus* shells have not yet appeared at any other sites in the coastal Levant (Reese, pers. comm. 1999). Worked *conus* shells have also been found at Ashkelon (personal observation) and possibly at Ashdod (Dothan and Porath 1993:fig. 18.10, 14, Pl. 38.16). Their function is unknown,

[38] Similar installations with stones rather than shells were uncovered at Tel Miqne (T. Dothan, pers. comm.; 1997:102).

although it has been suggested that they may have been used as gaming pieces, toys, or personal ornaments (Reese 1983:356). Lead-filled examples, like those found at Kition (Reese 1985:342, Pls. A:1a, 120:3342A), Perati (346), Mycenae (Reese 1983:357), and Thebes (345), may have served as fishing weights.

E. Conclusions

In sum, the sudden, uniform appearance of numerous, unprecedented material culture traits at sites identified by later biblical sources (*e.g.*, Josh. 13:3; I Sam. 6:17) as comprising a distinct, sociopolitical unit requires explanation. The attribution of culture change to invasion and migration — once a popular recourse in archaeological interpretation — has been reconsidered (and justifiably so) in the past few decades (*e.g.*, W.Y. Adams 1968; Adams, van Gerven, and Levy 1978). The alternative explanatory models of diffusion and evolution, however, do not conform to the archaeological and textual evidence. The sequence of events at excavated Pentapolis sites is consistent: typical, LB Canaanite material culture beneath destruction levels followed by a different material culture characterized by large amounts of PMP pottery (M. Dothan 1971:155–59; T. Dothan 1997:98–99; Killebrew 1996a:1–16).

Contemporary Egyptian and later biblical texts clearly envision an overseas origin for the Philistines. In the description of Ramesses III's Year 8 encounter with the Sea Peoples from his mortuary temple at Medinet Habu, the Philistines, along with the Tjeker, Shekelesh, Denyen, and Weshesh, are said to have "made a conspiracy in their islands" and to have laid waste to Ḫatti, Kode (= Cilicia), Carchemish, Arzawa, and

Alašiya (Edgerton and Wilson 1936:53; J.A. Wilson in ANET 262). Pharaoh's response to this threat is decisive: "he has trampled the foreign lands and the islands . . . the Pelest and the Teresh sailed in the midst of t[he s]ea" ("Rhetorical Stela of Ramesses III"; see Peden 1994:65). The Philistines next appear in Egyptian texts *ca*. 1100, when they are listed along with the Sikils and Sherden among the peoples settled in Canaan ("Onomasticon of Amenope"; see Gardiner 1947:194–205, nos. 268–70). The presence of the Philistines among the inhabitants of Canaan at this time is corroborated by the inclusion of their name in the archaic verse of Exodus 15:1b–18, the "Song of the Sea" ("Horror seized the inhabitants of Philistia," v. 14b), dated by many scholars to the late twelfth or early eleventh century (*e.g*., Cross 1973:121–44; Robertson 1972:155). In the view of the eighth- and seventh-century prophets Amos (9:7) and Jeremiah (47:4), the Philistines came from Caphtor (= Crete).[39] All the evidence thus far, then, points to a population influx into southern coastal Canaan from elsewhere. The question remains, "from where did they come?"

[39] For the traditional identification of biblical Caphtor (Eg. *kftiw*/*kftyw*, Akk. *kap-ta-ra*, Ug. *Kptr*, Gk. *Kabdēros*) with Crete, see Vercoutter 1956 (followed by Görg 1982; Knapp 1985; Wachsmann 1987:93–102 *inter alios*). For the alternative suggestion of Cyprus, see Strange 1980 (followed by Merrillees 1982; Green 1983:42, n. 3, 52, n. 5; for earlier proponents of this identification, see Wainwright 1914:25, n. 2). A major obstacle created by the latter identification then becomes the location of Alašiya, commonly associated with Cyprus. Wainwright's suggestion of Cilica (1931; 1954) has not met with widespread acceptance. An Egyptian topographical list from *ca*. 1400 containing identifiable Cretan placenames — *i.e*., Amnisos, Phaistos (?), Kydonia, Knossos, and Lyktos, from Keftiu, as well as from "Tanaya" (= "Dananoi"?; see especially Edel 1966) — is the strongest piece of evidence in favor of identifying Caphtor/Keftiu with Crete (Kitchen 1973:54).

Chapter 2. An Overland Migration?

The intent in the proceeding pages is not to solve the riddle of Philistine origins, but rather to demonstrate that, regardless of the location of their homeland, an element of migration by sea was necessary. A cursory glance at a map of the eastern Mediterranean quickly reveals that a journey from mainland Greece, the Aegean Islands, Crete, and Cyprus to southern coastal Canaan requires travel, at least partly, by sea; however, travel from coastal Asia Minor and Cilicia does not (see Map 5). What is the likelihood that there was a significant overland population movement from these latter two regions to southern coastal Canaan during the first half of the twelfth century? In terms of feasibility, how does an overland migration compare to one carried out by sea? If there was an overland component to the Philistines' migration, would it appear in the archaeological record, and if so, how?

The notion of an overland Philistine migration is as old as the discovery of the wall reliefs at Medinet Habu: the depiction of Philistine men, women, and children in ox-drawn carts (see Ill. 1; Nelson 1930:Pls. 49:C–D, 50:A) was taken to indicate a land migration (Macalister 1965:22; Dever 1992:102; Kuhrt 1995:388 *inter alios*), which was understood to complement the more richly illustrated, sea migration reflected in the famous naval battle relief (Nelson 1943). The encampment of the Sea Peoples in Amurru enroute to their attack on Egypt, as related in Ramesses III's Medinet Habu inscription (ARE IV §64; see also pp. 74–76 below), was seen as further evidence for an overland movement. There are, however, three major geographic and demographic obstacles to such a major overland movement of people and their supplies: 1) the length

of the journey; 2) the nature of the terrain; and 3) the density of population along their probable route. The last obstacle assumes a hostile reaction on the part of the indigenous population to the incursion of a large group of foreign people in search of a new homeland. First, though, in order to appreciate better the nature and length of the Philistines' migration, it is necessary to present a brief overview of the various theories regarding the location of the their homeland.

A. Philistine Origins

In the discipline of ancient Near Eastern archaeology few problems have occupied so many for so long as the question of Philistine origins.[1] Based on the hindsight made possible by extensive excavations at three major Philistine sites (*i.e.*, Ashdod, Ashkelon, Tel Miqne), there is now little doubt that their material culture derives from the Mycenaean cultural sphere. By the end of the thirteenth century this *koine* area encompassed mainland Greece, the Aegean Islands, coastal Asia Minor, Cilicia, Crete, and Cyprus.[2] What follows is a brief survey of the abundant scholarship concerning Philistine origins, as well as the ramifications for a seaborne migration from the various proposed regions to southern coastal Canaan.

In the eighteenth and nineteenth centuries of the present era, prior to excavations at sites in Philistia, scholars relied on texts and depictions relating to the Philistines in

[1] For an early treatment of the subject, see Macalister 1965, pp. 1–29 and Phythian-Adams 1923d. More recent overviews of the relevant literature include B. Mazar 1971, pp. 164–66; Barnett 1975, pp. 371–78; Albright 1975, pp. 507–16; T. Dothan 1982a, pp. 21–24; Singer 1988a, pp. 242–44; Lagarce and Lagarce 1988, pp. 156–58, n. 1; and Niemeier 1998, pp. 45–49.

[2] Despite the overwhelming evidence in favor of an origin somewhere within the Mycenaean world, there are still those who search elsewhere: Nibbi (1975) identifies the Philistines with Asiatic Beduin/*Shasu* and situates them in the Nile Delta, whereas Spanuth (1980) looks to northern Europe for their homeland.

their search for a homeland.[3] Crete was an early favorite based on the biblical testimony (*i.e.*, Amos 9:7, Jer. 47:4),[4] and because the Pelasgians, who sometimes appear on Crete according to ancient sources, were often identified with the Philistines.[5] From the Medinet Habu inscriptions of Ramesses III, Papyrus Harris I, and related texts came the knowledge that other Sea Peoples joined the Philistines (Peleset) in their assault on Egypt.[6] Based primarily on contemporary Hittite documents, wherein geographical names similar to certain Sea Peoples — namely, the Lukka,[7] Teresh,[8] and Ekwesh[9] —

[3] For a very readable account of the history of early Philistine scholarship, see Dothan and Dothan 1992, pp. 3–72.

[4] The close association between Philistines and Cherethites (= Cretans) in the prophetic writings (Ezek. 25:16, Zeph. 2:5), and between Pelethites (= Philistines?) and Cherethites as mercenaries in the service of David (II Sam. 8:18, 15:18, 20:7), contributed to the impression of a Philistine homeland in Crete. For a discussion of the Cherethites and their relationship to the Philistines/Pelethites, see Albright 1920/21 and Delcor 1978.

[5] Fourmant was the first to connect the Philistines with the Pelasgians (1747:254), whose origins are often sought in Illyria along the Adriatic coast (Bonfante 1946; Lochner-Hüttenbach 1960; Strobel 1978:159–65; Singer 1988a:241–42). In the classical sources, however, the Pelasgians appear throughout the Greek world including on Crete (*Od*. XIX.176f; see also Strobel 1978:120), which for many dovetails nicely with the biblical account of Philistine origins (Hitzig 1845; Macalister 1965:25–26). For an exhaustive study of the Pelasgians, see Lochner-Hüttenbach 1960.

[6] The name "Sea Peoples" never appears as such in Egyptian records; it was initially coined by Maspero, one of the first to study these texts, towards the end of the last century and has since gained widespread acceptance (1881:118).

[7] References to the "Lukka Lands" appear in the texts from Boğazköy/Ḫattuša (KUB XXI 6a; KUB XXVI 12 ii 14 ff.; KUB XXIV 3 ii 38 ff.; KBo XI 40 vi 17 ff. [?]; for the "Südburg inscription," see Neve 1989:316–32; Otto in Neve 1989:333–37) and northwest of Konya at Yalburt (Özgüç 1988:xxv–xxvii, Pls. 85–95; see also Hawkins 1989). In the "Tawagalanas letter" there is a reference to the "men of Lukka" (KUB XIV 3 I 1; for a discussion of all these texts in the context of the location of the "Lukka Lands," see Bryce 1974; 1992). Lycia, which for most scholars is the Iron Age equivalent of the "Lukka Lands" (cf., however, Goetze 1957:181; Macqueen 1968:174–75; Bryce 1974:395, n. 1), appears in Homer (*Il*. II.876–77, V.479, XII.312–13), as well as in later writers (*e.g.*, Strabo [xii, viii, 4]), and was located in Caria near the Xanthos River.

[8] The Teresh have been variously connected with the city of Tarsus (= ^{URU}*tar-ša*; KUB XX 52 I 21´; KUB XL 2 Vs. 30´), the land of "Taruiša" (= KUR ^{URU}*ta-ru-i-ša*; KUB XXIII 11 II 19´), and with the Tyrrhenians, who, according to Herodotus (Hdt.), left Asia Minor and migrated to Italy (1.94). The similar spellings of these names belie their geographic diversity: Tarsus is in Cilicia (= Late Bronze Age Kizzuwatna), "Taruiša" is most likely to be found in western Anatolia near the Troad (Garstang and Gurney 1959:105; Sandars 1985:112), and the Tyrrhenians hailed from Lydia, which is located in central western Anatolia.

[9] For the appearance of the Ekwesh in texts dating to the reign of Merneptah, see ARE III §579, 588, and 601. In addition to the linguistic problems of equating the Ekwesh with the Aḫḫiyawa of Hittite texts (KUB 5.6 ii 57, 60; KUB 14.1; KUB 14.2?; KUB 14.3; KUB 23.1 col. iv; KUB 23.13; for a concise and insightful review of these texts, see Güterbock 1983) is the description of the Ekwesh as being circumcised, an ancient Semitic and Egyptian practice otherwise unknown in the Aegean world (Barnett 1975:367; Sandars 1985:107; Niemeier 1998:46 with further references). The identification of Homeric Achaeans

appear, collectively these groups were located along the coasts of Asia Minor and Cilicia (Wainwright 1939; 1959; 1961; Singer 1988a:243–44; Bryce 1998:371–72; for further references, see Niemeier 1998:46–47). Support for a homeland in this region was found in Philistine names (*e.g.*, Goliath = Lydian *Alyattes*, Achish = Trojan Anchises of the *Iliad* [or Greek *Achaiwos*, Hittite *Aḫḫīyawa*]), and loanwords (*e.g.*, Hebrew *seren* = Luwian *tarwanis* = Greek *tyrannos*, Hebrew *k/qōba'* = Hittite *kupaḫḫi*) that were suggested to have had an Anatolian background.[10] There were also the traditions preserved in later sources that describe the peregrinations of earlier heroes, or *nostoi* (*e.g.*, Teucer, Mopsus), who were originally based in coastal Asia Minor and Cilica, and later became involved in the foundation of Sea Peoples cities such as Salamis and Ashkelon.[11]

Following the discovery of Philistine pottery at the beginning of this century at sites such as Tell eṣ-Ṣafi (Welch 1900), Beth Shemesh (Mackenzie 1912/13), and Ashkelon (Phythian-Adams 1923d), and after the stylistic similarities to Mycenaean pottery had been noted (Heurtley 1936), the geographical range for the Philistines' putative homeland was broadened. In addition to its original place of production on the Greek mainland (Furumark 1941; Mountjoy 1986; 1999), Mycenaean pottery — both imported and locally produced — began to appear in significant quantities in all regions

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with the Aḫḫiyawa was first proposed by Forrer (1924a; 1924b) and, soon thereafter, disputed by Sommer (1934). Since then the scholarly debate has continued and grown with the majority favoring the identification; for an up-to-date and exhaustive overview of the subject with extensive bibliography, see Niemeier 1998, pp. 20–26, 43–45.

[10] In general, for these etymological/linguistic arguments, see Singer 1988a, p. 243; for *seren*/*tarwanis*/*tyrannos*, see Pintore 1983; for *k/qōba'/kupaḫḫi*, see Sapir 1937 and Rabin 1963, pp. 124–25; for the recent appearance of the name Achish (*'kysh*) in a royal dedicatory inscription from Tel Miqne, see Gitin, Dothan, and Naveh 1997 and Naveh 1998.

[11] For Teucer and the founding of Salamis (= Bronze Age Enkomi), see Gjerstad 1944, Wainwright 1963, Schachermeyr 1982, pp. 113–22, Demetriou 1989, pp. 88–93, and Vanschoonwinkel 1991, pp. 295–301; for the activity of Mopsus in Cilicia and at Ashkelon, see Barnett 1953, Lagarce and Lagarce 1988, pp. 151–52, Stager 1991, pp. 16–17, and Vanschoonwinkel 1991, pp. 314–30.

of the eastern Mediterranean including: the Aegean Islands (for Rhodes, see Mee 1982; Dietz 1984; Benzi 1988a; 1988b), coastal Asia Minor (Mee 1978; for Miletus, see Niemeier 1997; 1998:31–37), Cilicia (Mee 1978; Sherratt and Crouwell 1987; for Tarsus, see Goldman 1956; French 1975), Crete (Kanta 1980),[12] and Cyprus (Kling 1989; 2000; Sherratt 1991).

In the wake of excavations at Philistine Pentapolis sites over the past three decades, a broad range of material culture features with clear precedents in the Aegean region and on Cyprus has come to light (see Chapter 1, pp. 11–33). This suggests for many an Aegean or Cypriote place of origin for the Philistines (*e.g.*, Barnett 1975:374–75; Schachermeyr 1982:212; T. Dothan 1995; Stager 1995:348; Niemeyer 1998:48); however, others have argued that comparable amounts of excavation at sites of this period in coastal Asia Minor and/or Cilicia would present a picture very similar to that of the Aegean and Cyprus (Singer 1988a:244).[13] The possibility also exists that the Philistines were an amalgamation of peoples from various areas (Sherratt 1998:307) and/or their migration occurred in stages (Cifola 1994:20), passing through numerous regions.

B. The Levantine Coast at the End of the Late Bronze Age

What follows is a reconstruction of the putative overland route taken by the Philistines from Asia Minor and/or Cilicia — the two proposed Philistine homelands

[12] For twelfth-century defensive settlements throughout the eastern Mediterranean, but particularly on the island of Crete, where some Myc IIIC pottery has been found, see Karageorghis and Morris (eds.) 2001.
[13] Killebrew, who has made a thorough study of the PMP from Tel Miqne, notes close similarities with the Myc IIIC:1b from Cyprus and Cilica and favors a homeland in one of these regions (1998a:402; 1998b:166).

whence travel by land is possible — to southern coastal Canaan. It is based first on the geography of the coastal Levant, both as it exists today and as it might have been at the end of the second millennium. For the latter, an important source of information for land routes and for the movements of large numbers of peoples and supplies in general, is the military annals of the kings of Egypt and Ḫatti. The pharaohs of the Eighteenth and Nineteenth Dynasties, especially Thutmose III (ARE II §391–540), campaigned extensively in Canaan from Gaza in the south to Phoenicia in the north, occasionally reaching as far as Ṣumur (= Tell Kazel). For northern Syria, Cilicia, and coastal Asia Minor (= Kizzuwatna, Tarhuntašša, the Lukka and Arzawa Lands), the texts from Boğazköy/Ḫattuša shed some light. The coastal Levantine route, or the Via Maris as it became known in Roman times, was the scene of numerous other military campaigns, including those of the Assyrians (A.L Oppenheim in ANET 287), Babylonians (Wiseman 1956:32–37, 66–75; Pls. 14–16 [BM 21946]), Crusaders (E.L. Stone 1939), and French under Napoleon (Bonaparte 1998), all of whom followed very similar paths to those taken by armies of the Late Bronze Age. Details concerning travel times, the numbers of people involved, the amounts and types of supplies required for the journey, and the difficulties encountered along the way will help in reconstructing the Philistines' putative overland migration.

A survey of sites along the proposed route will help to establish the likelihood of an overland migration. An overland migration should be marked by a "spatial-temporal distribution of the material culture" associated with the migrating population (Stager 1995:332–34; see also Trigger 1968:41). That is to say, a series of sites characterized by the same, intrusive material culture, which, when plotted, forms a distinctive path or trail.

The appearance of this material culture in the original homeland must precede in date its introduction in the adoptive homeland and all the sites in between these two regions must fall within the chronological range thus created. Fortunately, the Philistine material culture is well defined and easily recognized in the archaeological record.

Furthermore, one might expect to find a clear path of destruction along the proposed migration route. The little textual data available concerning the Philistines' entry into the region testifies to their hostile intent (ARE IV §64), a state of affairs probably borne out by the thick destruction levels excavated at Pentapolis sites (*i.e.*, Tel Miqne, Ashdod), which immediately precede the Philistine settlement (see Chapter 4, pp. 114–15). Also, the coastal Levant was densely populated at the time of their migration *ca*. 1200 (see Sections B1–4, pp. 41–66 below), thus increasing the likelihood of confrontation between the indigenous population and an intrusive people in search of a new homeland (Sandars 1985:124).

1. Turkey (Map 6)[14]

The western coast of Asia Minor is for many scholars the probable homeland of the Sea Peoples, including the Philistines (for a brief discussion and bibliography, see pp. 37–38 above). This region corresponds roughly to the "Lukka and Arzawa Lands" of the Boğazköy texts and was often the scene of unrest requiring the attention of the Hittite kings (Garstang and Gurney 1959:75–100). The coastline is winding and mountainous, rendering overland travel extremely difficult, such that throughout antiquity there were

[14] Because of the difficulties in precisely defining ancient boundaries, the following discussion of the historical geography of the coastal eastern Mediterranean is divided according to modern national borders.

no major land routes along the coast between Miletus and Antalya (Mellaart 1954:176; Ramsey 1962:27).[15] In order to travel eastward from the area of Miletus, it is necessary to follow an inland route along the Meander River Valley until linking up with the great east-west road across the Anatolian Plateau (Garstang 1943a:1–2; 1943b:38; Ramsey 1962:27; Yakar 1976:118). This route passed through Pisidia in the area of the Lake District, then went past the southern end of the central Salt Lake (= Tuz Gölü), and, finally, turned south following the Calycadnos Valley into the Cilician Plain (Garstang 1943a:1; Macqueen 1986:37). The route roughly corresponds to the later Persian Royal Road; however, it was undoubtedly used in earlier times (Garstang 1943b:40–41).[16] The journey from Miletus to Tarsus along this route is approximately 820 km in length and covers mostly mountainous terrain.

The evidence for the presence of Mycenaeans and/or Sea Peoples in ancient Anatolia — the hallmark of which has traditionally been the appearance of large amounts of locally produced, Myc IIIC pottery — is concentrated in two regions: 1) along the southwestern coast around the Meander River, especially at Miletus;[17] and 2) in the Cilician Plain, particularly at Tarsus.[18] The third building period at Miletus, which corresponds to the thirteenth and beginning of the twelfth centuries, is unfortunately

[15] Surveys of the southern coast of Asia Minor have revealed a near complete absence of evidence for Late Bronze Age sites between Silifke (= Late Bronze Age Ura?; for Ura in the Ugaritic and Hittite texts, see Heltzer 1978, pp. 153–55) and Miletus (Mellaart 1954:177; Mee 1978:122–23).

[16] A part of this route was taken by the army of an unnamed Hittite king, who, according to the "Tawagalanas Letter," left Ḫattuša for Millawanda in order to quell the disturbances caused by Piyamaradus in the Lukka Lands (Garstang and Gurney 1959:75–77, 111–14; Macqueen 1968; see also Chapter 5, p. 126). Mursilis II (1339–1306), according to the third and fourth year of his annals, took a similar route in his campaign against the rebellious Arzawa Lands (Garstang 1943b:39–47).

[17] For the appearance of the various aspects of the Mycenaean material culture (*e.g.*, pottery, bronzework, and tomb construction) in this area, see Mee 1978. For the recent discoveries at Miletus, including a thorough discussion of the earlier excavations with bibliography, see Niemeier 1998.

[18] For early surveys of this region, see Gjerstad 1934; Seton-Williams 1954. For the excavations at Tarsus, see Goldman 1937; 1956. For an overview of the results of both surveys and excavations in Cilica, see Mee 1978. For more recent studies of the Mycenaean pottery found in Cilicia, see French 1975; Sherratt and Crouwel 1987.

poorly preserved because of later disturbances associated with the construction of the Temple of Athena; however, a significant amount of Mycenaean pottery was recovered (for references, see Niemeier 1998:34–36). Through a combination of Neutron Activation and petrographic analyses it has been shown that much of this pottery (= LH IIIA to IIIC) was locally produced (Gödecken 1988). Additional aspects of the Mycenaean material culture found at Miletus encompass: 1) domestic architecture (*i.e.*, "corridor"-type house); 2) funerary architecture (*i.e.*, chamber tombs at nearby Değirmentepe); 3) cult (*i.e.*, *psi*-type figurines); and 4) language (*i.e.*, possible use of the Linear B script) (Mee 1978:133–36; Gödecken 1988:314; Gates 1995:292; Niemeier 1998:35–37). Other sites in western Asia Minor, such as Iasos (Mee 1978:129–30), Müsgebi (Boysal 1967; Mee 1978:137–42), and Ephesus (Niemeier 1998:40–41), have also yielded significant amounts of Mycenaean pottery.

In Cilicia (= Hittite Kizzuwatna[19]), there is also strong evidence for a Mycenaean and/or Sea Peoples presence *ca*. 1200.[20] Like western Asia Minor, Cilicia also is thought to have been the Sea Peoples' (including the Philistines') place of origin, largely because of the presence of locally produced, Mycenaean pottery (Wainwright 1961:77–81;

[19] For the first comprehensive study of Kizzuwatna, see Goetze 1940. Later treatments include Garstang and Gurney 1959:50–62 and Beal 1986. Cilicia appears as "Kode" in Egyptian texts, one of the lands "cut off" by the Sea Peoples in Year 8 of Ramesses III according to the Great Inscription at Medinet Habu (ARE IV §64).

[20] This "Greek" presence may be reflected in later traditions, especially those involving Mopsus. According to Strabo, the Greek hero Mopsus was active in Cilicia: he was a seer at Clarus (14.1.27), led veterans of the Trojan War over the Taurus Mountains and into Cilicia (14.4.3), and, along with Amphilochus, founded Mallus (14.5.16). It is also possible to speak of the historical Mopsus: in the eighth-century Karatepe inscription, Azitawada, ruler of the "Danunim" (= Eg. Danuna?), is descended from the "house of Mupš" (Donner and Röllig 1966:5–6; 1968:35–42; F. Rosenthal in ANET 653–54). The Hittite hieroglyphic renders "Mupš" as "Mukšaš" (Barnett 1953:142), a name similar to "Mukšuš," which appears in the "Indictment of Madduwata" (KUB 14.1; Goetze 1968:36, 40). With the re-dating of this text to *ca*.1400 (Schachermeyr 1982:26; Güterbock 1983:133–34), there is now a considerable gap between the appearance of this name in the Hittite cuneiform texts and the generally accepted time-frame of Mopsus (*ca*.1200), thereby rendering their mutual identification tenuous (Courbin 1990:505 *contra* Barnett 1953:142). Finally, there is the tradition recorded by Strabo, whereby Tarsus was founded by Argives led by Triptolemos (14.5.12).

Killebrew 1998a:402; 1998b:166). Of the 23 sites in the Cilician Plain whereat Mycenaean pottery has been found either through survey or excavation, 10 sites have produced LH IIIC (Seton-Williams 1954:134; Mee 1978:150). Kazanli yielded a fair amount of LH IIIA2 to IIIC pottery, some of it apparently locally made (Gjerstad 1934:171–77; Garstang 1938:Pls. 7:3–4, 10:6; Mee 1978:131–32); however, far more Mycenaean pottery has been found at Tarsus. Originally identified as transitional LH IIIB/IIIC imported from the Argolid (Daniel in Goldman 1937:281–82), the Mycenaean pottery at Tarsus has been shown, through further examination, to be almost entirely locally made (French 1975:53–55). Unfortunately, the stratum in question (= Level IIb) was heavily pitted, thus obscuring the transition between the Late Bronze and Early Iron Ages (Goldman 1956:206).

The interior of Anatolia, including the land routes connecting the western coast with Cilicia, has yielded conspicuously little in the way of Mycenaean material culture. Small amounts of verifiable Mycenaean pottery have so far been found only at a few sites: Beycesultan in the Menander River Valley (Mellaart 1970:63–65, fig. 2-12.4; Mee 1978:124); approximately 100 km northeast of Boğazköy at Maşat (T. Özgüç 1978:127–28, Pls. 83, 84, D.1; 1982:102–3, Pl. 47:5–6); and north of Cilicia at Fraktin (Mee 1978:128). With the exception of the LH IIIC stirrup jar from Fraktin, the rest of the Mycenaean pottery from the interior dates to the LH IIIA or IIIB Period.

As with much of the eastern Mediterranean, a number of sites in Anatolia were destroyed at the end of the Late Bronze Age.[21] Most of these sites are deep within the Hittite heartland (*e.g.*, Karaoglan, Alaca Höyük, Maşat, Alişar Höyük; see Drews 1993:9,

[21] For a good general overview of the LB destructions in Anatolia, see Bittel 1983, pp. 25–47.

fig. 1) and, thus, far removed from the Sea Peoples' putative path of destruction.[22] Along the coast there were destructions as well: Miletus seems to have suffered a partial destruction sometime during the LH IIIC phase (Desborough 1964:162), although, as mentioned earlier, the Late Bronze to Early Iron Age sequence is not clear. At Tarsus the Late Bronze/Early Iron Age transition is also unclear;[23] however, it does seem to have been a period of change and instability for the site (Yakar 1993:15–17). Nearby Mersin, on the other hand, was thoroughly destroyed at the end of the thirteenth century (= Stratum V; see Garstang 1939:92; 1953:240, 243). At the latter two sites, the discontinuities and/or destructions dated to *ca*. 1200, as well as the subsequent settlements, were attributed to invaders who bore a Mycenaean material culture (for Tarsus, see Goldman 1956:63; for Mersin, see Garstang 1939:92).

This brief survey of: 1) Anatolian geography including viable overland routes; 2) the distribution of Mycenaean or Sea Peoples material culture (notably LH IIIC pottery); and 3) Late Bronze/Early Iron Age settlement patterns and destruction levels, shows that an overland migration from western Asia Minor to the coastal Levant would not only

[22] The collapse of the kingdom of Ḫatti at the hands of the Sea Peoples as reported at Medinet Habu (ARE IV §64) is regarded today with suspicion by most scholars. Many now credit the Kaska with delivering the final blow that led to the destruction of Ḫattuša and surrounding cities (*e.g.*, Otten 1983; Bittel 1983; Macqueen 1985:52; Yakar 1993:12; Bryce 1998:379). The historical accuracy of the Medinet Habu account is suspect also in light of the survival of the kingdom of Carchemish into the Early Iron Age. The appearance of the name of Kuzi-Tešub, a hitherto unattested king of Carchemish and son of Talmi-Tešub, who was a contemporary of Suppiluliuma II, on bullae sealings found at Lidar Höyük (Sürenhagen 1986; Hawkins 1988; Güterbock 1992), contradicts the report from Medinet Habu that Carchemish had fallen to the Sea Peoples prior to the eighth year of Ramesses III's reign. On the other hand, it is possible that the report of Medinet Habu, as it pertains to these regions, contains not the entire, but a kernel of truth: Sea Peoples activity in the eastern Aegean might have weakened the western periphery of the Hittite Empire and, thus, hastened the collapse of Ḫatti; and Carchemish might have suffered a defeat at the hands of the Sea Peoples and, soon thereafter, recovered with the royal line intact.

[23] Compare the following statements by excavators of the site: "The Hittite occupation, which lasted through the first phase of Late Bronze II to Late Bronze IIb, ended in conflagration and intentional destruction at the hands of invaders in the last quarter of the 13th century" (Goldman 1956:63); and "there was no large scale destruction or catastrophe to mark off the end of the Late Bronze Age (IIb) from the earliest Iron Age" (Hanfmann 1963:95).

have been prohibitively difficult, but, moreover, is insupportable based on the archaeological evidence. In the interior there is no trail of destruction combined with the temporal/spatial patterning of the Mycenaean material culture to suggest an overland migration through this region. Also, those sites exhibiting the typical Mycenaean material culture are concentrated in discontinuous areas along the coast (*i.e*., western central coast of Asia Minor, Cilician Plain), which suggests the arrival of invaders and/or settlers via sea. Furthermore, the Lukka and the Aḫḫiyawa, who were located in these coastal regions and who have been connected by some with the Sea Peoples (see p. 37, nn. 7, 9 above), appear as sea-raiders in Hittite and Egyptian texts (see Chapter 5, p. 126). Finally, underwater archaeology, especially the excavation of the Uluburun and Cape Gelidonya shipwrecks (see Chapter 5, pp. 130–31, 133–34), vividly attests to the activity of merchant ships in these waters during the Late Bronze Age.

In the Cilician Plain, east-west overland travel in antiquity was along inland routes because of the swampy terrain near the coast created by the debouchment of the Tarsus Çay, Seyhan, and Ceyhan Rivers into the Mediterranean Sea (Bell 1906:9; Seton-Williams 1954:121). From Adana[24] — at which point the main road crossed the Seyhan River — to Osmaniye, a distance of *ca*. 85 km, approximately 20 "Imperial Hittite" Period sites have been identified through survey (Seton-Williams 1954:133–35, fig. 4), of which at least 10 yielded Mycenaean pottery (Mee 1978:Map pp. 122–23). The main route then turned southward and ran along the coast until Alexandretta (= Iskenderun), whereat the Beilan Pass offered easy passage into the ʻAmuq Plain (Seton-Williams 1954:123). This inland route circumvented the Amanus massif, where cliffs meet sea,

[24] A sondage made beneath the modern town of Adana revealed no remains earlier than the Hellenistic Period (Seton-Williams 1954:148). The site and the province of Adaniya were clearly of some importance during the Late Bronze Age, as evinced by contemporary Hittite texts (see Beal 1986).

effectively blocking overland travel along the coast. The Bay of Iskenderun appears to have been sparsely settled at this time; the narrowness of the plain and lack of sheltered harbors, combined with inhospitable winds, made this coastal stretch unsuitable for both agriculture and trade (126).

The Beilan Pass crosses an extension of the Amanus Range (= Kizil Dağ) and feeds into the ʻAmuq Plain, a broad fertile valley that runs parallel to the coast of the Mediterranean Sea (Braidwood 1937:8–9; Dornemann 1997). In the Late Bronze Age, Alalakh (= Tell Achtana), the capital city of the province of Mukhish, dominated the ʻAmuq. Alalakh is located at the southern end of the plain, near the mouth of the Orontes River and some 100 km south of the Beilan Pass (for the rest of this section on Turkey and the following sections on Syria and Lebanon, refer to Map 7). Although the most direct north-south route from the Beilan Pass through the southern ʻAmuq Plain would have bypassed Alalakh by about 20 km to the west, it appears that the main road in antiquity circled around what is today the Lake of Antioch, thereby passing directly through Alalakh (Braidwood 1937:41).

Alalakh was in decline towards the end of the Late Bronze Age until it was ultimately destroyed *ca*. 1200 (= Level I; see Woolley 1955:398). This destruction was attributed to the Sea Peoples, despite the absence of evidence for their presence at the site.[25] Of the numerous Late Bronze Age sites that have been identified in the southwest

[25] All of the Mycenaean pottery (= LH IIIB) comes from Level I, prior to the "Sea Peoples destruction" (Woolley 1955:369). The following stratum (= Level 0) consists of graves dug into the walls and floors of Level I; some of these graves were dated to Level I based on the presence of LH III pottery (203). No LH IIIC, however, has been found at the site. The association of the Level I destruction with the activity of the Sea Peoples is an outgrowth of the once popular notion whereby all destructions *ca*. 1200 were considered to be a result of their movements. This interpretation was especially true for Alalakh in that the site is not far from Cilicia (Kode) and Carchemish, two regions overrun by the "Sea and Land Peoples" according to the report at Medinet Habu (ARE IV §64).

of the ‘Amuq through survey (Braidwood 1937:Maps 16–17; Bunnens, Kuschke, and Röllig 1990) and excavation (*i.e.*, Chatal Hüyük, Tell al-Judaideh; see Haines 1971), Alalakh is the only site in the ‘Amuq Plain that has yielded Mycenaean pottery.

There are two possible routes south out of the ‘Amuq Plain: the first follows the Orontes River in a southwesterly direction back towards the coast; and the second continues inland heading due south also along the Orontes. The advantage of the inland route lies in avoiding the Cassius Massif (= Jebel al-Aqra’ and LB Ḫazzi/Ṣapuna), which presents a similar obstacle to overland travel as that posed by the Amanus Massif (Dussaud 1927:413). Approximately 40 km south of Alalakh, the Nahr al-Kabir (= ancient Rahbanu) creates a pass between the Jebel al-Aqra’ and the Jebel Ansariyyah (Yon 1992a:113); beyond lay the coastal plain and the kingdom of Ugarit.

2. Syria

The kingdom of Ugarit encompassed the coastal plain from the Cassius Massif in the north to the Nahr es-Sinn in the south. The entire region was densely populated up until the end of the Late Bronze Age, particularly around the capital at Ras Shamra and along the Nahr el-Kabir Valley (Yon 1992a:113).[26] Thus far, the following five sites

[26] Heltzer, in his study of the rural community of the kingdom of Ugarit — an area of approximately 3,000 to 4,000 km^2 — estimated that there were between 180 and 200 villages at any given time during the Late Bronze Age (1976:104, Table 1; cf., however, Liverani 1979, p. 1319 and Yon 1992a, p. 113, who propose 150 villages). By using a coefficient of 6.50 persons per family, he calculated that there were *ca*. 25,000 people living in these villages (111–12). This estimate does not include the population of the city of Ugarit, which is usually put at between 6,000 and 8,000 inhabitants (Liverani 1979:1319–20; Garr 1987:41–43). Including the non-village and non-urban population (*e.g.*, pastoralists, isolated farmhouses), the overall population of the kingdom of Ugarit may have been between 30,000 and 40,000, or ten persons per km^2 (Liverani 1979:1319; for more on the population of the kingdom of Ugarit, see Chapter 3B1, pp. 95–98).

from this area have produced significant Late Bronze Age remains: Ras el-Bassit, Ras Shamra, Ras Ibn Hani, Minet el-Beidha, and Tell Sukas.[27]

Located directly on the coast just past the Cassius Massif is Ras el-Bassit, an outpost on the northern border of the kingdom of Ugarit. The site has been equated with Late Bronze Age Ṣinuru (Courbin 1990:503) and Ḫimulli (Bunnens, Kuschke, and Röllig 1990:Map B III 3), as well as with classical Poseideion (Hdt. 3.91).[28] A large building, possibly a palace, covering an area of approximately 24 x 10 m was excavated at the site and dated to the end of the Late Bronze Age (Courbin 1977:30; 1983a:126, Plan 2). According to the excavator, Paul Courbin, the site "was partly evacuated, partly abandoned, then set on fire" in anticipation of the arrival of the Sea Peoples (1990:503). The evidence for resettlement in the twelfth century is slight: no structures and only a single piece of Myc IIIC:1b have been found (Courbin 1983b:290; Caubet 1992:127). Nevertheless, Bassit does not seem to have been completely abandoned during the twelfth century, contrary to the situation at Ras Shamra and Minet el-Beidha, both located less than 30 km to the south.

At Ras Shamra a clear and extensive destruction level has been excavated that has been confidently dated to the decade 1195 to 1185.[29] The presence of numerous arrowheads throughout the debris led the excavators to the conclusion that the destruction

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[27] Excavations at Burg Islam, Qal'at ar-Ru'us (= LB Atallig?; see RS 17.150), 'Arab al-Mulk, and Tell Darak (= LB Ushnatu; see RS 20.21 and 20.17[?]) have also produced Late Bronze Age remains and are located in this region (see Bunnens, Kuschke, and Röllig 1990:Map B III 3).

[28] According to Herodotus, Poseideion was founded by Amphilochus, whom Strabo reports founded Mallus in Cilicia along with his companion Mopsus (see p. 43, n. 20 above).

[29] A letter sent by the Egyptian vizier Bay, who assumed a pivotal role during the transitional period between the Nineteenth and Twentieth Dynasties, addressed to Ammurapi provides a solid *terminus post quem* for the destruction of the site (RS 86.2233, see Bordreuil 1987:297; Freu 1988:398). A *terminus ante quem* can be found in the near complete absence of Myc IIIC at the site (Yon 1992a:119). The small amounts of recently identified Myc IIIC:1 at Ras Shamra probably belong to a "squatter" resettlement of the site after the general destruction (Montchambert 1996; Caubet 2000:49; Yon 2000:15, nos. 436–37, 488; Karageorghis 2000b:159–60, nos. 485–89).

was of an intentional and hostile nature (Yon 1992a:117 with further references).[30] In a rare confluence of text and archaeology, we learn something about the agents of this destruction. An exchange of letters found at the site between the king of Cyprus (= Alašiya) and the last king of Ugarit, Ammurapi, vividly presages the disastrous events soon to befall the latter. In response to a letter now lost, the king of Alašiya counsels:

> . . . What have you written to me "enemy shipping has been sighted at sea"? Well now, even if it is true that enemy ships have been sighted, be firm. Indeed then, what of your troops, your chariots, where are they stationed? Are they stationed close at hand or are they not? Fortify your towns, bring the troops and the chariots into them, and wait for the enemy with firm feet. (R.S.L.1, translation from Sandars 1985:143)

The beleaguered Ammurapi replies:

> . . . My father, the enemy ships are already here, they have set fire to my towns and have done very great damage in the country. My father, did you not know that all my troops were stationed in the Hittite country, and that all my ships are still stationed in Lycia and have not yet returned? So that the country is abandoned to itself . . . Consider this my father, there are seven enemy ships that have come and done very great damage (RS 20.238, translation from Sandars 1985:143).

Aside from traces of a squatter's settlement, Ras Shamra/Ugarit was not reinhabited following the destruction (Yon 1992a:118–19).

Less than a kilometer away is Minet el-Beida (= LB Ma'hadu), the ancient port of Ugarit. It too was destroyed *ca*. 1200 and not resettled (Schaeffer 1932:14; Yon 1997:360). The situation is different, however, at Ras Ibn Hani, a nearby palace site located a few kilometres along the coast south of Minet el-Beida. Directly over the ruins

[30] Cf., however, Schaeffer, who attributed the final destruction of Ugarit to an earthquake compounded by drought and threat of external attack (1968:760–68 *contra inter alios* Lagarce and Lagarce 1988:141–43; Drews 1993:33–47; see also Chapter 7, pp. 209–10).

of the destroyed Late Bronze Age "Southern Palace," a new settlement was established (Bounni, Lagarce, and Lagarce 1998). As for the LB inhabitants of Ras Ibn Hani, the absence of small finds amidst the destruction suggests that they had evacuated the site and sought refuge in the fortified capital city of Ugarit (Bounni, Lagarce, and Saliby 1978:278; Caubet 1992:124). The Early Iron Age resettlement is characterized by the appearance of large quantities of locally produced Myc IIIC:1b pottery (Bounni, Lagarce, and Saliby 1978:281–82, fig. 28), which represent more than 50% of the decorated wares (Lagarce and Lagarce 1988:143). The Sea Peoples were considered the bearers of this pottery and credited with the destruction and resettlement of Ras Ibn Hani.[31]

On the border between the kingdoms of Ugarit and Siyannu is Tell Sukas, most likely Šuksu of the Ugaritic texts. Domestic structures covered most of the tell during the Late Bronze Age (= Period J), which ended in partial destruction (Riis 1970:24, 126; Lund 1986:185–86).[32] Again, the destruction was attributed to the activity of the Sea Peoples, based on analogy with Ras Shamra.[33] The discovery of pottery that dates from the thirteenth to tenth centuries in a cemetery near the harbor is the only evidence thus far for resettlement in the Early Iron Age (Riis 1973:205; Caubet 1992:128). A single piece of Myc IIIC pottery was found, but it was not *in situ* (Ploug 1973:7, Pl. 1:2.16).

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[31] Caubet prefers to see continuity in the ceramic evidence and points to the perseverance of certain LB pottery types in the Early Iron Age assemblage (1992:127). She claims that "at present no material or historical argument permits their (*i.e.*, the occupants of the Syrian coastal sites following the destructions at the end of the Bronze Age) identification as 'Sea Peoples'" (130). This statement might be true for sites such as Tell Bassit and Tell Sukas where the evidence for the arrival of a foreign population is not strong; however, at Ras Ibn Hani, where the new settlers began producing Mycenaean-style pottery in large quantities, some allowance for an intrusive element must be made. If more was known about the material culture of Ras Ibn Hani during the Early Iron Age, then it would not be surprising to find further Sea Peoples' traits familiar to us from excavations at Philistine sites (cf. Chapter 1, pp. 10–31).

[32] The destruction level at Tell Sukas is not as clear as those found at Ras Shamra and its satellite sites of Minet el-Beida and Ras Ibn Hani. There are references to ash layers and charcoal in Level J at Tell Sukas, but they cannot compare to the collapsed walls and signs of heavy burning of Ras Shamra (Yon 1992a:119).

[33] Riis also suggests an earthquake, reported to have occurred between the fifth and eighth years of Ramesses III's reign, as a possible cause of the destruction (1970:24).

The island of Arwad, approximately 50 km south of Tell Sukas, is the next major Late Bronze site along the Levantine coast. At Arwad, as at most sites from what would later become the Phoenician heartland, there is little or no archaeological data from the Late Bronze and Early Iron Ages. The primary source of historical information for this period is texts (*e.g.*, Amarna Letters, Ugaritic texts), which unfortunately fall silent at the time of the Sea Peoples migration. In the fourteenth century, Arwad (*A-ru-ad-da*) appears frequently in the Amarna correspondence as a city in the land of Amurru (EA 98, 101, 104–5, 149).[34] The site reemerges in the textual record *ca*. 1100 when Tiglath-pileser I (1114–1076) reports receiving tribute from Byblos (*Gu-bal*), Sidon (*Si-du-ni*), and Arwad (*Ar-wa-da*) (A.L. Oppenheim in ANET 275).

Fewer than 20 km south of Arwad and at the northern end of the ʻAkkar Plain is Tell Kazel. The site is strategically located near the Homs Corridor, the main passage connecting the Mediterranean coast with inland Syria (Badre 1990:13). Tell Kazel is identified by most scholars with Ṣumur/Ṣimyra, an important Egyptian administrative center in the Late Bronze Age (*e.g.*, Dunand and Saliby 1957; Klengel 1984; Sader 1990; for Ṣumur in the Amarna letters, see Moran 1992:391). A monumental building dating to the end of fourteenth and thirteenth centuries (= Level V) was uncovered in the earlier excavations (Dunand, Bounni, and Saliby 1964:11–12), as well as a significant amount of imported Cypriote and Mycenaean (mostly IIIB) pottery (Pls. 14:6–7, 19:1–2; see also

[34] Amurru is mentioned in Egyptian texts as late as the reign of Ramesses III: in his description of the Year 5 "Libyan War," there is a general reference to the defeat of the "chief of Amor" (Edgerton and Wilson 1936:22). In Year 8 the Sea Peoples, while enroute to Egypt, are said to have set up a camp in Amor and then "desolated its people," such that "its land was like that which has never come into being" (ARE IV §64). Finally, a northern campaign, which probably took place sometime after Year 11, is mentioned (ARE IV §133); the accompanying scene shows five Syrian towns, one of which may be in Amurru (Schaeffer 1968:670). This latter passage and scene, however, is copied with slight modifications from Ramesses II's mortuary temple at Abu Simbel (ARE IV §394–414) and, as such, is of questionable historical value (Faulkner 1975:243; Drenkhahn 1984:115; Lesko 1992:153; see also pp. 75–76 below).

Yon and Caubet 1990:101–3). There is some indication of a destruction at the end of the Late Bronze Age (Badre *et al*. 1990:84). The earliest resettlement of Tell Kazel according to the ceramic evidence is the eleventh century (= Level VI; see Dunand, Bounni, and Saliby 1964:12; Badre *et al*. 1990:84); however, no datable structural remains prior to the eighth century have been found (Caubet 1992:128). Just to the north of Tell Kazel is Tell Simiriyan, where sondages revealed Late Bronze Age floors, upon which imported Cypriote pottery was found. Based on very limited results, it appears that the site was destroyed at the end of the Late Bronze Age and not resettled until the Byzantine Period (Braidwood 1940:208–9).

In summary, the most likely overland route taken by migrating Sea Peoples through Syria was along the coast. The Syrian littoral was densely populated at the end of the Late Bronze Age, particularly in the region of Ras Shamra/Ugarit. Of those sites excavated, almost all exhibit signs of destruction *ca*. 1200, the approximate, proposed time of the Philistines' migration. The Cassius Massif and Nahr al-Kabir pose the only major geographic obstacles along this route.

3. Lebanon

The southern end of the ʻAkkar Plain is dominated by Tell ʻArqa, Irqata of the Amarna texts (EA 62, 72, 75, 88, 100, 103, 139–40). It is located on the northern bank of the Nahr el-ʻArqa and has a commanding view of the coastal plain from Tell Kazel in the north to Tripoli in the south (Izre'el and Singer 1990:118). The site seems to have grown smaller in the Late Bronze Age (= Level 11), in light of the fact that Iron II remains

rested directly over the Middle Bronze Age stratum in most places (Will 1975; Thalmann 1978:91, 102). There was no sign of a destruction at the end of the Late Bronze Age and the earliest Iron Age stratum (= Level 10) was dated to the eighth and beginning of the seventh centuries. Ullassa (= Tell al-Hana) and Ḫalpa, although both unexcavated, are sites that appear frequently in contemporary LB texts and are located in the vicinity of Tell ʻArqa (for Ullassa, see EA 60, 61, 104–5, 109, 117, 140; for Ḫalpa, see RS 20.33).

Numerous cities and towns that appear in contemporary texts are located along the Levantine coast from Tell ʻArqa to Tyre (a distance of approximately 170 km), including: Ardata (= Tell Arda; see EA 72, 75, 88, 104, 109, 139–40; RS 20.33), Ampi (= modern Anfa; see EA 71–72, 76, 95, 102, 104), Šigata (= modern Šikka; see EA 71, 74, 76, 88, 90, 95, 98, 104), Batruna (= modern Batrun; see EA 78–79, 81, 87–88, 90, 93, 95, 124), Gubla (= modern Byblos; for EA letters, see Moran 1992:389–90; RS 19.28, KTU 4.338), Biruta (= modern Beirut; see EA 92, 101, 114, 118, 138, 141–43, 155), Ṣiduna (= modern Sidon; see EA 85, 92, 101, 114, 118, 144, 146–49, 151–52, 154–55, 162, 195), Ṣariptu (= modern Ṣarepta/Sarafand; see J.A. Wilson in ANET 477), and Ṣuru (= modern Tyre; see EA 77, 89, 92, 101, 114, 146–47, 149, 155; RS 18.31 [= KTU 2.38], 18.40).[35] Some of these sites, namely, Byblos, Beirut, Ṣarepta, and Tyre, have also yielded Late Bronze Age remains.

[35] Byblos, Beirut, Sidon, Ṣarepta, and Tyre, that is, Uzu on the mainland, also appear in the geographic excursus from Papyrus Anastasi I (J.A. Wilson in ANET 477), which dates to the late Nineteenth Dynasty (475; Brunner 1982:676). There are no recorded military campaigns in this region from the Twentieth Dynasty; however, when textual accounts concerning this area resume *ca*. 1100, Phoenicia reappears seemingly unscathed by the upheavals that had affected the larger region. Wenamon, an emissary of the Temple of Amon at Karnak, visits Tyre and Sidon enroute to Byblos, where he is to procure cedar for the god's barque (ARE IV §557–91). At Byblos he encounters the thriving royal court of Zakar-Baal (Bikai 1992:132), and alludes to past trade relations with the prince's father and grandfather, thus attesting to a ruler at Byblos perhaps as early as the mid-twelfth century. For the appearance of Byblos, Sidon, and Arvad in the tribute lists of Tiglath-pileser I (1114–1076), see p. 52 above. There is no positive evidence

At Byblos the extensive excavations by the French failed to produce clear transitional Late Bronze/Early Iron Age strata (Montet 1928; Dunand 1939; 1954), probably because the remains of this period had been obliterated by later building activity and/or natural erosion (Jidejian 1971:58; Salles 1980:66). There are, however, strong indications that Byblos was inhabited throughout the Late Bronze and Early Iron Ages: numerous cartouches of Ramesses II have been found on alabaster vessels and architectural fragments at the site, although not all of them in contemporary contexts (Montet 1928:48–49, nos. 24–25, Pl. 34; 225, no. 883, Pl. 142; 227–28, no. 890, fig. 102; Dunand 1939:53, no. 1315; 54, no. 1317, Pl. 27; 56, no. 1320, Pl. 27; 92, no. 1354; 93, no. 1360; 399, no. 6031, Pl. 38). In tombs just outside the Bronze Age fortifications, a large amount of imported Cypriote and Mycenaean pottery was found, including some reported fragments of Myc IIIC (Salles 1980:34–35, Pl. 13). Byblos was clearly inhabited and ruled by a royal house — most likely Canaanite, if the Semitic name of the ruler, Zakar-Baal, is any indication — at least by the mid-twelfth century (if not earlier), as shown by the Tale of Wenamon (see n. 35 above).

Recent excavations at Beirut have brought to light a *ca*. 2-ha, fortified, Bronze Age city corresponding to Biruta of the Amarna texts (Badre 1998b). Imported Mycenaean and Cypriote pottery indicate occupation as late as the end of the Late Bronze Age (Badre 1998a; see also Saidah 1993/94); however, the transition into the Early Iron Age, including the presence or absence of a destruction level, is unclear.

At Ṣarepta and Tyre clear Late Bronze and Early Iron Age strata have been excavated. At both sites the excavators encountered a clear ceramic and architectural

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then, either archaeological or textual, to indicate that the major Phoenician centers were uninhabited at the time of the Philistine migration.

continuity across the thirteenth and twelfth centuries with no signs of destruction (for Ṣarepta, see Anderson 1988:386–90; Khalifeh 1988:112–13; for Tyre, see Bikai 1978:65–66). Aside from a few Myc IIIC sherds at each site (Herscher 1975:90–91, fig. 26:3–5; Anderson 1988:390; Khalifeh 1988:112; Bikai 1978:Pl. 39:20), there is no evidence for a Sea Peoples presence in Phoenicia.

The Phoenician coastal plain presented numerous geographic obstacles to overland travel in antiquity. In the area of Tripoli, the Nahr Abu Ali (= Qadisha) flows through the Koura depression and into the Mediterranean Sea, creating in places up to a 12 m-deep cut in the coastal plain. Near Batroun at the Ras Chekka promontory, there are 100 – 200-m high cliffs rising from the sea that force travel along a narrow footpath (Jessup 1880:14; Vasson 1970:54). Another promontory stands approximately 40 km farther south, where the Nahr el-Kalb debouches into the sea slightly north of Beirut. About 60 km farther south and just north of Sidon, there is a major river crossing at the Nahr ez-Zaharani (Tristram 1880:49); however, the Litani River presents a more serious obstacle. The Litani falls between Ṣarepta and Uzu (= mainland Tyre) in the itinerary of Papyrus Anastasi I ("Where is the stream of the Litani?"; J.A. Wilson in ANET 477) and, according to nineteenth-century CE travelers, the river was impossible to ford in the absence of a bridge (Tristram 1880:50). The rest of the way to Tyre and beyond to Rosh Hanikra is relatively unimpeded.

South of Tyre, the Lebanon mountain range encroaches upon the coastal plain, which reaches its most narrow point at Rosh Hanikra (= "the Ladder of Tyre"), where, as at the Amanus massif, sea and cliffs meet. The difficulty of traveling along this stretch of coastline is again reflected in Papyrus Anastasi I: "Let me tell thee another difficult case

— the crossing of Seram" (J.A. Wilson in ANET 477; see also Tristram 1880:67–69).[36] That this obstacle was overcome in the Late Bronze Age is borne out by the military campaign itineraries of Seti I and by the aforementioned Papyrus Anastasi I.[37]

4. Israel (Map 8)

Once past Rosh Hanikra, the coastal route opens up into the Akko Plain. Approximately 40 kilometers north to south, this section of the Via Maris is flat and easily traversed; however, in the southwest of the plain flows the Kishon River (= Nahr el Mukutta), near the mouth of which were swamps and forests until quite recently, thus rendering travel here difficult in antiquity (Aharoni 1979:50). Consequently, this area was generally avoided in favor of an inland route through the Jezreel Valley, thereby also avoiding the Carmel Ridge and the swampy coastal terrain along the ridge.

The main, excavated, transitional Late Bronze/Early Iron Age sites in the Akko Plain are Akko, Tell Keisan, and Tell Abu Hawam.[38] Akko (= Tell el-Fukhkhar) is

[36] The identification of Rosh Hanikra with Seram (*D-r-ʿ-m*) is based on its position in the text between Tyre and Akko (J.A. Wilson in ANET 477). There is no viable inland route in this area along which Seram might alternatively be located.

[37] For the geographic obstacles encountered by Antiochus III and his army when advancing southwards along the Lebanese coast in 218, see Polybius, *Histories* 5.68.6–5.69.1 (see also J.P. Brown 1969:36–37). Apparently, Sennacherib (704–681) also descended from the north: "overwhelmed his (= King Luli of Sidon) strong cities (such as) Great Sidon, Little Sidon, Bit-Zitti, Zaribtu, Mahalliba, Ushu (= the mainland settlement of Tyre), Akzib (and) Akko" (A.L. Oppenheim in ANET 287).

[38] Achzib, Nahariya, Tel Bira, and Tell el-Harbaj also have yielded remains that date to this period. Achzib is located directly on the coast just south of the Nahal Kezi (Wadi Qarn) and is *ca*. 14 km north of Akko. It appears that at the end of the Late Bronze Age, Achzib's defenses were destroyed, after which time the city was quickly reinhabited (Prausnitz 1993b). "Sea Peoples'" pottery was found in *favissae* that date to the end of the Late Bronze and beginning of the Iron Age. Less than 5.00 km south of Achzib is Tel Nahariya, where salvage excavations brought to light terminal Late Bronze Age (= Stratum I) architecture dated by Mycenaean and Cypriote imports (Yogev 1993). The limited excavations at the site indicate that Nahariya was abandoned no later than the mid-twelfth century and not reinhabited until the Persian Period. At Tel Bira, located a few kilometers north of Tell Keisan, some transitional Late Bronze/Early Iron Age tombs were excavated east of the tell (Prausnitz 1993c). Where the Akko Plain meets the Jezreel Plain, at Tell el-

situated approximately 700 m from the Mediterranean Sea along the northern bank of the Na‘aman River (= Belus), which was probably closer to the site in antiquity and provided Akko with safe anchorage and access to the sea (M. Dothan 1989:60; 1993d:17). The site appears frequently in Ugaritic (RS 18.31 [= KTU 2.38]; for people from Akko, see RS 19.42, 182) and Egyptian texts (EA 8, 88, 111, 232–34, 236, 366), some as late as the end of the Nineteenth Dynasty (P. Anastasi I; J.A. Wilson in ANET 477). Based on the *ca*. 1100 “Onomasticon of Amenope” (Gardiner 1947:194–205, nos. 268–70), in which text the Sherden are listed alongside the Sikils and Philistines, Akko is often thought to have been a Sherden settlement for most of the twelfth century (M. Dothan 1986). Significant architectural and ceramic remains from the transitional Late Bronze/Early Iron Age have been found at the site, including evidence for local production of Myc IIIC:1b (M. Dothan 1986; 1988:297–301; 1989:60–63; 1993b:21).

The route then turned inland away from the coastal sand dunes and marshland towards the foothills of the Lower Galilee (Aharoni 1979:50). Approximately 10 km southwest of Akko and 8 km from the sea lies Tell Keisan (Humbert 1993:862), possibly Achshaph of the Egyptian texts and the Hebrew Bible (Josh. 11:1, 12:20, 19:25; for further discussion of this identification, see p. 60, n. 42 below). At the end of the Late Bronze Age there was a heavy destruction at the site, perhaps attributable to the activity of Sea Peoples (Humbert 1981:388–89; 1993:864). Suggestive here is a rare example of *imported* Myc IIIC (Balensi 1981),[39] as well as a few pieces of Philistine pottery found in

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Harbaj (Tel Regev), pottery from the Late Bronze and Early Iron Ages, including some Philistine sherds, was found in disturbed contexts (Garstang 1922; 1924b; Prausnitz 1993a).

[39] The stirrup jar was originally identified as being Myc IIIC:1a (Balensi 1981), but is probably later (Myc IIIC Middle by Mountjoy’s classification [1986:168–69], see also Warren and Hankey 1989, p. 163). Neutron Activation analysis revealed a probable Cypriote origin (*i.e*., the Kouklia region; see Humbert 1993:864).

this early twelfth-century destruction level, which, however, was a quite limited exposure (Briend and Humbert 1980:229; Humbert 1993:864).

In the southwest corner of the Plain of Akko, near the base of the Carmel Ridge and in the mouth of the Kishon River, is the site of Tell Abu Hawam. Originally located directly on the coast and surrounded by lagoons, today the site is *ca*. 1.50 km inland (Balensi and Herrara 1985:122–25; Balensi, Herrera, and Artzy 1993:13; see also Avnimelech 1959). Tell Abu Hawam was a major port in the Late Bronze Age, as evidenced by the extraordinary amount of imported Cypriote and Mycenaean pottery found there (Balensi 1985:67); however, no Philistine pottery has yet appeared (Balensi and Herrara 1985:107–9).[40] Because of the swampy terrain and the proximity of the Carmel Ridge, the area of Tell Abu Hawam was not suited to overland travel and, therefore, was often bypassed in favor of an interior route through the Jezreel Valley (Karmon 1961:51; Ussishkin 1995:262; Astour 1995:1402). Furthermore, the coastal plain along the Carmel Ridge as far south as the Nahal Taninim (located between Tel Dor and Caesarea) was narrow (Hull 1998:8), largely covered by marshes, and, consequently, was rarely taken.[41]

According to Egyptian texts, there appear to have been at least two other major sites in the vicinity of the Akko Plain, Achshaph, and Rehob, neither of which has been

[40] Despite the complete absence of the distinctive Philistine (or Sea Peoples) material culture, Balensi identifies the settlers of Stratum VC with the "Sea and Land Peoples phenomenon," even though the material culture of Tell Abu Hawam in the twelfth century is said to be similar to that of the Canaanite Esdraelon Plain (1993:13).

[41] Cf., however, the campaign route taken by Ramesses II as recorded in the topographical list from Amarah, which includes the sites of Mahoz (south of Jaffa), Socoh (east of the Sharon Plain), Dor (Carmel Coast), and Rehob (Akko Plain?) (B. Mazar 1975:154–59). It is possible that with the emergence of coastal sites such as Dor and Tell Abu Hawam, this direct coastal route was used more often at the end of the second millennium (Aharoni 1979:50). Certainly by the Persian Period, with the rise of Phoenician coastal sites in the region (*i.e*., Shiqmona, 'Atlit, Dor, Tel Mevorakh), this was the case (Ussishkin 1995:262). Also, this direct northern route was used in later times by the armies of Richard the Lion-Hearted and Napoleon (for references, see Karmon 1961:51).

positively identified with a modern tell.[42] In Egyptian topographical lists, Achshaph often appears in association with Akko (J.A. Wilson in ANET 242, 477). More precisely, Papyrus Anastasi I indicates a location near the point where the Jezreel Valley joins the Akko Plain. The existence of a northern Rehob in the Akko Plain is based on Thutmose III's topographical list (J.A. Wilson in ANET 243, no. 87) and is perhaps the same as the Rehob mentioned in Joshua 19:28. The southern Rehob is based on *'rḥbm* from the second group of Execration Texts (no. 14) and Rahabu from the topographical list of Ramesses II (B. Mazar 1975), and should be associated with the Rehob mentioned in Joshua 19:30 and Judges 31:1. Regardless of their exact location, the appearance in texts and through archaeology of numerous Late Bronze/Early Iron Age sites in the Akko Plain (*i.e.*, Akko, Tell Keisan, Tell Abu Hawam, Achshaph, Rehob) attests to the densely populated nature of this region at the time of the Philistines' migration.

Once across the Akko Plain, the Via Maris turned inland[43] and passed through the western Jezreel Valley for approximately 20 km until it reached Megiddo, where the main route through the Wadi 'Ira (= 'Aruna Pass) provided access back to the coastal plain. Once again, this route is well attested in the campaign itineraries of New Kingdom

[42] Both Tell Keisan and Tell el-Harbaj, located at the southern end of the Akko plain, have been suggested as possible candidates for Achshaph (Aharoni 1979:52; Benjamin 1992:57). There may have been two places called Rehob in the Akko Plain. The northern Rehob has been located at either Tell el-Balat, *ca*. 16 km east of Rosh Hanikra, or Tell er-Rahb, *ca*. 7 km southeast of Tell el-Balat (Aharoni 1979:162). The southern Rehob may be Khirbet Da'uk, *ca*. 8 km southeast of Akko (Kallai 1986:428), or, more likely, Tell el-Bir el-Gharbi/Berweh (Albright 1921/22:27–28; for a discussion of all the above sites, see Peterson and Arav 1992).

[43] The coastal route around the Carmel Ridge was avoided because of the swampy terrain (especially in the area of the Kishon River [Karmon 1961:51; Ussishkin 1995:262; 1998:216]) and the amount of backtracking necessary in order to circumvent the ridge (Dorsey 1991:60). Even in modern times the interior route was favored: in 1799 Napoleon left Acre, led his army through the Jezreel Valley, and crossed the Carmel Ridge at the pass near Yokneam (Bonaparte 1998:55). In 1918 the British Army led by General Allenby passed through the Nahal 'Iron, rather than taking the coastal route, and from there advanced to Haifa and Acre (*Advance of the EEF*:29–31, Pls. 43–46; see also Ussishkin 1995:262–63). Richard Lionheart took the direct coastal route so as to remain in contact with his fleet, which was also advancing southward from Acre (see Karmon 1961:51; Condor 1998:274).

pharaohs, especially in connection with Thutmose III's attack on Megiddo (ARE II §421–28; see also Aharoni 1979:153–54; Aharoni and Avi-Yonah 1993:31–33). There were two alternate routes through the plateau of Manasseh. The first enters the Jezreel to the north through the Wadi Milḥ (= Nahal Yoqneam), which was guarded by Yoqneam (Ben-Tor and Rosenthal 1978:57) at the northern end and by Zephath (= Khirbet Sitt Leila[?]; see Aharoni 1959) at the southern end. The second describes a southern arc through the Valley of Dothan passing by Taanach (Aharoni 1979:52; Nelson 1913:12–13).

Of the many twelfth-century sites in the western Jezreel,[44] Megiddo clearly dominated.[45] Its strategic location along major land routes made Megiddo an important site throughout its long history.[46] It is widely acknowledged that in the first half of the twelfth-century (= Stratum VIIA) Megiddo functioned as an Egyptian garrison of the Twentieth Dynasty (*e.g.*, Singer 1988/89:104–8; Ussishkin 1995:260; Finkelstein 1996a:170–71). This is based largely on the discovery of an ivory pen case bearing the cartouche of Ramesses III found sealed in the destruction of the Stratum VIIA "Treasury" (Loud 1939:no. 377), and the bronze statue base of Ramesses VI found buried beneath a Stratum VIIB wall (Breasted 1948). The pen case belonged to an official named

[44] Raban notes 26 Early Iron Age sites of which 12 have undergone some excavation (1991:17). Most of these sites are small and lack LB II remains (*i.e.*, Tel Qiri, 'Afula, Tel Qashish, Be'er Tiveon), but did yield small amounts of Philistine Bichrome pottery (here termed "Phase I & II of the Philistine material culture"; 18–23; see also Stern 2000:205–6). It is difficult to say how early in the twelfth century these sites were settled and, therefore, whether they might have been a factor in the Philistines' putative overland migration. In any event, to state that the appearance of small amounts of Philistine pottery is indicative of a settlement of Philistines and other Sea Peoples in this area during the early twelfth century (Raban 1991:25) overextends the available evidence.

[45] For a discussion of Megiddo in the Late Bronze and Early Iron Ages (= Strata VI–VII), see Kenyon 1969; T. Dothan 1982a:70–80; G. Davies 1986; Gonen 1987; Singer 1988/89; Ussishkin 1995; 1998.

[46] To the southeast through the Jezreel Valley was Beth Shean and the Jordan Valley, to the southwest through the Wadi 'Ira was the Sharon Plain and the coastal route, to the northwest was the Akko Plain and the Phoenician coast, and to the northeast through the Chesulloth Valley was the way to the Beqa' Valley and Damascus beyond.

Thutmose, who held the title "Royal commissioner to every foreign country," and who may have been the same as Thutmose, father of Ramesses Weser-khepesh, commander of the Egyptian garrison at Beth Shean (Ward 1966:174–79; Singer 1988/89:103–4; see also Chapter 4, pp. 109–10).

The Egyptian presence at Megiddo during the first half of the twelfth century would have presented a political and military obstacle to any overland movement of a large group of people. This does not mean, however, that the Philistine migration and settlement should be dated to after the collapse of the Egyptian administration in Canaan *ca*. 1130 (*pace* Ussishkin 1995:264; 1998:217). Evidence relating to seafaring capability in the eastern Mediterranean *ca*. 1200 shows that large-scale migration by sea was possible (see Chapter 5) and, therefore, the Philistine migration need not have occurred only by land (as has been inferred). Moreover, the discovery of a PMP sherd from Ashkelon with a depiction of a ship's post ending in a bird-head device (Wachsmann 1998:201–2, fig. 8A.1) attests to a continued Philistine maritime tradition (*contra* Karmon 1956:38; Ussishkin 1995:264).

Travel from the Jezreel Valley back to the coastal plain through the narrow and easily blocked mountain passes (especially the Wadi 'Ira) was dangerous (ARE II §421; Nelson 1913:9; Aharoni 1979:50).[47] Once through the mountains, however, these passes opened onto the Sharon Plain, where the main route skirted the foothills because swamps,

[47] In response to Thutmose III's decision to approach Megiddo through the Wadi 'Ira, his advisors entreat:

> What is it like to go [on] this [road] which becomes (so) narrow? It is [reported] that the foe is there, waiting on [the outside, while they are] becoming (more) numerous. Will not horse (have to) go after [horse, and the army] similarly? Will the vanguard of us be fighting while the [rear guard] is waiting here in Aruna, unable to fight?' (ARE II §421)

At the beginning of this century and prior to the construction of the modern road, the Aruna Pass was approximately 10 m in width a half mile from the mouth of the Jezreel Valley (Nelson 1912:12).

forests, sand dunes, and kurkar ridges covered the western and central sections of the plain (Karmon 1961:45–48).[48] Sites such as Zepthah (= Khirbet Sitt Leila[?]), Aruna, Migdal (= Tell edh-Dhurur[?]), Gath (= Gath-Padalla = modern Jatt), Yaham, and Socoh (= Khirbet Shuweiket er-Ras), which appear in the city lists of New Kingdom pharaohs, are probably to be located along this stretch of the Via Maris (Aharoni 1979:49; Aharoni and Avi-Yonah 1993:Map 30).

Tel Zeror (= Khirbet edh-Dhurur) is the only site in this part of the Sharon Plain where Late Bronze and Early Iron Age strata have been excavated. It is located at an important ford, where the ʻIron and Havivah *wadis* meet to form the Hadera River (Ohata 1966:1). According to the excavators, the Late Bronze Age town (= Area A, Stratum XII; Area B–C Stratum 9, Zeror Period F) was both deserted and destroyed *ca*. 1200 (Ohata 1966:29–30; Kokhavi 1993). The twelfth-century settlement (= Area A, Stratum XI; Area B–C, Stratum 8, Zeror Period G) was marked by pits containing refuse, including pottery in the Late Bronze Canaanite tradition. A thick, ashy, destruction layer covered this stratum (Ohata 1966:25). The incursion of Israelites and Sea Peoples has been associated with the destruction levels and changes in the nature of the twelfth-century settlement at Zeror (Ohata 1966:30; Kochavi 1993:1526). The evidence, however, simply indicates a much-reduced settlement at the site, populated by a group of people who produced the same material culture.

At the southern end of the Sharon Plain near the source of the Yarkon River (= Nahr el ʻAujah) was the Egyptian garrison site of Aphek (Kokhavi 1990). Aphek is strategically situated at the intersection of the Via Maris and an interior route heading

[48] The chronicler of King Richard I's army, Geoffry de Vinsauf, described this same inland route: "For they were compelled to march through a mountainous country, because they were unable to go by the seaside, which was choked by the luxuriant growth of the grass" (see Conder 1998:276).

east towards Bethel (Aharoni 1979:60). The "Residence of the Egyptian Garrison" (= Palace VI, Stratum X-12) was destroyed in a "great conflagration," which was attributed to hostile attack based on the discovery of arrowheads amongst the debris (Kochavi 1990:24; Beck and Kochavi 1993:68). The dating of the destruction to *ca*. 1230 is based on a letter from Ugarit found in the debris (Beck and Kochavi 1985:36);[49] however, this serves only as a *terminus post quem*, and, therefore, the destruction may have occurred at a later date (Finkelstein 1995:230). Following a "poor" twelfth-century settlement (= Strata X-11; Kochavi 1981:80–81; 1990:24), aspects of the Philistine material culture (*i.e*., decorated pottery) do not begin to appear at Aphek until the eleventh century (= Strata X-9–10; Beck and Kochavi 1993:68).[50]

Once past Aphek and across the Yarkon River, the Via Maris entered the Shephelah. The preferred inland route ran along the Judean foothills, thereby avoiding the marshes and sand dunes near the coast (Dorsey 1991:60–61). The coastline in this region was dominated by Jaffa, where a monumental gateway bearing the name and titles and Ramesses II was found, thus attesting to a strong Egyptian presence at the site in the thirteenth century (Kaplan 1972:79; Kaplan and Ritter-Kaplan 1993:656). Initially, the destruction of Stratum IVB (originally V) was assigned to an early wave of Sea Peoples (= Danuna; for a discussion of the now abandoned "two-wave" theory, see Chapter 1, p.

[49] Singer dates the letter to 1230 (1983:23); whereas Owen prefers 1250 (1981:14). These dates are based on synchronisms involving the careers of Haya, an official in the court of Ramesses II, and Takuhlinu, an official in the courts of Ugarit and Carchemish, both of whose names appear in the letter.

[50] Initially the Philistine settlement of Stratum X-10 was dated to the mid-twelfth century, based on the discovery of a scarab attributed to Ramesses IV (1155–1150) found in a pit (locus 4018) along with Philistine Bichrome pottery (Kochavi 1981:81). In addition to providing only a *terminus post quem* for the Philistine settlement at Aphek, it has since been shown that this scarab belongs to the reign of Ramesses I or the early years of Ramesses II (Giveon 1988:47–48, no. 40; Uehlinger 1988:21, n. 63). Tel Gerisa (= Tell Jerishe), located farther west along the Yarkon River, may also have been destroyed at about the same time as Aphek (Herzog 1993:481). However, it does not seem to have been reinhabited until the end of the twelfth century (= Philistine Bichrome phase).

11, n. 2), who arrived in the last quarter of the thirteenth century, and Stratum IVA (originally IV) was connected with their subsequent settlement (Kaplan 1972:81–82). The second wave was associated with the Philistines and dated to 1175 (84). Thus far, the archaeological evidence for a Sea Peoples presence at Jaffa, however, is slight: the small amount of PBP pottery was found in pits (Kaplan and Ritter-Kaplan 1993:655–56), and the plan of the "Lion Temple" is too vague to allow for any meaningful statement to be made concerning the background of those using it (Burdajewicz 1990:45–46).[51]

Based on the Egyptian texts, it appears that the area of the northern Shephelah along the Judean foothills was densely populated in the Late Bronze Age. Ono (= Kaf 'Ana), Lod, Gath-Gittaim (= Ras Abu Humeid), Gezer, and Gibbethon (= Tel Melat) all appear in the topographical lists of Thutmose III and are located in this region (Simons 1937:117; Aharoni 1979:49). Gath-Rimmon (= Tel Gerisa[?]) and Mahoz (= Tell Abu Sultan) are closer to the coast and somewhat removed from the main route. With the exception of Gezer, very little Late Bronze Age material has been excavated at these sites.[52]

Located on a low hill along the trunk road near the entrance to the Ayalon Valley, Gezer has a commanding view of the coastal plain that extends from south of Ashdod to just short of the Carmel Ridge (Dever 1993b:496). A destruction level dating to the end of the thirteenth century was excavated in certain areas of the tell (*i.e.*, Field II, local Stratum 13/general Stratum XV; see Dever *et al*. 1974:52), which has been connected to the military activity of Merneptah in southern Canaan in 1207 during the fifth year of his

[51] The renewed Tel Aviv University excavations at Jaffa led by Zvi Herzog will focus on the Late Bronze Age and, in the process, will shed some light, one hopes, on the nature of the Sea Peoples presence at the site.

[52] For a Late Bronze Age (= Stratum 10) burial with imported Cypriote pottery found during rescue excavations at Lod, see Rosenberger and Shavit 1993, p. 56.

reign (Dever 1993:504).[53] This destruction was followed by a period of abandonment that covered the end of the thirteenth and beginning of the twelfth centuries (= Stratum XIV). PBP appears in the next stratum (= Stratum XIII) following this gap in occupation. The absence of a clear Sea Peoples' destruction level at Gezer may be due to the fact that the site was deserted at the time of their arrival *ca*. 1175.

From Gezer it is only about 10 km to the northern border of Philistia as demarcated by the line running between Ashdod and Tel Miqne. Tel Mor (= Tell Kheidar) is the one site in this region that might have presented an obstacle to an overland advance of immigrants coming from the north. Five kilometers north of Ashdod, on the coast, and located on the northern bank of the Nahal Lachish, Tel Mor functioned as an Egyptian garrison site throughout much of the Late Bronze and into the Early Iron Age (M. Dothan 1959; 1960; 1993a). The square, symmetrical building, which covered much of the small tell's summit in Strata VIII and VII, is typical of the Egyptian-style, governors' residences in LB Canaan (Oren 1984). At the end of the thirteenth century the site was completely destroyed, after which time a smaller *migdol* fort was built in Stratum VI, perhaps by Canaanites under the aegis of Egypt during the reign of Ramesses III. The site is said to have passed into the hands of the Philistines in the second half of the twelfth century (= Stratum V) (M. Dothan 1993a:1074).

C. Overland Travel Along the Levantine Coast

[53] In the "Merneptah" or "Israel Stela," Gezer appears along with Ashkelon, Yan'oam, and Israel as one of the cities or peoples in Canaan conquered by Merneptah (ARE III §617). The Amada Stela, also from the fifth year of his reign (see Stager 1985a:56, n. 2), gives one of Merneptah's epithets as "subduer of Gezer" (KRI IV/2). For the ivory sundial bearing his cartouches found at Gezer, see Macalister 1912a, p. 15, 1912b, p. 331, fig. 456, Möller 1920, and Pilcher 1923.

Given the above data, there are many reasons to question the likelihood of a major Philistine or Sea Peoples overland migration. These reasons may be grouped into two basic but overlapping categories, which are characterized by (1) geography and (2) site patterns of the transitional Late Bronze/Early Iron Age.

1. Geographic Factors

For reasons discussed above (see pp. 45–46), an overland migration across Anatolia would have been virtually impossible. The greatest distance traveled by land, therefore, would have been from Cilicia to Philistia, *ca*. 750 km along the most commonly used, coastal, overland route. This route, which corresponds primarily to the Levantine coastal plain, was intersected by numerous rivers (*e.g.*, Orontes, Nahr el-Kabir, Nahr el-'Arqa, Nahr Abu Ali, Nahr el-Kalb, Nahr ez-Zaharani, Litani, Yarkon) that occasionally cut deep riverbeds and became swollen with winter rains. Many of these rivers continue to flow throughout the summer months (Dunand *et al*. 1964:13) and must have been forded, since there is no evidence for the existence of bridges in the Late Bronze and Early Iron Ages.[54]

There were also several coastal promontories (*e.g.*, Cassius, Ras Chekka, Rosh Hanikra) and mountain ranges (*e.g.*, Amanus, Carmel) that forced travel inland (*e.g.*, through the Beilan Pass and Jezreel Valley) or along narrow, precipitous paths. Coastal

[54] The fording of rivers is well attested in the military annals of Egyptian pharaohs: Amenhotep II forded the Orontes in order to quell a rebellion in northern Syria (ARE II §784); Thutmose III reports crossing the Euphrates with ships made from the cedars of Lebanon that had been transported from Phoenicia on cattle-drawn carts (J.A. Wilson in ANET 240; see also Chapter 5, p. 129, n. 7); Ramesses II led a division of his army (perhaps equal to 5,000 troops; see P. Anastasi I.17.4–5; see also Breasted 1903, p. 10; Yadin 1963, p. 112; cf., however, Schulman 1964, p. 79) across the Orontes enroute to Qadesh (ARE III §308). There is also the reference to the difficult crossing of the Litani River in P. Anastasi I (see p. 56 above).

swamps (*e.g.*, Sharon Plain, near the debouchment of the Ceyhan and Qishon Rivers)[55] and sand dunes (*e.g.*, Akko Plain, Sharon Plain, Philistia) presented further impediments and forced a slightly inland route that ran along the foothills. One must also consider the condition of roads along the Levantine coast at the end of the second millennium. The withdrawal of the centralizing influence of the Hittite and Egyptian Empires from Syria-Palestine would have the left the region without the means and impetus to maintain overland routes.[56]

a. Textual Evidence for Rates of Travel Speed in the Ancient Near East

That these geographical obstacles were overcome in the Late Bronze Age is clear from the itineraries of Egyptian military campaigns, but it should be kept in mind that the Egyptian army was a highly organized unit that had campaigned extensively in Canaan (Schulman 1964; Kadry 1982). A group of migrating people would not have been trained in this way, nor would they have had the same familiarity with the terrain. Nonetheless, it is useful to examine Egyptian records in order to gain some idea of how long it took to transport large groups of people, as well as their supplies, across certain distances overland in the ancient Near East during the Late Bronze Age.[57]

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[55] Although swamps were avoided, they were still traversable: the army of Thutmose III "crossed over to the marshes of Asia" on their way to Lebanon (J.A. Wilson in ANET 240).

[56] Before the construction of roads during the Roman Period, many points along the coastal route were impassable to wheeled traffic and, therefore, all long-distance, heavy transport was by sea (J.P. Brown 1969:36). In the political vacuum of the Ottoman Empire's administration of Syria-Palestine at the beginning of this century, transportation suffered in a similar fashion: horse-drawn carts of the Turkish Fourth Army could not advance towards the Suez Canal in 1915 because of the poor state of the roads (Emin 1930:88).

[57] The Egyptian army also traveled to Canaan by sea, as during the reigns of Pepi I, Amenemhet II, and Thutmose III (see Chapter 5, p. 142, n. 32).

According to an itinerary of Thutmose III, the Egyptian army covered a distance of *ca*. 125 km from Gaza to Yaham (= Khirbet Yemma in the Sharon Plain) in 11 or 12 days (Simons 1937:117; Aharoni 1979:48–49), therefore traveling approximately 11 km/day. An earlier leg of this journey, a *ca*. 250-km stretch from Sile to Gaza;[58] however, was completed in only 10 days, thus yielding a pace of approximately 25 km/day (Aharoni 1979:48). It is possible that the slower rate of travel from Gaza to Yaham is attributable to resistance met along the way (49).[59] A couple of centuries later, Ramesses II led his army from the northeastern border of Egypt (*i.e*., Tharu) to Qadesh in 30 days, thereby covering an average of 22 km/day (Breasted 1903:11, n. 40, 19, n. 67).

Based on the travel itineraries of Old Babylonian donkey caravans, William Hallo has estimated that they covered 25 – 30 km/day (1964; see also Astour 1995:1402).[60] However, this figure is somewhat misleading for two reasons: 1) the ease of the terrain, (*i.e*., the Upper Tigris and Euphrates River Valley) relative to the reconstructed route of the Philistine overland migration — namely, the Levantine coast; and 2) travel and transport by donkey caravan are faster than by oxcart, which, based on the Medinet Habu reliefs, is the vehicle most often assumed to have been used by the migrating Philistines (see Ill. 1 and p. 35 above). The movement of large numbers of people by oxcart is well-attested in early modern times: in 1843 American settlers traveling along the Oregon Trail covered *ca*. 3,300 km in five months, thus averaging 22 km/day (Dunbar 1937:209;

[58] For a discussion of this stretch of military road based on the Karnak reliefs of Seti I, see Gardiner 1920 and Gal 1993.

[59] Harried by Saracens, the army of Richard I averaged a little over 7 km/day on its march from Beirut to Jaffa (Conder 1998:276). In times of relative stability, local rulers could guarantee safe passage: for example, during the Amarna Period, Mut-Bahlu, ruler of Shechem, assured Pharaoh that an Egyptian caravan could pass safely through the region under the protection of a large, locally provided escort (EA 255, 8–25). Anthony, in his programmatic work on prehistoric migrations, discusses the effect that "the level of hostilities along the migration route" had on groups considering such movements (1997:24).

[60] Mixed caravans of camels, horses, mules, and animal-drawn carts averaged 25–30 km/day in Ottoman Period Turkey prior to the outbreak of World War I (Issawi 1980:151).

Sandars 1985:121–24). During the Zulu War of 1879 in Natal, teams of oxen used for military transport could not be counted on for more than 17 km/day (D.R. Morris 1998). It should be borne in mind that the American West and Natal most likely were not as densely populated as was the Levantine coast at the time of the Philistine migration; therefore, these later movements of people and supplies would not have met with as much local resistance (Sandars 1985:124). Another important consideration is the maintenance of oxen: they require eight hours of grazing and eight hours of rest per day, thus leaving only eight hours for travel (121).[61]

A reasonable daily travel estimate for a large group of people moving along the Levantine coast by oxcart at the end of the Late Bronze Age would be *ca*. 15 km/day. At this rate of speed, the trip from Cilicia to Philistia (= *ca*. 750 km) would take 50 days, if one assumes constant movement and excludes any major delays brought on by hostile encounters, inclement weather, and cart repairs.[62] The average distance covered by a

[61] Based on modern ethnographic data, it seems that the average workday for oxen ranges from eight to fourteen hours (Bartosiewicz, van Neer, and Lentacker 1997:30). The average rate of travel for load-bearing oxen along roads is 4–6 km/hr (31). In light of the likely poor conditions of roads at the end of the second millennium (see p. 68 above), this figure should probably be reduced by half (*i.e*., 2–4 km/hr) for the Philistines' putative overland migration. At this rate, a fully laden oxcart could travel 16 to 24 km/day, if one assumes eight hours of travel per day. These figures are in accordance with the daily travel rates derived from historical sources outlined above. Cattle also require the most maintenance of typical Near Eastern herd animals (*i.e*., sheep/goat, camel): they require the most water, and, subsequently, cannot range far from water sources, especially under strenuous conditions (K. Russell 1988:57, 59). For an illustration of draft animals, including oxen, in the camp of Ramesses II's army near Qadesh, see Breasted 1903, Pl. I.

[62] Aside from these unforeseeable setbacks, there was also the inevitable daily concern of sufficient food and water, both for the soldiers and their animals. Egyptian armies sometimes obtained provisions by the pillaging of settlements and fields (J.A. Wilson in ANET 239); however, the most effective strategy was to have regional client kings provide for the troops. Usually this involved only food (EA 226, 2–4; 324, 12–14; 325:15–19), but sometimes horses, chariots (EA 141, 18–30; 142:25–31), oxen (EA 193, 5–24), and tents (EA 337, 7–14) were also supplied. While on campaign, Thutmose III received imposts of food, and, on at least one occasion, ships from harbor towns along the Levantine coast (ARE II §§472, 483, 492, 510, 519, 535). There was also the matter of setting up and striking camp. Modern ethnographic study of East African pastoralists indicates that it takes approximately two hours to either assemble or disassemble and pack a tent or shelter (K. Russell 1988:87). It took three hours to construct an entire Imperial Roman military camp beginning with the *praetorium* and then radiating outwards (Harmand 1967:132, n. 240). For references to the setting up of camp of Ramesses II's army near Qadesh prior to his attack on the city,

fleet of ships per day, based on ancient accounts (see Chapter 5, pp. 148–49, Table 12) and the experimental voyage of Kyrenia II, a replica of a fourth-century merchantman (Katzev 1990; Carioulou 1997), is *ca*. 50 NM, or 92.5 km. A journey by sea from Cilicia to Philistia (*ca*. 550 km), then, could take under a week; therefore, migration by sea was not only quicker and easier than by land, but, as the evidence from settlement patterns will show, also much more likely.

2. Settlement Patterns

Late Bronze and Early Iron Age settlement patterns along the Levantine coast do not support the reconstruction of an overland migration. The contrary evidence may be divided into two categories: 1) the location of sites that have yielded significant amounts of the typical Sea Peoples material culture, particularly large quantities of locally produced Myc IIIC:1b pottery; and 2) sites with clear destruction levels at the end of the Late Bronze Age.

The spatial-temporal distribution of the Sea Peoples material culture along the Levantine coast is discontinuous and, therefore, is not suggestive of an overland migration. Thus far, only Tarsus, Ras Ibn Hani, Akko, Dor,[63] Qasile,[64] Ashdod, Tel Miqne, and Ashkelon have produced significant evidence for a Sea Peoples presence,

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see ARE III §298. For a depiction of the tents in that camp, see Breasted 1903, Pl. I. For the depiction of Assyrian military tents, see ANEP 52:170–71.

[63] The earliest Iron Age strata at Dor (*i.e*., Area B1, Stratum XII; Area G, Phase 10) have been dated to 1150–1050 and correspond chronologically to the Bichrome Phase in Philistia (Stern 1991:88; 1998:348–49). The initial "Sikkil" (= first half of the twelfth century) and Late Bronze Age settlements at Dor have not yet been exposed (1999; cf., however, Garstang 1924b for a report of the early British excavations during which Late Bronze Age and "Philistine" pottery was found). The attribution of the twelfth-century settlement to the Sikkils is based mainly on the Tale of Wenamon (*ca*. 1100), wherein Dor is called "a town of the Tjeker" (ARE IV §565; see also the Onomasticon of Amenope, Gardiner 1947, pp. 194–205, nos.

primarily in the form of large amounts of locally produced, Myc IIIC pottery and/or PBP. It is no coincidence that all these sites (with the exception of Tel Miqne) are accessible by sea, and, in many cases, possess safe anchorages (see Maps 6–8):

- Tarsus is located on the Cydnus River, approximately 16 km from its point of entry into the Mediterranean Sea (Gasque 1992:333).
- Ras Ibn Hani is situated on a small cape with bays on either side of it (Bounni, Lagarce, and Saliby 1978 233–34, fig. 1).
- Akko is located *ca*. 700 m from the sea, near one of the few bays along the coast of Israel. Moreover, the site is not far from the Na'aman River, which probably flowed closer to the tell in antiquity (M. Dothan 1993b:17).
- Dor is surrounded by well-protected, shallow bays and lagoons, and, more importantly, a quay dating to the twelfth century has been excavated at the site (Raban 1985:23–27; 1987; 1988:272–84; 1995).
- Qasile was established *ca*. 2 km from the sea and *ca*. 200 m north of the Yarkon River, along the banks of which was most likely an inland port that served the site (A. Mazar 1980:3; 1993b:1204).
- Ashdod is located about 4 km from the coast and 2 km from the Nahal Lachish (M. Dothan 1973:1–2).[65]
- Ashkelon is located directly on the sea (Stager 1993:103), although the site does not seem to have had a harbor or safe anchorage throughout most of antiquity.[66]

268–70). Also, numerous Sea Peoples-type finds (*e.g*., Philistine Bichrome pottery, incised scapulae, knives with ivory handles and iron blades) familiar from sites in Philistia and Cyprus (see Chapter 1, pp. 18–19) have been found at Dor (Stern 1998:346–48).

[64] Tell Qasile was uninhabited in the Late Bronze Age and during the period of the initial Sea Peoples settlement (*i.e*., PMP phase). It was first settled in the second half of the twelfth century (= Stratum XII) as part of the Philistine expansion at a time when Philistine Bichrome pottery was being produced (A. Mazar 1985a:119–22).

[65] This river estuary may have been closer to the site in antiquity: according to the British Survey map prepared *ca*. 1930, the Majm'a stream (= Nahal Lachish) was only *ca*. 800 m from the tell (see M. Dothan 1973:2, n. 2).

[66] Excavations and surveys along the coast of Ashkelon directed at locating the ancient harbor have so far yielded little positive evidence (Galili and Sharvit 1998:102). Islamic Period writers note either the absence of a harbor at Ascalon or describe it as being "unsafe" (for references, see Sharon 1995:65). During his visit to the Holy Land, D. Roberts reported that the mole at Ashkelon had been swept away (1842:131). At the turn of the century, Mackenzie assumed that there had been a harbor near the sea gate, along a sand-blocked creek at the southern end of the tell (1913:16, 18); however, no traces of this harbor have yet been found. The means of bringing goods and people ashore was probably via smaller boats that

These sites are more closely connected to the sea than to the interior of the coastal plain, through which the main overland route ran. The coastline south of Rosh Hanikra was largely covered by sand dunes and marshes; therefore, the Via Maris favored easier terrain along the foothills[67] and, occasionally, farther inland through passes such as the Jezreel Valley and Wadi Milḥ. There are no sites with the typical features of the Sea Peoples material culture along these interior routes (except for Tel Miqne and Tell eṣ-Ṣafi = Gath of the Philistines[?]). Although Philistine pottery has been found there (*e.g.*, Tell Keisan, sites in the Jezreel Valley, Beth Shean, Aphek, Gezer; see T. Dothan 1982a:Map 2), either it appears in amounts too small — a few sherds at the most — to be considered as indicative of a Sea Peoples presence, or, it dates to the Bichrome Period, that is, a generation removed from the initial settlement. In either event, the Sea Peoples pottery at these sites is not accompanied by the wide range of other intrusive features of the

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ferried back and forth between ships anchored offshore and the site, as was the practice at Jaffa until recent times (Hull 1889:148).

[67] The accounts of earlier travelers and archaeologists who were familiar with the coastal plain are apposite here. Speaking of Dor, Garstang observed:

> Separated even from the main coast road by the ridge of rocks which at this point runs parallel to the sea, and at a distance of only half a mile, it displays no interest in the traffic which passes just out of sight on its way to Haifa or the Plain of Sharon, and its inhabitants to-day admit that they have practically no dealings with the colonists of Zimmarin, although their fields must in most cases be in contact, and the latter is the local administrative centre. That there should have been any political connection between this denizen of the sea and the inland fortresses beyond the foothills of Carmel is surely inconceivable, and the little we know of the coastal conditions in early times serves only to confirm us in this view (1924a:38).

Hull, on his journey through the southern coastal plain, bypassed Ashkelon "which lay several miles to the west of our road" and noted the advancing sand dunes and their disastrous effects on those towns and fields situated directly on the coast (1889:145–46). In their survey of Western Palestine, Conder and Kitchener observed that the coastal road was simply a beaten track and showed "no signs of antiquity," whereas the interior road along the hills appeared "ancient, as evidenced by the milestones and by the fragments of a side-fence of stones in places" (1998:418).

Philistine material culture (see Chapter 1, pp. 11–33) that strengthen the argument for the settlement of a foreign population.[68]

An overland migration should produce along its proposed route a continuous string of sites bearing elements of the migrating people's (here Philistine or Sea Peoples) material culture and/or a series of destruction levels in their wake. Neither is the case for the coastal Levant at the end of the Late Bronze Age. The Sea Peoples material culture is conspicuously absent at numerous sites along the Levantine coast (*e.g.*, Ras el-Bassit, Tell Sukas, Tell Kazel, Ṣarepta, Tyre), where Late Bronze and Early Iron Age strata have been excavated. The majority of these sites are also without clear destruction levels *ca*. 1200.

D. Conclusions

Having explored in great detail the Philistines' putative overland migration, let us return now to its source of inspiration — namely, the reliefs and inscriptions at Medinet Habu. As noted above (see p. 35), the depiction of Philistine men, women, and children in ox-drawn carts in the "Land Battle Scene" (see Ill. 1) has led many scholars to conclude that some part of the Philistine population arrived by land. That four, rather than two, oxen should pull a two-wheeled cart is thought unusual; the extra two oxen, according to this view, were tied and brought along as part of the overall movement of people, livestock, and supplies (Littauer and Crouwel 1979:74; Sandars 1985:121). It is

[68] The probable Egyptian garrisons at Beth Shean (James and McGovern 1993) and particularly Megiddo (see Chapter 4, pp. 109–11), which seem to have lasted throughout the first half of the twelfth century, would have frustrated any overland movement through the region by a large group of people antipathetic towards Egypt. Travel by sea would have allowed the Philistines to circumvent this strong Egyptian presence in the Jezreel and Jordan Valleys and to settle in the relatively unprotected southern coastal plain.

not uncommon, however, for teams of four or more oxen to be used for plowing and hauling (Bartosiewicz, van Neer, and Lentacker 1997:31–32). Indeed, as early as the third millennium in Mesopotamia, there are depictions of four equids pulling two-wheeled chariots (ANEP 50:163, 166).

In any event, the depiction of oxcarts should not be taken *prima facie* as evidence for an overland migration from as far away as Asia Minor, Cilicia, or even Amurru. This assumption is largely founded on a juxtaposition of the "Land Battle Scene" (set in an unidentified location) with the reference to the Sea Peoples' devastation of Amurru and encampment there (ARE IV §64). Never is it stated, however, that the Egyptians met the Sea Peoples in Amurru. Therefore, there is no explicit reason to suppose that those Philistines shown riding in oxcarts migrated by land from this region.

The most feasible reconstruction of the Philistines' encounter with Egypt was first suggested by Rainer Stadelmann, who convincingly demonstrated that both the "Land" and the "Naval Battle" scenes at Medinet Habu were set in the eastern Delta (1968:165–67 followed by Helck 1979:141; Bietak 1993:293–94). His argument was based primarily on the following two observations: 1) there are no details (such as placenames and descriptions of battles) of the Egyptian army's march north to meet the enemy, whereas these details are commonly found in the military annals of previous pharaohs; and 2) the border of Djahy (= Syria-Palestine), which Ramesses III claims to have fortified in anticipation of the Sea Peoples' approach (ARE IV §65), most likely was located no farther than Piramesse. Furthermore, Egypt's ability to intervene as far north as Amurru during the Twentieth Dynasty is highly questionable. Today, most scholars feel that Ramesses III's conquests in north Syria and Anatolia (ARE IV §115–35; Nelson

1932:Pls. 67A, 69, 87–90, 94–95) were plagiarized from Ramesses II and, therefore, are of little historical value (*e.g.*, Stadelmann 1968:166; Malamat 1971:35; Helck 1971:248; Faulkner 1975:243; Drenkhahn 1984:115; Lesko 1992:153). This belief is based largely on the knowledge that Ramesses III borrowed building materials from the nearby Ramesseum for his own mortuary temple.[69]

The Philistines and other Sea Peoples, then, need not have proceeded in their oxcarts overland from Amurru — where, notably, there is no evidence for a Sea Peoples presence (see p. 52, n. 34 above) — to the Egyptian border. Rather, they could have set out from nearby southern coastal Canaan, where they had already established bridgeheads prior to their assault on Egypt in the eighth year of Ramesses III's reign (Bietak 1993:299–300).[70] Those populating these bridgeheads came by sea (Stager 1995:341), as the settlement pattern of Sea Peoples sites strongly suggests.[71] The Sea Peoples' attack on and encampment in Amurru should perhaps be understood more as a quick seaborne raid and bivouac than as part of a slow overland advance. A similar event might lie behind the participation of the crews of Odysseus' fleet in a pillaging of the Nile Delta by the Greeks (*Od*. XVII.425–45). As for the oxen and oxcarts depicted at Medinet Habu, either they could have been acquired in southern coastal Canaan upon the Philistines' arrival, or, they could have been transported overseas along with the migrating population (see Chapter 5, pp. 128–29). The size of this population is a major constraining factor on

[69] For a brief discussion of the evidence concerning Ramesses III's proposed plagiarism of Merneptah's *magnalia belli*, see Chapter 4, p. 104, n. 2.

[70] Singer detects a similar two-pronged sea and landborne invasion upon the kingdom of Ugarit at this time (1999:725): the oft-cited piratical activity in this region (see Chapter 5, pp. 126, 143), which is frequently attributed to groups of Sea Peoples, may have been coordinated with an overland advance of an unnamed enemy force from nearby Mukish (KTU 2.33).

[71] Furthermore, contemporary texts and depictions clearly show that the Sea Peoples (*i.e.*, the Philistines, Sherden, Sikkils, Lukka, Ekwesh?) traveled by sea (see Chapter 5A, pp. 124–27).

the foregoing reconstruction of the Philistine seaborne migration and is the focus of the following chapter.

Chapter 3. Population Size of the Philistine Pentapolis

Central to a reconstruction of the Philistine seaborne migration is a population estimate of their initial settlement. Whether they numbered a few hundred or a few thousand will affect how one models their mode of transport. The estimate will be first based on the excavated areal extent of those strata associated with the initial Philistine settlement — namely, Ashdod Stratum XIII, Tel Miqne Stratum VII, and Ashkelon (various) (see also Chapter 4, pp. 114–15). From these three sites I shall derive an average Pentapolis city size, which I shall then extend to the two largely unexcavated Pentapolis sites, Gaza and Gath.[1]

Next, various population estimate formulas based on settlement size and density will be applied in order to arrive at a potential range of population for Early Iron Age Philistia. Finally, these numbers will be combined with the results of Chapter 5, "Late Bronze and Early Iron Age Seafaring," so as to determine the feasibility of such a seaborne migration. If the estimate of the incoming population is larger than Late Bronze/Early Iron Age maritime technology would have allowed, then the model needs readjustment. Either the estimate is too large, or maritime technology was more advanced than previously supposed.

Closely related to the question of the size of the intrusive Philistine population is the problem of Philistine ethnicity. As many have argued, it is possible that some

[1] This average Pentapolis city size will be compared with what little is known about Gaza and Gath through the limited excavations, and based on the visual appearance of the sites. Both Tell eṣ-Ṣafi and Tel Haror (Stager 1995:342–43) will be taken into consideration as the potential site of "Gath of the Philistines."

percentage of the population at Philistine sites was comprised of indigenous Canaanites.[2] In addition, there are also those who question the applicability of the concept of ethnicity for pre-modern societies (Sherratt 1998:307). A review of the current views on ethnicity, its detection in the archaeological record, and its bearing on the Philistine settlement appears in Chapter 4B (see pp. 116–22). The conclusions reached there and in this chapter will be combined to produce a working estimate for the number of migrating Philistines.

A. Areal Extent of the Philistine Pentapolis

1. Ashdod (Map 9)

As in the Middle and Late Bronze Ages, the initial Philistine settlement at Ashdod appears to have been confined to the upper city.[3] Only Areas A/B, H, and G have yielded Stratum XIII remains datable to the first half of the twelfth century (see Appendix A, pp. 228–30). On the southern edge of the acropolis in an Area A probe, remains from the early Philistine Period were found (= local stratum 12),[4] but these did not include any

[2] The Philistine settlement has long been viewed as the imposition of a small, foreign, ruling élite over a largely indigenous, Canaanite, subject population (*e.g.*, B. Mazar 1986:64; T. Dothan 1982a:19; Brug 1985:204; A. Mazar 1985b:106; 1988:257; 1990:313, 327; see also Chapter 6, p. 163, n. 7). Others regard the population of Philistia simply as eclectic without the hierarchical distinctions (M. Weippert 1988:392; Bunimovitz 1990; Noort 1994:179, 183).

[3] Approximately 100 m south of the acropolis, Area C produced PBP from debris layers and pit fills (Bachi 1971:181–84). The city expanded eastwards and probably northwards at the end of the Iron I Period (= Stratum XI), as seen by the gate excavated in Area M (Dothan and Porath 1982:52). The city reached its farthest southern and western extent in the Iron II Period with the potters' workshops from Area D (Bachi and Ben-Dov 1971). The entire mound of Ashdod encompasses an area of approximately 35 ha (Dothan and Freedman 1967:14).

[4] Local strata 13 (Area A) and 6 (Area H) correspond to general Stratum XIII, the period of the initial Philistine settlement. For this period, Area G was excavated according to the general Stratum sequence. For the local strata corresponding to the final Canaanite settlement, see Appendix A, p. 228, n. 9.

architecture (M. Dothan 1971:25–27, Plan 2). Directly south of Area A, in Area B, the strata corresponding to the early Philistine and later periods were removed by local inhabitants over the years or lost to erosion (Dothan and Friedman 1967:74). On the western side of the acropolis in Area H, clear Philistine occupation does not begin until the Bichrome Phase (= local stratum 5). A transitional LB II/Early Iron Age stratum was identified (= local stratum 6) that consisted of four walls forming a 2.50-m^2 room (= L5030) and a single stray wall (= W5034) a little to the west (M. Dothan 1971:156, Plan 20). Farther downslope, the western city wall of the acropolis was presumably eroded away (158).

The best exposure of Stratum XIII at Ashdod is in Area G on the northern side of the acropolis. Over the Late Bronze Age "Governor's Residence" (see Appendix A, p. 235), the Philistine settlers either reused earlier architectural elements, or leveled the area and began anew. The southern half of Area G remained a semi-open area, separated from the Late Bronze Age room floors and courtyard surfaces by a thin fill, and was marked by a change in pottery (Dothan and Porath 1993:53). In the north the transition was marked by destruction of the LB structures and the subdivision of a Stratum XIV courtyard (= locus 4309) into five small residential rooms (= loci 4277, 4106, 4260, 4259, 4270) in Stratum XIIIb (Dothan and Porath 1993:54, Plans 8–9). The entire exposure of Stratum XIIIb in Area G is approximately 30 m x 12 m.

Based on the discovery of Stratum XIII material in all areas of excavation on the upper mound,[5] it is reasonable to assume that the early Philistine settlement covered the entire acropolis. The acropolis encompasses an area of 6 to 8 ha (Dothan and Freedman 1967:15–16), which will serve as the estimated size of the initial Philistine settlement at Ashdod.

2. Tel Miqne (Map 10)

Of all the Pentapolis sites, Tel Miqne provides the clearest picture of the initial Philistine settlement. Stratum VII architecture and pottery appeared in most excavation areas of which Fields I and X will be reviewed here.[6] Field I, which has the widest exposure of the initial Philistine settlement, covers squares (= 5 m x 5 m) INE 2, 3, 4, 5, 6, and 37 (Killebrew 1996a:16), as well as ISE 133 and 134 (1984:32–33). The dominant feature in Field I is a massive 4.25-m thick mudbrick city wall (= INE6, W6004; see Dothan and Gitin 1982:10–11; Killebrew 1984:8–9, Plan 70; 1996a:16–17). This same wall has been excavated farther south in Field I (= ISE133, W133003; ISE134 W134002; Killebrew 1984:32–33, Plan 40), along the southern edge of the tell in Field III (Gittlen 1984:5), and along the western edge of the tell in Field X (Bierling 1998:13–14). An earthen rampart or glacis (Dothan and Gitin 1982:11; Killebrew 1984:27) protected the

[5] Area K reached only Iron II strata; however, this was due to insufficient excavation and not to the absence of earlier strata in this area. Farther downslope, Area H had these earlier strata closer to the surface, thereby facilitating their excavation and complementing the later strata of Area K (M. Dothan 1971:Plan 22).

[6] The Stratum VII remains of Fields III and IV have not yet been made available, but will appear soon in upcoming *Ekron Limited Edition Series* volumes. In the meantime, for the "disparate architectural elements" of Stratum VII in these fields, see Gitin and Dothan in Wolff 1998, p. 783. Field II was excavated to a depth of approximately a meter, exposing only Iron II strata (MacKay 1995).

outer face of the wall. Inside of the wall, the excavators uncovered Stratum VII (= local phase 9) walls, surfaces, and installations (including kilns; see Killebrew 1996b:146–47, figs. 13–15) across a 5 m x 20-m area (= INE 2–5; see Killebrew 1984:21, 24; 1996a:16–17).

Field X was also dominated by this mudbrick city wall (= W90006), where it was exposed for an 11-m stretch and its thickness reached 6 m (Bierling 1998:13, 315). It was built directly on top of the MB II rampart, once again proving that the entire tell, except for Field I, had been abandoned during the Late Bronze Age (Gittlen 1992). Inside the wall, "Complex 200" consisted of approximately ten rooms, complete with walls, floors, and installations, covering an approximately 25-m^2 area (= XNW 77–79, 89–90; see Bierling 1998:14–15).

Anticipating similar results from the rest of the tell, the excavators at Tel Miqne put the size of the Iron I/Stratum VII city at *ca*. 20 ha, thus encompassing the entire mound (T. Dothan 1997:99–100). This expansion and return to Middle Bronze Age dimensions in the Early Iron I is accompanied by a complete destruction of the 2.50-ha, Late Bronze Age city in Field I (T. Dothan 1998a:150–52).[7]

3. Ashkelon (Map 11)

The size of Ashkelon at the time of the Philistine settlement is less clear. Because of the almost continuous inhabitation of the site from the Middle Bronze Age to the

[7] At about 1,000 the city once again shrank to the 2.50-ha acropolis (= Stratum IV), followed by a period of resurgence culminating in the eighth century (= Stratum I), when the city expanded to about 34 ha (Dothan and Gitin 1993:1056).

Crusader Period (Stager 1991; 1993), the earlier periods are buried beneath meters of archaeological buildup. Consequently, despite the 16 years of modern excavations, twelfth-century remains have been exposed in only a few places. The arc of fortifications, first constructed in the Middle Bronze Age and rebuilt numerous times in later periods, enclosed an area of approximately 60 ha (Stager 1993:103). The question remains, how much of that area was inhabited during the Early Iron Age I?

Thus far, the most evidence comes from the modern excavations in the middle of the tell, designated Grid 38.[8] In the northern half of the excavation area (= Grid 38, squares 63–64), although the LB/Early Iron I transition was poorly preserved, floors and walls associated with PMP were found (Stager and Esse 1987:68). In the southern half of the grid (squares 73–74, 83–84) there is now a wide exposure of the early Bichrome/twelfth-century Philistine settlement (Bloch-Smith 1998). In this period (= Phase 18), Grid 38 appears to have been primarily an open area, in part devoted to the production of wine and possibly also grappa, as witnessed by a number of winepresses and the previously mentioned, sunken jar installations (see Chapter 1, pp. 31–32). PMP had already begun to appear in small amounts in Phases 17 and 18, indicating that the earliest Philistine strata are soon to come. When complete, the exposure of the initial Philistine settlement in Grid 38 will be almost 40 x 25 m.

Along the sea in a 12.40 x 9.00-m trench (= Area 19), the early British expedition succeeded in excavating a clear Late Bronze (Stage V) to Philistine (Stage VI) transition. A "thick line of ashes and black" separated LB strata with Mycenaean and Cypriote

[8] The British excavations led by Garstang and Phythian-Adams on the south mound, called al-Hadra, brought to light Philistine pottery, and possibly a "Philistine house," in the same area (= Fields 183, 187; see Garstang 1921:73–74, Pl. 1).

imports from Iron Age strata with PBP, among which was "the typical Philistine cup with horizontal loop handles" (Phythian-Adams 1923c:63–64, figs. 2–4). Modern excavations in the same area (= Grids 50, 57) have not been so lucky; thus far no clear PMP strata have been found in squares where the Late and Middle Bronze Ages have been reached (S. Cohen 1997; 1998).

The northwestern corner of the tell (= Grid 2) is the only other excavation area where a depth sufficient enough to reach Early Iron Age strata was achieved. The earliest Iron Age building activity dates to *ca*. 1,000, when two mudbrick towers and connecting curtain wall were constructed atop the massive Middle Bronze Age glacis (Stager 1991:7; 1993:107; 1998:162). The presence of large amounts of PMP and PBP in Grid 2 fills, however, is a strong indication that the twelfth-century settlement also encompassed the northern tell (Stager 1995:342).

There is evidence, then, for an early Philistine settlement that stretched from the northern edge of the tell (= Grid 2) to the southern edge of the smaller central mound (= Grid 57),[9] a distance of *ca*. 900 m. Based on the excavations in Grid 38 it appears that this settlement extended at least 250 m inland. Furthermore, some part of the tell has been eroded by the sea; if a strip of as little as 20 m has been lost, then this would add approximately 18,000 m^2 (= 1.8 ha) to the size of the earliest Philistine city. A conservative estimate for the size of the initial Philistine settlement at Ashkelon, therefore, is *ca*. 900 x 270 m, or roughly 24 ha.

[9] Mackenzie (1913:16, 22–23, Pl. 1) and Garstang equated this smaller central mound (approximately 200 x 200 m) with the full extent of the Philistine city. Excavations along the northern ramparts in Grid 2; however, indicate that the Iron I city was much larger.

4. Gaza

Virtually all that is known about Bronze and Iron Age Gaza comes from ancient texts, which describe a major coastal center very much a part of the international milieu that encompassed the coastal Levant in the latter half of the second millennium. Because of the location of the mound of Gaza beneath the modern city, excavation of the Canaanite and Philistine strata has been limited to a few soundings made by the British in the 1920's (Garstang 1920; Phythian-Adams 1923a; 1923b). Working near the northern perimeter of the site, they excavated a series of fortification walls, the earliest of which may date to the Late Bronze or Early Iron Age (Phythian-Adams 1923a:13; Ovadiah 1993:465). A few Cypriote imports were found, as well as typical Philistine forms such as decorated kraters and a horizontal, loop-handled cup (Phythian-Adams 1923b:28–29). The excavators surmised that Late Bronze Age Gaza was to be found closer to the center of the tell.

Although exceedingly little is known about Gaza through archaeology, a few historical and topographical details about the site with a bearing on size are worth noting. Gaza was clearly an Egyptian administrative center during most of the Late Bronze Age, probably right up to the reign of Ramesses III (see Appendix A, p. 232); therefore, the Philistines likely inherited a significant site at the time of their settlement. The outline of the ancient city walls, which probably date to the Byzantine era, enclose an area of approximately 64 ha (Joanne Clarke, Gaza Mapping Project, pers. comm.).[10] Although there is far less evidence for the size and population of early Philistine Gaza, certain

[10] Cf., however, Weinstein who reports that the ancient tell covered an area of approximately 55 ha (2001a).

indications suggest that it was on par with, and possibly even larger, than the other Philistine Pentapolis cities.[11]

5. Gath

Of all the Pentapolis sites, the least is known about Gath, including its location. Following the initial suggestion of Josias L. Porter (1858:252), most scholars identify Tell eṣ-Ṣafi with "Gath of the Philistines" (*e.g.*, Bliss and Macalister 1902:35; Rainey 1975; Aharoni 1979:174, 271; Singer 1993:134; Finkelstein 1996b:228, n. 17; Schniedewind 1998:75; Boaz and Maeir 1998:33);[12] however, Lawrence E. Stager has suggested recently Tel Haror (1995:342–43; 1998:162) for various reasons that will be reviewed below.[13] The main source of archaeological data concerning Tell eṣ-Ṣafi derives from the turn of the century British expedition led by Frederick J. Bliss and Robert A.S. Macalister (Bliss 1899a; 1899b; 1900; Bliss and Macalister 1902). Currently, the site is being re-excavated by a team led by Aren Maeir of Bar Ilan University; however, they have not yet reached Iron I strata (Boaz and Maeir 1998).

The British were restricted in their excavations by the presence of an Arab village, cemeteries, and a Muslim holy tomb (*wêli*) and, therefore, were only able to dig in certain areas (Bliss 1899a:191). They did manage to expose several large areas in the middle of

[11] The centrality of Gaza in the Samson cycle (see Judges 13–16), usually dated to the twelfth century (see Chapter 1, p. 23, n. 19), may reflect the importance of Gaza amongst the Philistine Pentapolis cities during this early period (Singer 1993:132–33).

[12] The case for this identification, based on biblical and post-biblical sources, is most thoroughly presented by Rainey (1975); Singer reaches the same conclusions by focusing on evidence from the Amarna Letters (1993:135–39).

[13] Albright suggested identifying Tel 'Erani with "Gath of the Philistines" (1921/22:10–12); however, excavations at the site more than 40 years later failed to produce corroborating evidence (Yeivin 1993). For Wright's proposal of Tell esh-Sharia, see p. 89, n. 19 below.

and along the western side of the tell down to bedrock, as well as probe along the southern city wall, where they chanced upon an ancient dump (Bliss 1899a:197). All excavation areas were divided into the following four periods (see Oren 1993c:1523), which were later revised by William F. Albright (1971:30–31): "Early Pre-Israelite" (Bliss/Macalister: ? – 1500; Albright: 3000 – 1800), "Late Pre-Israelite" (1500 – 800; 1800 – 1000), "Jewish" (800 – 300; 1000 – 587), and "Seleucid" (300 – ?; 400 – 100). In those strata corresponding to the "Late Pre-Israelite" Period, imported Mycenaean, Cypriote, and Philistine pottery was found in unspecified contexts (Bliss 1899b:324, Pl. 2; Bliss and Macalister 1902:87–96, Pls. 35–44).[14]

Surveys at the site, particularly the work carried out as part of the renewed excavations, contribute important data to the vague archaeological picture of Tell eṣ-Ṣafi. Focusing on the southern, eastern, and western slopes of the tell, Yohanan Aharoni and Ruth Amiran collected pottery from all phases of the Bronze and Iron Ages (1955:222). They noted a Cypriote "milk bowl" fragment and a predominance of Iron II material among the Iron Age pottery. In the recent survey work, the co-directors identified a lower tell, thereby raising the site size estimate from 15 to 35 ha (Boaz and Maeir 1998:35).[15] They also found pottery from throughout the Bronze and Iron Ages with a

[14] The only context given, albeit vague, is for a restored Philistine Bichrome strainer jug that came from the "monolith temple" (Bliss 1899b:324, Pl. 2), later identified by Albright as a typical, Iron Age, four-room pillared house (1942a:65–66). One skyphos, probably from Tell eṣ-Ṣafi, may be Philistine Monochrome (Bliss and Macalister 1902:89, Pl. 35:10). Although provenience was rarely given for any object in the final report (including site of origin since the final publication groups together finds from Tell Zakariya, eṣ-Ṣafi, ej-Judeideh, and Sandahannah), the authors do mention that most of the decorated "pre-Jewish" pottery came from Tell eṣ-Ṣafi (90).

[15] Also reported as *ca*. 40 ha in Wolff 1998, p. 785. Bliss and Macalister, who were considering only the upper mound, gave dimensions of 200 x 400 m (approximately 6.60 ha) for the size of the site (Bliss 1899a:91).

significant amount of Iron I, including PMP and PBP (Boaz, Maier, and Schneider 1998:156).[16]

Based on the available evidence, and until the renewed excavations reach Iron I strata, these are the provisional conclusions regarding the size and settlement of Tell eṣ-Ṣafi during the early Philistine period. The presence of PMP on the slopes of and on top of the upper mound (Bliss and Macalister 1902:89, Pl. 35:10; Aharoni and Amiran 1955:222; Boaz, Maier, and Schneider 1998:156)[17] indicates that there was some form of settlement on the upper mound during the Early Iron I Period. In all the excavation areas of Bliss and Macalister (with the exception of Area E which contained the Crusader fortress), they uncovered pottery from the "Late Pre-Israelite" Period (1500–800), thus not proving, but still allowing for, the possibility of an early Philistine settlement (Stern 1993c:1522–23). It is still too soon to state whether the lower tell was inhabited during the Iron I Period, or if the settlement expanded to this area only in the Iron II Period, as has been observed at other Pentapolis sites.[18] Therefore, a reasonable provisional estimate for the size of Tell eṣ-Ṣafi at the beginning of the Iron Age is approximately 7 ha, or, the size of the upper tell.

Tel Haror (= Tell Abu Hureirah) is an 1.50-ha site in the western Negev, situated along the Nahal Gerar and approximately 20 km southeast of Gaza (Oren 1993a:580). Based on the significant amounts of PMP found at the site (Oren 1993a:582; Oren *et al*.

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[16] Also, a few PMP sherds were found in Early Iron Age pits on the upper tell this past summer (A. Maeir, pers. comm.).

[17] Also, T. Dothan is publishing a vessel from Tell eṣ-Ṣafi that is probably Philistine Monochrome (reported in Stager 1995:343).

[18] Ashdod grew from 6–8 ha in the Iron I Period to about 35 ha in the Iron II (see p. 79, n. 3 above). Tel Miqne was already a large site at the time of the Philistine settlement at *ca*. 20 ha, but eventually grew to *ca*. 34 ha in the eighth century (see p. 82, n. 7 above). Ashkelon was probably *ca*. 24 ha in the twelfth century and may have expanded to 50–60 ha by the beginning of the Iron II (Stager 1991:3–7; 1993:106).

1991:12) and certain geographical considerations, Stager has proposed that "Gath of the Philistines" be identified with Tel Haror (1995:342–43; 1998:162).[19] Essentially, there are three geographic reasons for this identification: 1) the proximity of Ziklag (= Tel Sera'?) to Gath in the biblical accounts that involve David and Achish, ruler of Gath (see I Sam. 27–29); 2) the nearness of two Pentapolis sites in the north of Philistia — namely, Ekron and Tell eṣ-Ṣafi = Gath(?); and 3) the need to have a Philistine center guarding the southeast extremity of Philistia. The archaeological justification for the identification of Gath with Tel Haror is the discovery of more PMP there than at any other site except Ashdod, Ashkelon, and Tel Miqne.

Thus far, the majority of the Philistine pottery at Tel Haror comes from Area B, a two-dunam low rise in the northwest part of the tell (Oren *et al*. 1989/90:69). Dating to the eleventh/tenth-century transition, Stratum B–1 contained typical hand-burnished bowls and no Philistine pottery (Oren *et al*. 1986:62). Stratum B–2, which had late type PBP and irregularly burnished bowls, was dated to the eleventh century. Stratum B–3 is usually discussed as part of a more general Stratum 2–4. The fragmentary Stratum B–4 was without Philistine pottery and, therefore, dated to the early twelfth century (Oren *et al*. 1989/90:70). The significant amounts of PMP and PBP (= <25% of the total ceramics) come from a series of large refuse pits in use throughout Strata 2–4 (Oren 1993a:582). Philistine pottery appeared elsewhere at the site,[20] but always from secondary contexts, and never PMP alone.

[19] Wright was the first to propose this southwestern location, although he identified Tell esh-Sharia with "Gath of the Philistines" (1966:78–86). At the time, most scholars associated Tel Haror with biblical Gerar; however, excavations had not yet been carried out at either site. Thus, the presence of PMP at Haror and its absence at Sharia was unknown.

[20] Forty meters to the south in Area E, pits similar to those in Area B with PMP and PBP were also found (Oren *et al*. 1989/90:70). Northeast of Area B and on the acropolis, late Iron I pottery (including PBP) was found in refuse pits and fill deposits (Oren *et al*. 1986:75).

Clearly, the site was inhabited at the time of the Philistine settlement and either Philistine pottery was produced there, or, Tel Haror was in close contact with sites that did. Unlike the other Pentapolis sites, however, there is no clear PMP stratum at Haror and, thus far, all the evidence indicates that the early twelfth-century site was limited.[21] In light of the size of the other Pentapolis sites during the twelfth century, Tel Haror as "Gath of the Philistines" would be unusually small, perhaps prohibitively so.[22] Even if Tel Haror was not "Gath of the Philistines," this does not preclude the site from having been a part of "Stage 1" Philistia (Stager 1995:342–43); the fact remains that the character of the material culture at Haror was markedly different from that of nearby Tel Sera', which was clearly an Egyptian administrative center during the first half of the twelfth century (= Stratum IX; see Chapter 4, p. 109, n. 8).

These, then, are the conservative, Pentapolis, site-size estimates at the time of the Philistine settlement during the first half of the twelfth century (in hectares): Ashdod, 7; Tel Miqne, 20; Ashkelon, 24; and Tell eṣ-Ṣafi, 7. The average size is approximately 14 ha, which will serve as the estimate for the fifth Pentapolis site, Gaza. The total settlement area for the Philistine Pentapolis is, then, *ca*. 72 hectares.

[21] In the southwest corner of the tell, in Area K, there appears to be a gap between the end of LB II and about 1,000 (Oren *et al*. 1989/90:70). It is possible, therefore, that during the twelfth century, the settlement at Haror did not cover the full *ca*. 15 dunams of the tell. Expanded excavations in Area B should help to clarify the settlement picture of twelfth-century Haror (E.D. Oren, informal lecture at the Albright Institute of Archaeology, December 1998).

[22] Petrographic analyses of those Amarna texts sent by Shuwardata (EA 278–284), who many identify as the ruler of Gath (Rainey 1978:33, 103; Aharoni 1979:174; Na'aman 1998:603, n. 2; cf., however, Weber [1915:1568] who prefers Keilah/Qeltu, and Albright [1942b:37, n. 31] who proposes Hebron), eliminate the western Negev as a potential clay source; whereas the northern Shephelah — that is, the area of Tell eṣ-Ṣafi — remains a possibility (Yuval Goren, pers. comm.). All of the above is based on the assumption that Gath/Gintu of the Amarna texts is the same as "Gath of the Philistines."

The rural component of Philistia at the time of the initial settlement is conspicuously underdeveloped. Of the 41 non-Pentapolis sites assigned by Israel Finkelstein to Philistia in the Iron I Period (1996b:Table 1), only four (*i.e.*, H. Hoga, Nizzanim beach 1, Shafir, Yad Mordekhay junction) fall within the area of "Stage 1" of the Philistine settlement (Stager 1995:334–35, fig. 2).[23] One of these sites is late Iron I (*i.e.*, H. Hoga; see Porath and Milstein 1976), two yielded Philistine pottery, either PMP or PBP (for Nizzanim beach 1, see Busiri and Blumenfeld 1966; for Shafir, see Busiri 1966), and for the fourth, no specific chronological information was available (*i.e.*, Yad Modekhay junction; see Finkelstein 1996b:239). Even if all four of these sites were eventually to produce significant amounts of PMP, it would not seriously affect the demographic picture of the Philistine settlement, in that the combined size of these sites is no more than 5.30 ha. These observations underscore the clearly urban character of the Philistine settlement (Stager 1995:345; A. Mazar 1988a:253). Although there may have been early Philistine sites outside of the Pentapolis, these were few, small, and represented only a slight percentage of the overall settlement population.[24]

B. Methods of Estimating Ancient Populations

[23] See also the Iron I tomb between Ashkelon and Ashdod dated to the first half of the twelfth century, which yielded pottery comparable to Beth Shean VI, Cemetery 900 of Tell el-Far'ah (S), and Tomb 570 at Lachish (Gophna and Meron 1969). No Philistine pottery, however, was found.

[24] The Hebrew Bible indicates that there were satellite villages surrounding the cities of the Philistine Pentapolis. Ziklag, which is described as "a town of the field" (*'îr haś-śādeh*), belonged to Gath, "a royal city" (*'îr ham-mamlākāh*; I Sam. 27:5–6). The king of Gath, Achish, awarded Ziklag to his retainer, David, who came to live "in the field of the Philistines" (*bisdeh Pelishtîm*; I Sam. 27:7; see also Machinist 2000:58). The events described here took place during the reign of Saul in the latter half of the eleventh century and, as such, postdate the Philistine settlement by approximately 150 years. It is certainly possible that there were satellite villages attached to the Pentapolis cities earlier on; however, none has been identified archaeologically thus far. Tel Zayit (Khirbet Zeitah el-Kharab), currently being excavated by Ron E. Tappy of the Pittsburgh Theological Seminary, although situated on the border between Philistia and Judah, may prove to be such a site (for the preliminary survey results, see Tappy 2000).

The determination of ancient population sizes based on excavation and survey data ultimately amounts to an educated guess. A variety of methods have been used in the past, most relying to some degree on modern ethnographic data (for a recent useful summary with further references, see Yerkes 2000:24–27). The estimate is usually expressed in terms of persons per areal unit such as square meters of enclosed living space (*e.g.*, Naroll 1962), dunams/hectares/acres of inhabited sites (see Table 5), or square kilometers of cultivable land (Adams 1965; Broshi 1993a).

Raoul Naroll's equation of one person per 10 m^2 of enclosed living space, which is based on a high allometric correlation in a sample of 18 modern villages (1962:588), has been generally accepted by anthropologists and ancient Near Eastern archaeologists (*e.g.*, Cook and Heizer 1968:95–96; LeBlanc 1971; Stager 1975:187; Kramer 1979:158; Garr 1987:40; Finkelstein 1990:50; cf., however, Marfoe 1980:319). Unfortunately, too few buildings of a clear domestic nature have been excavated at Philistine Pentapolis sites to warrant employing this method.

Land-bearing capacity is used more as a means to fix an upper population limit than to determine an absolute number of people in a given region. The initial Philistine settlement covered approximately 1,000 km^2, or 100,000 ha (Stager 1995:344; 1998:153),[25] bounded to the north by the Sorek River (see Josh. 13:3; 15:10–11; 19:40–46; Judges 3:3; see also Singer 1985:114–18), to the south by the Besor Brook (Stager

[25] The distance from Ashdod to Gaza is *ca*. 37 km; including a few kilometers of hinterland north of Ashdod and south of Gaza, a conservative estimate for the north-south extent of "Stage 1" Philistia is approximately 40 km. Tel Miqne, Tell eṣ-Ṣafi, and Tel Haror are all 20–23 km inland; this, plus a certain amount of hinterland farther east, gives about 25 km for the east-west extent of Philistia. Albright put the north-south extent of Philistine Pentapolis at an overly generous *ca*. 66 km and the east-west extent at a more reasonable 25 km, yielding an area of *ca*. 1,666 km^2 (1975:511).

1995:343), and to the east by the Judean foothills. Once again, by using ethnographic data, it has been determined that in antiquity it took a minimum of 0.70 – 2.00 ha of cultivable land to feed one person per year.[26] By taking the highest coefficient of 2.00 ha/person and applying it to "Stage 1" Philistia (= *ca*. 10,000 ha), this would allow for a population of 50,000, a figure well above any estimate offered thus far for the population size of the Philistine settlement.[27] Therefore, land-bearing capacity cannot be considered a determinative factor for the population of Philistia at the time of their settlement. Estimates based on this method may set population parameters; however, it does little to establish an absolute figure, which is the goal of the present study.

Only population estimation based on settled area, that is, persons per hectare/dunam/acre, is left. There have been many, wide-ranging, population density coefficients proposed over the years and, once again, these are largely based on modern ethnographic study (see Table 5). The underlying assumption in applying these modern ethnographic data to the ancient world is that conditions were sufficiently similar between the present day and the past to warrant such a comparison (Braidwood and Reed 1957:26; Finkelstein 1990:48; Biger and Grossman 1993:22, n. 16). For this reason, census data taken from population areas relatively untouched by modern developments are deemed most trustworthy. Unfortunately, most of these ethnographic studies tend to

[26] Broshi estimates a bare minimum of 1.00 ha/person in Roman-Byzantine Palestine (1993a:422–23); Adams projects 1.00 ha of cultivable land/person (or 1.50 ha of cultivable plus non-cultivable, which includes swamps, canals, and pathways) for Early Dynastic Mesopotamia (1981:87; Adams and Nissen 1972:29); Kramer suggests 0.70 ha or less in her study of a modern Iranian village (1980:328); Hopkins gives 2.00 ha/person as a reasonable, but not generous, estimate for the rural population of Classical Italy (1978:7, n. 13).

[27] Finkelstein calculates 30,000 inhabitants for Iron I Philistia (1996b:235–36; 2000:172); this figure includes, however, sites outside of the "Stage 1" area and sites founded after the initial Philistine settlement. Stager puts the size of the initial Philistine population at 25,000, all of whom arrived by boat and drove out the indigenous Canaanites (1995:344). Broshi estimates the population of the Philistine city-states during the Iron II Period to have been 50,000 people (1993b:15).

be of village populations and not of urban centers, the latter of which more closely correspond to the nature of the Philistine settlement. Nonetheless, these studies are instructive for their role in establishing parameters of population density.

For village populations (both individual and regional) the population density coefficients range between 100 and 300 persons per hectare, with an average of about 180 (*e.g.*, Gremliza 1962; Kramer 1979; Sumner 1979:166; Van Beek 1982:65; Biger and Grossman 1993:24). In some cases it has been observed that population density decreased as site size increased (Wenke 1975/76:75ff.; Biger and Grossman 1993:24–25, Table 1; cf., however, Sumner 1979:166–67). This phenomenon may be due to the allocation of greater space to public use in larger settlements and/or to consistent cycles of population growth and saturation followed by settlement expansion (Sumner 1979:167; Biger and Grossman 1993:26). It is worth noting that, in their analysis of the 1938 census of 131 Palestinian villages, Gideon Biger and David Grossman noticed a significantly higher population density for villages in the Shephelah and southern coastal plain (*i.e.*, 281 and 275 persons/ha respectively), as opposed to the other plain regions (*i.e.*, average of 208 persons/ha), as well as the mountainous areas (*i.e.*, average of 143 persons/ha)[28] (1993:24–28, Table 3).

Determining population densities for urban areas in antiquity based on modern ethnographic data is more difficult than attempting the same for rural areas. First, there are fewer excavated cities with the wide exposures that can often be achieved at smaller

[28] Cf., however, Finkelstein, who reports a population density of 200 persons/ha for montane Arab villages based on the 1945 "Village Statistics" (1988:332, n. 37).

sites.[29] Second, as sites grow larger they tend to exhibit a greater diversity in terms of the use of space; less space is devoted to residential use and more is given over to "administrative, commercial, industrial, religious, and other public functions" (Sumner 1979:167).[30] And third, because of the tendency of urban centers towards modernization, there are fewer cities likely to reflect ancient conditions than there are towns or villages, which are thought to be more resistant to such change.[31]

1. Late Bronze Age Ugarit as Case Study

Fortunately, there are two urban sites along the Levantine coast, Ras Shamra/Ugarit and Acre, which offer valuable comparative evidence for reconstructing the population of the Philistine Pentapolis. Ugarit offers a unique opportunity for estimating ancient Near Eastern populations; not only has the site been widely excavated,[32] but there are also numerous administrative texts from its archives with a bearing on demography. The site is especially relevant for a population estimate of the

[29] Shiloh based his population study on the site of Tell Beit Mirsim, Stratum A of which 6.80 out of 30 dunams (22%) had been exposed (1980:28–29). Zorn did the same for Strata 3C–3A of Tell en-Nasbeh, where 67% of the 3.20-ha site had been excavated (1994:34–35). Notwithstanding, wide exposures of urban centers have been attained, as at the Late Bronze Age city of Ugarit (Garr 1987; see p. 96, n. 32 below) and the Roman Imperial Period port of Ostia (Packer 1967).

[30] The demographic-architectural survey of the modern city of Acre, as defined by the Crusader and Turkish Period walls, revealed that 11 of the city's 25 ha, or 44.10%, was taken up by public space (Prime Minister's Office, Israel, *Acre: The Old City Survey and Planning* [henceforth simply *Acre*] 1962). At Late Bronze Age Ugarit, 48.56% of a total excavated area of *ca*. 64,030 m^2 was devoted to public use (Garr 1987:35, Table 2).

[31] Certain "old" cities of the modern-day Levant (*e.g*., Jerusalem, Acre, Damascus, Aleppo, Tripoli, Irbil) may sufficiently reflect past conditions to be considered useful in projecting ancient urban populations (Broshi and Gophna 1984:42). These cities consistently report a population density coefficient of 400–500 persons per hectare. According to a 1917 British Expeditionary Force intelligence report (see Adams 1981:350, n. 1), the same holds true for the largest cities of the early twentieth century CE in Mesopotamia (*i.e.*, Baghdad, Najaf, Hilla, Karbala).

[32] The size of the site has been variously reported at 20 ha (Garr 1987:34, n. 8), 22.11 ha (Garczynski in Saadé 1979:95, n. 1), 22.50 ha (Liverani 1979:1319), and 25 ha (Schaeffer 1939:52). Of whichever size is accepted, *ca*. 6.40 ha (or 32% of the site using Garr's figure) has been excavated as of 1987.

Philistine Pentapolis, in that Ugarit is also located near the coast, dates to *ca*. 1200, and like Ashkelon and Tel Miqne, encompasses an area of about 20 ha. Thus far three scholars, each employing a slightly different methodology, have attempted to reconstruct the size of Ugarit's urban and/or rural population: Michael Heltzer (1976:103–12), Mario Liverani (1979:1319–20), and W. Randall Garr (1987).[33]

Heltzer, using only administrative texts, focused upon the rural population of the kingdom of Ugarit.[34] First, he identified 190 village names within the kingdom of Ugarit and assumed that between 180 and 200 villages were inhabited at any given time in the Late Bronze Age.[35] Next, based on conscription lists he calculated that there was an average of 18.50 men eligible for military service per village. Finally, using an overly generous, average nuclear family size of 6.50, Heltzer concluded that there were *ca*. 25,000 people who lived in the rural communities in the kingdom of Ugarit during the Late Bronze Age. Therefore:

18.50 (number of eligible men/village) × 6.50 (average family size) × 190 (villages) = 25,000 (rural)

Liverani used 150 as the number of villages in the kingdom of Ugarit and decided upon 150 as the average number of inhabitants per village, thereby yielding 22,500 people for the rural population. For the urban population he estimated that 50% of the

[33] Yon, who has also worked on questions concerning population and demography at Ugarit (1992a:113; 1992b), for the most part follows Liverani's population estimates.

[34] The kingdom of Ugarit as defined by Heltzer encompassed a *ca*. 60 x 60 km (or 3,600 km^2) strip of land along the coast of North Syria (1976:104). According to Astour (1995:55), the kingdom covered 5,425 km^2 at the time of its greatest extent, and only 2,200 km^2 minus the land grant by Šuppiluliuma I. In contrast, Philistia during "Stage 1" covered a *ca*. 40 x 25 km (or 1,000 km^2) area of the southern coastal plain (see p. 92, n. 25 above).

[35] Liverani (1976:1319), followed by Yon (1992a:113), feels that the number of villages inhabited concurrently was closer to 150.

site, or *ca*. 125,000 m^2, was devoted to residential use. Given that the average private house excavated at Ugarit covered between 80 and 100 m^2, this allows for at least 1,000 private houses in the city. At 6 to 8 persons per family, the urban population would have comprised 6,000 to 8,000 people. Therefore:

150 (average number of inhabitants/village) × 150 (villages) = 22,500 (rural)
1,000 (individual houses at Ugarit) × 6 to 8 (persons/family) = 6,000 to 8,000 (urban)
= 28,500 to 30,500 (total)

Garr applied a variety of population estimate coefficients to the architectural evidence from Ugarit and settled upon the one that produced a "numerically central" result (1987:40). Like Liverani, he noted that approximately 50% (*i.e*., 32,935 of 64,030 m^2 or 51.44%) of the excavated site was devoted to residential use. Both also drew attention to the fact that the excavations up to that point had been focused on the palace, thereby skewing the percentage of public versus residential space. Garr assumed that no further palace structures remain to be excavated and that if the "non-palace public" space percentage of 18.89% remained constant for the rest of the unexcavated site, then the overall percentage for residential space would rise to 72.47% (1987:35). He then determined the percentage of enclosed living space for each area of excavation and extrapolated the average of these percentages to those unexcavated areas of the site assumed to be residential. Using Naroll's formula of one person per 10 m^2 of living space (see p. 92 above), Garr arrived at a startling specific estimate of 7,637 inhabitants for the total population. Therefore:

7.637 ha (total enclosed living space) × 1,000 (1 person/10 m^2 of living space) = 7,637 (urban)

or

70, 637 m^2 (total enclosed living space) ÷ 10 (1 person/10 m^2 of living space) = 7,637 (urban)

The methodology employed in all three cases is to some degree flawed;[36] however, it is significant that the conclusions reached are similar: both Liverani and Garr would agree that the population of the city of Ugarit during the Late Bronze Age was between 6,000 and 8,000 inhabitants. Such a population range for a site of this size (*ca*. 22 ha), of this period (*ca*. 1200), and in this location (the coastal Levant), is not far from that which will be proposed for the Philistine Pentapolis sites (see Section C, pp. 99–102 below).

2. Crusader Period Acre as Case Study

The modern city of Acre is a valuable source of data for a population estimate of the Philistine Pentapolis for the following reasons: 1) the architectural layout (including many of the actual structures) of the modern city was largely established during the Crusader Period (Kesten 1973:73–91) and, therefore, Acre is a prime example of an old medieval city; 2) like the cities of the Philistine Pentapolis, Acre is situated in the Levantine coastal plain; 3) the size of the city of Acre (= *ca*. 25 ha; see *Acre* 1962:14), as defined by the Crusader Period walls, is comparable to the size of certain Pentapolis sites (*i.e*., Ashkelon, Tel Miqne); and 4) the city of Acre has been thoroughly surveyed with a

[36] Garr criticizes Heltzer for relying only on the epigraphic evidence and ignoring the archaeological data (even though there has been no excavation of rural sites in the kingdom of Ugarit), and he faults Liverani for not taking into account formulas for estimating ancient population (1987:31). Yon questions Garr's overly confident functional division of architectural space and points out his failure to address the diachronic nature of architecture and population at Ugarit (1992b:20–21).

focus on the earlier structural remains and the functional division of space (*Acre* 1962; Kesten 1973).

Despite the promising geographic and demographic similarities between modern Acre and the ancient cities of the Philistine Pentapolis, one must exercise caution when comparing the distant with the recent past. For example, in pre-industrial societies of the late nineteenth century CE, the ratio of the urban to the rural sectors of the population was one to eight; whereas "in present-day urban societies, while the ratio varies widely, it is not greater than one to three" (Biger and Grossman 1993:28).

Inside the old city walls of Acre — an area of approximately 25 ha — there were 7,000 inhabitants as of 1962,[37] the year in which the survey A. Kesten directed was published. These figures yield a population density coefficient of 280 persons/ha. It is interesting to note that 44.1% of the total area, or about 11 ha, was open public space and only 36.80%, or 10.56 ha, was "continuous residential" (*Acre* 1962:45). This low percentage of city space devoted to residential use supports Liverani's reconstruction of the functional division of space at Ugarit (*i.e.*, 50%) as opposed to Garr's (*i.e.*, 72.47%).

C. Conclusions

Based on the convergence of evidence from modern ethnographic research and from the work of anthropologists and archaeologists working on the problem of ancient population estimation, a conservative population density coefficient for the Philistine Pentapolis sites is 250 persons/ha. Although most ethnographic research and modern

[37] Approximately ten years later there were 8,000 inhabitants inside the old city walls and 35,000 overall in the city of Acre (Dichter 1973:6).

census-taking concern village populations (of which a wide range of population density has been observed; see Table 5 and p. 94 above), those regional studies of greatest relevance to the geographic setting of the Philistia consistently show higher density coefficients. According the Government of Palestine's 1938 "Village Statistics," the mean population density of villages in the southern coastal plain was 275 persons/ha, second only to the Shephelah at 281 persons/ha. The mean population density for all the villages of Palestine was 190 persons/ha (Biger and Grossman 1993:24–25, Table 3). In his archaeo-demographic survey of the "Land of Ephraim," Finkelstein used a wider range of Mandate Period "Village Statistics" — namely, from the years 1938, 1943, and 1945 — and noted a higher than average population density in the western villages (>20 persons/ha), perhaps attributable to "the economic advantages of the proximity to the coastal plain" (1988/89:133, Tables 2–3; 1990:50; 1997b:123).

The above case studies of Ugarit and Acre also yield population density coefficients that approximate the 250 persons/ha proposed for the Philistine Pentapolis.[38] At *ca*. 22 ha and with *ca*. 7,000 inhabitants, the population density coefficient for Late Bronze Age Ugarit is approximately 318 persons/ha.[39] Also, as noted on the previous

[38] Admittedly, the use of one palaeodemographic case study (*i.e*., Ugarit) to prove another (*i.e*., the Philistine Pentapolis) is tantamount to a circular argument; however, the variety of methods used for population estimation (*i.e*., number of houses × average family size [Liverani], enclosed living space ÷ 10 m^2 roofed area/person [Garr], 250 persons/ha [Philistine Pentapolis]) and the roughly similar figures they produced warranted the comparison.

[39] This figure represents the middle of the population density coefficient range possible for Ugarit based on the various suggestions for the site's size and population (see pp. 95–98, n. 32 above). At the high end is 400 persons/ha (8,000 inhabitants ÷ 20 ha) and at the low end is 240 persons/ha (6,000 inhabitants ÷ 25 ha). Schloen, who focused only on the population density of residential areas at Ugarit, arrived at the following coefficients: 345 persons/ha (at 10 m^2 roofed area/person) and 431 persons ha (at 8 m^2 roofed area/person) (2001:331; Table 17). He did not hazard an estimate of the population of the entire city or a standard population density coefficient because of the difficulties in calculating the percentage of residential space city-wide and in determining the original extent of the now eroded tell.

page, the population density coefficient for the old city of Acre until quite recently was 280 persons/ha.

The final piece of corroborative evidence comes from those scholars who have dealt specifically with the problem of population estimation in ancient Palestine. Magen Broshi, who, along with others, has studied the population and demography of the region for most of the ancient periods, bases his figure of 250 persons/ha on modern ethnographic fieldwork combined with archaeological survey and excavation data (Broshi and Gophna 1984:42; 1986:74; Broshi and Finkelstein 1992:48; Broshi 1993a:420).[40] This coefficient is in accordance with the results of many others working on the same subject (Marfoe 1980; Finkelstein 1996b:235; Stager 1985b:18, Table 3; 1995:344).[41]

Now that the combined, areal extent of the Philistine Pentapolis has been established at approximately 72 ha and a population density coefficient of *ca*. 250 persons/ha has been decided upon, it is time to propose an absolute figure for the population size of the initial Philistine settlement. By these estimates, the urban centers of Ashdod, Ashkelon, Tel Miqne, Gaza, and Gath would have contained approximately 18,000 inhabitants. Some allowance must be made for a rural component, but, as has been pointed out above (see p. 91), this sector of the population was extremely small.

[40] In their study of settlement patterns in the coastal plain from the Chalcolithic Period to the Middle Bronze Age, Gophna and Portugali arbitrarily assigned the following population density coefficients for the urban periods of the EB II and MB II (1988:15): 250 persons/ha for medium-sized, urban sites; 200 persons/ha for urban sites 7.00 – 15.00 ha in size (into which range fall Ashdod and Tell eṣ-Ṣafi); and 150 persons/ha for urban sites 15.00 ha and above in size (into which range fall Ashkelon and Tel Miqne). They assumed (as have others writing on this subject, see p. 94 above), that as cities grew larger, more space was devoted to public use.

[41] Cf., however, the coefficients proposed by Shiloh (1980:29) for Tell Beit Mirsim, Stratum A (*i.e*., 400–500 persons/ha) and by Zorn (1994:44) for Tell en-Nasbeh, Stratum 3 (*i.e*., 450 persons/ha). Both these sites, though, are significantly smaller — Tell Beit Mirsim = *ca*. 3 ha, Tell en-Nasbeh = 1.70 ha — and were more densely populated than the Pentapolis cities. Furthermore, Shiloh uses an unreasonably high "family coefficient" of 8 persons.

Until further data generated by the excavation of Early Iron I Philistine villages and farmsteads becomes available, it is best to conclude that the rural population numbered no more than a couple thousand. Therefore, a reasonable population estimate for "Stage 1" of the Philistine settlement is *ca*. 20,000 people. It now remains to be determined what percentage of this population was intrusive Philistine and what percentage was indigenous Canaanite.

Chapter 4. Size of the Intrusive Population at Pentapolis Sites

One's reconstruction of the historical events that led up to the Philistine settlement has much to do with questions concerning the size of the migrating population. If the Philistines assumed the role of foreign conquerors, destroying Canaanite cities and driving out their inhabitants, then it is likely that few Canaanites would have been a part of the subsequent Philistine settlement. If, however, Egypt forcibly settled the Philistines in southern coastal Canaan, or if the Philistines peacefully coexisted alongside the indigenous population, then the percentage of Canaanites at Pentapolis sites was probably greater. In either event, the nature of Egypt's role in Canaan during the Twentieth Dynasty (1196–1070) is of crucial importance: the stronger Egypt's presence was in the region, the less aggressively the Philistines and other Sea Peoples would have been able to settle the coastal plain. The first section of this chapter (see pp. 104–13) addresses, through the archaeological and textual data available, the pivotal question of the geographic and chronological extent of Egypt's hegemony in southern coastal Canaan.

The ability to detect ethnicity through archaeological remains is of equal importance for an estimation of the size of the intrusive Philistine population at Pentapolis sites. An examination of Philistine ethnicity can be particularly rewarding because of the richness of the excavation data, against which the more explicit textual evidence can be tested. Therefore, the second section is devoted to a discussion of the many problems that attend the archaeological detection of ethnicity in general (see pp. 116–18), and to those specific aspects of the Philistine material culture that seem indicative of Philistine ethnicity in particular (see pp. 118–22).

A. The Sociopolitical Context of the Philistine Settlement

1. Textual Evidence

The paradigm, first formulated by William Foxwell Albright (1932:58; 1975:511) and Albrecht Alt (1953),[1] whereby Egypt settled the Philistines in garrisons within Canaan, is based primarily on a brief notice from Ramesses III contained in Papyrus Harris I, 76.7–9:

> I slew the Denyen in their islands, while the Tjeker and the Philistines were made ashes. The Sherden and the Weshesh of the Sea were made nonexistent, captured all together and brought in captivity to Egypt like the sands of the shore. I settled them in strongholds, bound in my name. Their military classes were as numerous as hundred-thousands. I assigned portions for them all with clothing and provisions from the treasuries and granaries every year. (J.A. Wilson in ANET 262)

From this passage it was assumed that, following their unsuccessful attack on Egypt in the eighth year of Ramesses III's reign, the Philistines were garrisoned in southern Canaan, where, after having grown sufficiently strong and numerous, they were able to extricate themselves from Egyptian authority.[2] The discovery of numerous Egyptian inscriptions

[1] In general, Albright's and Alt's reconstruction of events has been followed by most scholars. See *inter alios* Noth (1960:36), Wright (1964:66–67), Malamat (1971:34), B. Mazar (1971:168–70), de Vaux (1978:493, 509), T. Dothan (1982a:3), Singer (1985:109), and Redford (1992:289).

[2] Regarding the historical reliability of Ramesses III's military accounts, Lesko (1980; 1992), following up on the work of Nims (1976), has suggested that Ramesses III's Year 5 (First Libyan War) and Year 8 (Sea Peoples War) campaigns were copied from Merneptah's now-lost mortuary temple. This argument is based on the striking similarities between Merneptah's and Ramesses III's Year 5 encounters with the Libyans, and on Ramesses III's well-established practice of borrowing — both in terms of subject matter and in actual building material — from the nearby Ramesseum (Brundage 1939; Nims 1976). Although there is no question that Ramesses III plagiarized the deeds of his predecessors (Faulkner 1975:243; Drenkhahn 1984:115; Cifola 1991:14, n. 17; Weinstein 1992:148; Lesko 1992:153), it is difficult to reconcile Lesko's theory with what is known about the Sea Peoples through archaeology: there is abundant evidence for their settlement during the reign of Ramesses III, but no sign of their presence 30 years earlier during the reign of Merneptah (Weinstein 1992:148).

bearing the names of Twentieth Dynasty pharaohs and officials found at sites in Canaan was then viewed as corroborating evidence for this reconstruction of events (Alt 1953:219; Singer 1985:109–10; 1988b:4–6).

There are, however, two fundamental problems with this proposed scenario: 1) Papyrus Harris I does not specify where the Philistines were garrisoned (Singer 1985:109); and 2) there is little or no evidence for an Egyptian presence at sites within Philistia during the Twentieth Dynasty (Weinstein 1992:145; Bietak 1993:299–300; for a detailed discussion, see Appendix A, pp. 232–39). Most scholars have situated the strongholds referred to in Papyrus Harris I in Canaan, based largely on the knowledge derived from the Hebrew Bible that the Philistines inhabited a part of this region during the period of the Judges (see Finkelstein 1995:227). Support for this Canaanite location came also from the discovery of anthropoid coffins at sites such as Beth Shean (Rowe 1930:39–40, Pls. 37–40; Oren 1973:132–50), Deir el-Balah (T. Dothan 1979; 1982a:252–60; 1982b), Tell el-Far'ah (S) (Petrie 1930:6–9, Pls. 19, 24; Starkey and Harding 1932:25, Pl. 53), and Lachish (Hennequin 1939; Tufnell 1953:219, Pl. 126; 1958:131–32, Pls. 45–46). Based on the similarity between the headdresses shown on the coffins and those worn by the Philistines as depicted in the reliefs at Medinet Habu, it was assumed that the former belonged to burials of Sea Peoples mercenaries stationed at Egyptian garrisons in Canaan (Hennequin 1939:974; Tufnell 1958:36; Wright 1964; James 1966:137; T. Dothan 1979:103 *inter alios*).[3] Serious

[3] Various Sea Peoples, in particular the Sherden, are frequently connected with the Egyptian army, usually in the capacity of mercenaries. During the reign of Ramesses II, the Sherden appear on the walls of the Ramesseum at Abydos among Egypt's foreign mercenaries at the Battle of Qadesh (ANEP 19:59). At the end of the Nineteenth Dynasty they appear in Papyrus Anastasi I as part of a large force of foreign auxiliary troops sent to the quarries at Wadi Hammâmât (Gardiner 1964:58.3–6; J.A. Wilson in ANET 476). In Papyrus Anastasi II the Sherden are described as former prisoners of war serving as special troops in the Egyptian army (Gardiner 1937:15.1–2, 20.2). The Sherden appear often during the reign of Ramesses III: in Papyrus Harris I they are described as resting in their towns while "their bows and their weapons reposed in their magazines" (ARE IV §410); the Sherden frequently appear as Egyptian mercenaries, and less often as Egyptian enemies, in

doubt, however, was cast on this theory by the discovery of anthropoid coffins at Deir el-Balah, an Egyptian outpost in southern coastal Canaan, which pre-date the large-scale settlement of Sea Peoples in the region by at least a century (Stager 1995:341–42). Moreover, burial in anthropoid clay coffins was a common practice among Egyptians, both home and abroad; therefore, it should come as no surprise that these coffins have been found so far only at Egyptian garrison sites.

Although the evidence certainly shows that Egypt had a presence in Canaan during the Twentieth Dynasty, and that the Sea Peoples did serve in the Egyptian military, the textual evidence as it relates to the garrisoning of prisoners of war favors a location *within* Egypt for these strongholds (Wood 1991:48; Cifola 1994:6; Finkelstein 1995:227). First is the text from the Great Temple at Abu Simbel, wherein Ramesses II reports having settled "the Libyans on the (Delta) *gezirehs*, filling the military settlements of his building with the captures of his valiant sword" (KRI II/4, 206:14–16). Elsewhere in this text further displacements of conquered peoples are described:

> . . . bringing the land of Nubia to the land of the north, the Asiatics (*''mw*) to the land of Nubia. He has placed the Shasu (*Sh'-s'*) into the land of --, he has settled the Tehenu on the heights, filling the strongholds, which he built, with the captivity of his mighty sword . . . (ARE III §457)

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the wars against the Libyans and Sea Peoples, as depicted in the Medinet Habu reliefs (Nelson 1930:Pls. 30–42; 1932:Pls. 62, 69, 94). In the Late Ramesside Period the Sherden appear in the following texts: in Papyrus Amiens they are associated with the "Royal Scribes of the Army" and granted usufructory rights over land belonging to the Karnak Temple (Gardiner 1968:7.12–13); in the Wilbour Papyrus, 70 Sherden receive military land grants (Gardiner 1948:80); on a stela from Ehnasya there is a reference to a Sherden fortress (Petrie 1904:22, Pl. 27:1). For the possibility of Sherden mercenaries stationed at Byblos during the Amarna Period (EA 81:16, 122:35, 123:15), see Helck 1976, p. 8 (*contra* Moran, who does not feel that the "shirdanu" of these texts should be identified with the later Sherden [1992:393]). Sandars has suggested that the small disc between the horns on Sherden helmets served as an Egyptian regimental insignium (1986:106). The Philistines, distinguishable by their distinctive feathered headdresses, appear in the reliefs at Medinet Habu among Egypt's foreign mercenaries in the wars against the Libyans (Nelson 1930:Pls. 17, 19, 24; Schulman 1964:131).

In his Rhetorical Stela from Deir el-Medineh, Ramesses III, after having defeated the Libyans and Meshwesh, "caused them to cross the Nile streams, (they being) brought to Egypt and being made (to settle) into strongholds by the victorious king" (KRI V/2, 91:5–7).[4]

In Papyrus Harris I one sees a more advanced stage of the settlement within Egypt of prisoners of war who have become mercenaries:

> I made the infantry and chariotry to dwell (at home) in my time; the Sherden and Kehek were in their towns, lying the length of their backs; they had no fear, (for) there was no enemy from Kush, (nor) foe from Syria. Their bows and weapons reposed in their magazines, while they were satisfied and drunk with joy. (ARE IV §410)

The allotment of military land grants to 70 Sherden, as recorded in the Wilbour Papyrus, is a further indication of this people's integration into Egyptian society (Gardiner 1948:80; see also Kitchen 1990:21; Cifola 1994:6). Also, the "fortress of the Shardanu," mentioned in a stela from the Nineteenth Dynasty temple at Ehnasya, is most likely to have been located in Egypt (Petrie 1904:22, Pl. 27:1).

Finally, in the passage at issue, Papyrus Harris I, 76.7–9, the juxtaposition of the phrases "brought in captivity to Egypt" and "settled them in strongholds" supports the

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[4] The same event from the Libyan Wars is recorded in Papyrus Harris I as follows:

> I carried away those whom my sword spared, as numerous captives, pinioned like birds before my horses, their wives and children by the ten-thousand, their cattle in numbers like hundred-thousands. I settled their leaders in strongholds in my name. I gave to them captains of archers, and chief men of the tribes, branded and made into slaves, impressed with my name; their wives and their children were made likewise. I led their cattle into the house of Amon; they were made for him into herds forever. (ARE IV §405; see also Edgerton and Wilson 1936:Pl. 28:40)

Similar language to that used in the Rhetorical Stela can be found in another text from the reign of Ramesses III dealing with the disposition of conquered foes: "He causes them to cross the river, being brought to Egypt. They are placed (lit. made) in strongholds of the king - - - (broken) - - - They are made shield-bearers, charioteers, and retainers who bear the fan while following the king" (L.D., III, 213c; translation taken from Schulman 1964:123).

conclusion that the Philistines and other vanquished Sea Peoples were placed in garrisons inside of Egypt (Wood 1991:46–48).[5]

Taken as a whole, those texts dealing with the forced settlement of foreign captives strongly suggest that these "strongholds" be located within Egypt. References to bringing captured enemies across the Nile into Egypt (*e.g.*, Rhetorical Stela of Ramesses III), and texts documenting the Sherden's well-established settlement in Egypt (*e.g.*, Papyrus Harris I, Wilbour Papyrus) provide glimpses onto the vaguely described location of the Sea Peoples' "strongholds." In the absence of any evidence for the settlement of conquered peoples in Canaan, it is best to leave the Philistines where most vanquished foes were settled — namely, in Egypt.

2. Archaeological Data

a. Distribution of Egyptian Finds (Map 12)

Excavations at sites in Israel have yielded increasingly more evidence for a significant Egyptian presence in Canaan during the Twentieth Dynasty, particularly for the reign of Ramesses III.[6] For some scholars these finds corroborate the Albright/Alt paradigm whereby the Philistines were settled in southern coastal Canaan as part of Egypt's reinvigorated Asiatic empire (Singer 1985:109–10; 1988b:4–6). For others the finds are

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[5] Singer understands Egypt in this context to mean the Egyptian empire, encompassing her provinces in Asia and, therefore, Canaan (1992:45, n. 4).

[6] Much has been written about the extent and nature of the Egyptian presence in Canaan in the twelfth century. The more recent and thorough studies dealing with this subject include the following: Weinstein 1981; 1992; Uehlinger 1988; Singer 1988b; 1994:290–312; and Bietak 1991; 1993.

viewed as grounds for lowering the date of the Philistine settlement until after the withdrawal of Egypt from the region *ca*. 1130 (for a lengthy discussion and rebuttal of this proposed chronological revision, see Appendix A). What is often overlooked, however, is the almost complete absence of evidence for an Egyptian presence during the Twentieth Dynasty at sites *within Philistia* (cf., however, Weinstein 1992:145; Bietak 1993:299–300; Stager 1995:344; 1998:163).

With rare exception (see Appendix A, p. 236), most Twentieth Dynasty Egyptian finds in Canaan come from sites in the northern Negev, inner Shephelah, or along the interior valleys (see especially Weinstein 1981:20; Bietak 1993:figs. 2–3). Hieratic ostraca found at Lachish (Gilula 1976; Goldwasser 1982)[7] and Tel Sera‘ (Groll 1973; Goldwasser 1984)[8] that date to Ramesses III's reign record large quantities of grain, (*i.e*., 33,500 and 145,000 liters respectively) which most likely correspond to harvest taxes donated to an Egyptian temple in the region, possibly at Gaza (Goldwasser 1984:84–85; Uehlinger 1988:14).

At Megiddo an ivory pen case belonging to a certain Thutmose and bearing the cartouche of Ramesses III was found sealed in the destruction of the Stratum VIIA

[7] The relevant Lachish hieratic inscriptions came from a fill (Locus 1055) composed of Late Bronze Age debris that was used as a foundation level for Palace A of Stratum V (= *ca*. 1000–900; Tufnell 1953:112, 114, Pl. 115). On palaeographic grounds these inscriptions and those from Tel Sera‘ have been dated to the Twentieth Dynasty (Goldwasser 1982:137–38). Attribution to the reign of Ramesses III is strongly suggested by the discovery of a bronze plaque door fitting bearing the cartouche of this pharaoh, which was found sealed in the destruction level of Stratum VI (Ussishkin 1983:123, fig. 13, Pls. 29:3, 30:1–3; Giveon 1983). For the other hieratic ostraca from Lachish that date generally to the Ramesside era, see Černy in Tufnell 1958, pp. 132–33, Pls. 44:3–6, 47:1–4; Goldwasser 1991a.

[8] The Tel Sera‘ inscriptions were found in the Stratum IX (= early twelfth century) “governor's residence” (= Building 906; Oren 1993b:1331). Additional hieratic ostraca fragments, which are also administrative in nature, have been found in the same region: at Tel Haror one was found in a late thirteenth-century context (= Stratum K3; Goldwasser 1991b; Oren 1993a:582); at Tell el-Far‘ah (S) two fragments — possibly from the same inscription — found during Petrie's excavations were recently published (Goldwasser and Wimmer 1999); and one was found at Deir el-Balah (T. Dothan 1982b:745, photo lower right; Wimmer in press). The hieratic inscription from Beth Shean is literary-religious in content (Wimmer 1993; 1994).

"Treasury" (Loud 1939:no. 377, Pl. 62).[9] The cartouche in the trough reads, "for the *ka* of the Royal Envoy to every foreign country, the overseer of the stable 'Mighty is Amon' of the Residence" (J.A. Wilson 1939:11). The crossbar contains, "For the *ka* of the *hry pd.t*(?) . . . Thutmose," where *hry pd.t* may be read as "troop commander" or "captain of the troops" (ibid; Singer 1988/89:105–6; for this title in general, see Schulman 1964:54–56). Among the numerous Egyptian architectural fragments found at Beth Shean in Lower Level VI[10] (James 1966:4–22) there is an inscribed door lintel with a titulary closely related to that found on the Megiddo pen case (8–9, cat. no. E–1. 25–10–448). It reads in part,

> . . . the Overseer of Troops, Commander of Troops of the Lord of the Two Lands, Great Steward, Ramesses Weser-Khepesh, son of the Fanbearer on the Right of the King, Captain of the Tr[oops, Overseer of Foreign Countries, Thutmose].[11] (Ward 1966:172–73, figs. 96.1, 97.1)

Thutmose, father of Ramesses Weser-Khepesh, is almost certainly the same Thutmose known from the Megiddo inscription (Ward 1966:175–76; Singer 1988/89:103–4). In any event, it is clear that there was a high-ranking Egyptian official serving at Beth Shean,[12] and

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[9] Loud dated the destruction of Stratum VII to *ca*. 1150 (1939:9–10), which has been followed in general terms by most scholars (*e.g*., T. Dothan 1982a:76; A. Mazar 1985b:97; G. Davies 1986:40; Gonen 1987:96; Singer 1988/89:110; Yadin 1993:1013).

[10] This level corresponds to Stratum S–3 of the recent excavations led by A. Mazar (1993a; 1995; 1998) and Stratum 4 of the Yadin-Geva excavations (1986). Level VI is dated to the period of the Twentieth Dynasty, or the twelfth century until the end of the Egyptian administration in Canaan *ca*. 1130 (A. Mazar 1993a:216; see also Yannai 1996).

[11] The reading of *hry p*[*d.t*] (= "Captain of Troops") and the name Thutmose is based on an analogous reading of another inscribed lintel from Beth Shean with the same titulary intact (Ward 1966:172, cat. no. D–2. 27–9–135, figs. 94.3, 95.3).

[12] The evidence for an official Egyptian presence at Beth Shean is very strong. A large number of limestone architectural fragments with Egyptian motifs and/or inscriptions were found in Stratum VI (James 1966:4–8, figs. 88–99; Ward 1966:161–79; A. Mazar 1993a:215–16). Many of these came from Egyptian-style buildings (*i.e*., 1500 and 1700), often termed "governors' residences" (James 1966:8–22; Oren 1984:49). Also, a great deal of Egyptian pottery has been excavated (James 1966:27–28, figs. 49.6, 9, 12, 21; 50.2; 51.6, 10; 52.14–15, 18; 53.23; 54.1; 55.1–3; 56.17; 57.2, 4–5; 123.4; Yadin and Geva 1986:84–86, fig. 35; A. Mazar 1993a:214; 1997b:157, fig. 6), much of it locally made (Cohen-Weinberger 1998). Finally, there are numerous small finds of Egyptian origin or influence, which include scarabs (James 1966:fig. 100.5–15; A. Mazar 1997b:157), alabaster vessels (James 1966:figs. 50.1, 54.9, 12, 57.15–16, 119.10; Yadin and Geva 1986:86–87, figs. 1–2; Photos 87–88), bullae with seal impressions (A. Mazar 1997b:157), and an ostracon (A. Mazar 1993a:215).

possibly also Megiddo,[13] during the Twentieth Dynasty.[14]

The evidence for a twelfth-century Egyptian presence at most other Canaanite sites consists primarily of scarabs,[15] which reveal more about the dating of sites — under the best of circumstances — than they do about the inhabitants. Scarabs bearing the name of Ramesses III have been found at the following sites in Iron I contexts: three at Tell el-Far'ah (S) (Starkey and Harding 1932:24, 26 nos. 127–28, 374; Pls. 52, 57; Rowe 1936:196, no. 832); 26 at Tell Jemmeh, of which many are without contexts (Petrie 1928:10); one at Lachish (Tufnell 1953:46, 51; 1958:126, no. 388); two at 'Ain Shems/Beth Shemesh (Grant 1929:203, no. 729; 1932:88, no. 42, Pl. 51); and one at Ashdod (Dothan and Porath 1993:71; Brandl 1993:138–39, no. 13; see also Appendix A, p. 231).[16] Scarabs of Ramesses IV have been at the following sites: Tell el-Far'ah (S) (Starkey and Harding 1932:24–26, Pls. 52:129, 55:297); Gezer (from a Persian Period context; Macalister 1912a:296, fig. 157.18);

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[13] The evidence for an Egyptian presence at Megiddo in Stratum VIIA, although less compelling than at Beth Shean Stratum VI, is still considerable (Singer 1988/89). In the same ivory hoard as the pen case were four inscribed plaques belonging to *Krkr*, songstress to the god Ptah, called here "the Great-One of Ashkelon" (J.A. Wilson 1939:12–13, nos. 379–82, Pl. 63; see also Appendix A, p. 233). A bronze base of a statue of Ramesses VI was found deliberately buried beneath a Stratum VIIB wall (Loud 1948:135, n. 1; Breasted 1948). Many argue that the statue base belongs to Stratum VIIA (Albright 1936:28; A. Mazar 1985b:97; Singer 1988/89:107; Ussishkin 1995:259); however, others feel that it was brought to the site at a later date (Helck 1971:234; Kitchen 1984:124; Weinstein 1992:147). There is also a significant amount of Egyptian pottery at Megiddo in Stratum VII (Shipton 1939:9, nos. 24–26; Loud 1948:Pls. 65:1–3, 68:11).

[14] Higginbotham argues that Egypt administered Canaan through the appointment of Egyptian circuit officials rather than resident governors (1996). Furthermore, the author proposes that most Egyptian or Egyptianizing material culture in Canaan was a result of emulation by local élites and not, contrary to the traditional view, brought to or produced in Canaan by Egyptians living and serving abroad. Unfortunately, this élite emulation model does not adequately explain the presence of large quantities of locally produced, Egyptian plain wares at sites like Beth Shan (see n. 12 above). Such utilitarian items could not have conferred prestige upon or enhanced the authority of local Canaanite rulers.

[15] A fragment of a faience vessel bearing the cartouche of Ramesses III — originally identified as Ramesses II (Macalister 1912b:235, fig. 388) — was found at Gezer (Porter and Moss 1962:374). For the stone fragment bearing the name of Ramesses IV found on the surface of Tel Delhamiya in the Jordan Valley, see Leclant 1982 and Bietak 1993, p. 293, n. 21. I omit from the discussion Timna', where numerous items inscribed with the names of Late Ramesside pharaohs have been found (for references, see Weinstein 1992:146). The site is far enough removed that an Egyptian presence there during the Twentieth Dynasty would not have seriously affected contemporary developments in Philistia.

[16] A scarab of Ramesses III was found at Megiddo in Stratum VIIA (Loud 1948:154, Pl. 152:195). Also, unpublished scarabs of Ramesses III have been found at Beth Shean and Ahwat (Baruch Brandl, pers. comm.).

perhaps Tell eṣ-Ṣafi (Bliss and Macalister 1902:Pl. 83:24S; for its identification, see Uehlinger 1988:21, n. 63), Deir el-Balah (Giveon 1977:67); and Tell er-Ruqeish (in an Iron II grave; see Culican 1973:fig. 14.1; see also Uehlinger 1988:21, n. 63).[17] Inscriptions from even later Ramesside kings come from these sites: Deir el-Balah, where a scarab of Ramesses VI was reportedly found (Giveon 1977:66–67, fig. 1.2, Pl. 3:2); Tell el-Far'ah (S), where scarabs of Ramesses VIII (Starkey and Harding 1932:26) and Ramesses X were excavated (Petrie 1930:7, Pl. 22:202);[18] Gezer, where a faience fragment with the cartouche of Ramesses IX came to light (Macalister 1912b:250; 1912c:Pl. 195:74); and Tel Masos, where a possible scarab of Ramesses X was found (Brandl 1982; Uehlinger 1988:24), which has also been assigned to the Nineteenth Dynasty (Giveon 1974; Giveon and Kempinski 1983:102–5, Pls. 107:C, 170:2).

There is, then, considerable evidence for an Egyptian administrative presence in Canaan during the Twentieth Dynasty, at least for the reign of Ramesses III and possibly later (Oren 1984:56; Singer 1988b:5–6; Uehlinger 1988:12–14).[19] There is extremely little evidence, however, for an Egyptian presence of any kind at Philistine Pentapolis sites at the time of their settlement during this same period (Weinstein 1992:145; Bietak 1993:299–300; Stager 1995:344).[20] If Egypt had played an active role in the settlement of Sea Peoples in

[17] Uehlinger (1988:21, n. 63 *pace* Giveon 1988:48) doubts the attribution to Ramesses IV of those scarabs found at Tell ez-Zakariya and Aphek (Giveon 1978b:15–16, fig. 16a–b; Kochavi 1981:81). For the suggestion that a scarab originally published as belonging to Ramesses II (Tufnell 1958:126, Pl. 39.380) should instead be assigned to the reign of Ramesses IV, see Krauss 1994, p. 125.

[18] Originally attributed to Ramesses XI; however, Brandl (1982:383) and Uehlinger (1988:24–25; followed by Bietak 1993:297) have argued convincingly in favor of Ramesses X.

[19] Weinstein envisions Egypt's presence in Canaan at this time more along the lines of a military occupation (1981:17–20; 1992:142). For the contrasting view, whereby the presence of Egyptian material culture in Canaan is seen more as an outgrowth of "élite emulation" in a core-periphery framework, see p. 111, n. 14 above.

[20] For a discussion of the scarab of Ramesses III found at Ashdod in Stratum XII, the construction of a temple to Amon at Gaza(?) as recorded in Papyrus Harris I, and the probable thirteenth-century temple of Ptah at Ashkelon referred to on an inscribed ivory from Megiddo, see Appendix A, pp. 236–38. The Ramesses IV

southern coastal Canaan, then one would expect to find some evidence of Egyptian involvement at these sites.[21] Conversely, it is along the periphery of Stage 1 Philistia that one finds sites (*i.e.*, Tel Mor,[22] Lachish, Tel Sera‘, Tell el-Far‘ah (S), Deir el-Balah) with a clear Egyptian presence (Oren 1984; Stager 1995:342–44). These sites, often termed garrisons or forts, were a major part of Egypt's containment policy formulated in response to the incursion of Sea Peoples into the region during the early part of Ramesses III's reign (Stager 1995:344, fig. 2).[23] From the distribution of Philistine sites versus Egyptian outposts within Canaanite towns, one may infer the hostile nature of the Philistines' encounter with Egypt and subsequent settlement in southern coastal Canaan. There is, however, a more explicit source of information upon which an historical reconstruction may be inferred: the massive destruction levels separating the Canaanite from Philistine settlements at Pentapolis sites (*i.e.*, Ashdod, Tel Miqne). To these destruction levels we now turn.

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scarab from Tell eṣ-Ṣafi (= Philistine Gath?) is of uncertain attribution (Uehlinger 1988:21, n. 63) and comes from an unspecified context (Bliss and Macalister 1902:153, Pl. 83:24S).

[21] In point of contrast it is worthwhile to examine the Egyptian fortresses and temple-towns in Nubia during the Middle and New Kingdoms. Although they do not constitute exact parallels to the "Sea Peoples' strongholds," as envisioned by some based on Papyrus Harris I, these settlements do represent clear examples of an Egyptian presence in a foreign land. Compared to the purely Egyptian character of these Nubian outposts, which encompassed all aspects of the material culture (see *inter alios* Trigger 1965:94ff.; Kemp 1978:21; Higginbotham 1996:157), the Philistine Pentapolis sites fall far short on all counts for consideration as Egyptian, or Egyptian-influenced, settlements.

[22] Recent re-examination of the pottery from Tel Mor indicates that the Egyptian presence was even stronger than previously suspected: Egyptian forms and fabrics dominate the ceramic assemblage for most of the twelfth century, whereas no PMP and very little PBP was collected during Moshe Dothan's excavation of the site (Barako in press).

[23] Sherratt views the absence of Myc IIIC:1b outside of Philistia as an indication of the "politically motivated economic 'quarantine'" imposed by Egypt upon Philistia, whose inhabitants were part of an eastern Mediterranean-wide, decentralized economy of trade that undermined Egyptian interests in the area (1998:306, n. 30). According to this theory, the presence of large amounts of Philistine pottery at Pentapolis sites represents not an influx of an ethnically distinct population, but rather the infiltration of a socioeconomic class. If it was only a matter of the introduction of a new type of pottery, then it would be reasonable to envision the Philistine settlement in this way; however, there is a wide range of unprecedented material culture traits that accompany this pottery (see Chapter 1, pp. 13–31), which have little or nothing to do with trade (Barako 2000:522–24). Also, the patently hostile incursion of the Philistines — exemplified by the destruction levels that precede their settlement at Pentapolis sites (see pp. 114–15 below) — is more suggestive of a military than a mercantile action (for further discussion, see Chapter 7, p. 199–200).

b. Destruction Levels

At Tel Miqne the small, 2.50-ha, LB city (= Stratum VIII) ended in a "massive destruction," over which the much larger 20.00-ha Philistine city (= Stratum VII) was built (T. Dothan 1997:99; Killebrew 1996a:3).[24] At Ashdod the clearest sequence comes from Area G, where the LB city (= Stratum XIV)[25] ended in an "intense destruction" followed by a settlement of a "different character" marked by the appearance of significant amounts of Philistine pottery (Dothan and Porath 1993:53, Plan 8). In Area B, a thick destruction level covered local Stratum 1. Based on the appearance of "transitional forms between the Late Bronze and early Iron I Ages" in Stratum 1, the destruction was dated to the end of the thirteenth century and attributed to either the Egyptians or the Israelites (Dothan and Freedman 1967:81). The succeeding layers seem to have been excavated and discussed as a part of Area A (M. Dothan 1971:25).

In a limited exposure in Area A, an 85.00-cm thick, ashy destruction layer covered a floor from the end of the LB (= Stratum XIV). Above the level of this destruction layer there was in places an 80.00-cm thick deposit of debris that contained both LB and Philistine pottery (possibly intrusive), and above this was an ephemeral layer of the first Sea Peoples settlement. In Area H, during the initial Philistine settlement (= local Stratum 5, general Stratum XII), a large building was constructed partially over walls from the previous stratum

[24] In the initial phase of Stratum VII, a 5.00-m wide mudbrick city wall (= W6004) was constructed that has thus far appeared in all fields excavated around the perimeter of the tell (for Field I, see Dothan and Gitin 1982:10–13; Killebrew 1984:5–9; 1996a:16; for Field III, see Gittlen 1984:5; for Field X, see Bierling 1998:13–14). Along the southern side of the tell in Field III, an 11.00-m section of the same wall (= W16009–28002) was dated to Stratum VI/late twelfth century. In the northwest corner of the tell, in Field X, another 11.00-m long, 6.00-m wide stretch was found (= W90006) in Stratum VIIB built directly on top of the MB rampart.

[25] The LB, pre-Philistine settlement, local strata (= general Stratum XIV) at Ashdod are as follows (with excavation area in parentheses): 14 (Area A), 1 (Area B), and 7 (Area H).

and partially over an 80.00-cm thick layer of ash (M. Dothan 1971:158–59, Plan 20). Unfortunately, the transitional LB/EI Age strata at Ashkelon have not yet been sufficiently excavated; however, this will soon change as work proceeds in Grid 38, where there is currently a wide exposure of the twelfth-century Philistine city.[26]

The existence of destruction levels at two excavated sites, (*i.e.*, Tel Miqne, Ashdod) followed by the appearance of the same, distinctly new, material culture (see Chapter 1), does not necessarily imply foreign conquest. But considered along with the textual and archaeological evidence from another site, Ras Shamra/Ugarit, the argument for a hostile invasion, and one made by sea, is rendered more convincing. The exchange of letters between the king of Cyprus (= Alašiya) and the last king of Ugarit, Ammurapi (see Chapter 2, p. 50), clearly shows that Levantine coastal sites were vulnerable to seaborne raids. The thick and extensive destruction level, in which numerous arrowheads were found, that covered the site of Ras Shamra speaks loudly (and grimly) in favor of enemy attack.

As at Philistine Pentapolis sites, the pottery from the pre-destruction stratum at Ras Shamra yielded Cypriote and Mycenaean imports (cf. Dothan and Porath 1993:48–49; Stager 1995:335; Killebrew 1998a:381–83), but contrary to the situation in Philistia, Ras Shamra/Ugarit was not reinhabited.[27] At the nearby royal residence of Ras Ibn Hani, however, a group of settlers who produced large quantities of local Myc IIIC:1b reoccupied

[26] During the excavations of Ashkelon by Garstang and Phythian-Adams in the 1920's, a thick layer of black ash was found separating the Late Bronze (Stage V) from the Iron Age (Stage VI) strata (Phythian-Adams 1923c:63–64, figs. 3–4). Mackenzie observed a similar sequence in the same part of the tell a decade earlier and tentatively associated the destruction and subsequent settlement with the arrival of the Philistines (1913:21, Pl. 2). This area corresponds to the current excavations in Grids 50/57 where a similar destruction level has not yet been found. The excavations in Grid 38, approximately 225.00 m NE of Grids 50/57, will determine whether or not this destruction layer was local or covered the entire tell.

[27] Traces of a squatter's settlement immediately following the destruction were found, as well as a single Persian Period installation (Yon 1992a:118–19; 1992b:32, n. 2).

the site (Bounni, Lagarce, and Saliby 1978:280–82; Bounni *et al*. 1979:245–57; Lagarce and Lagarce 1988:143; Bounni, Lagarce, and Lagarce 1998).[28]

There is, then, good reason to suppose that the Philistines entered southern coastal Canaan by hostile means. To summarize the case: on the one hand, as demonstrated above (see pp. 104–8), the old, text-based paradigm, whereby the Egyptians garrisoned their vanquished foes, the Philistines, does not hold up upon closer inspection. On the other hand, excavations at both Philistine and non-Philistine sites show, first, that there is virtually no evidence for an Egyptian presence at Pentapolis sites during the Twentieth Dynasty (see pp. 104–9 above); and, second, that thick destruction levels at Tel Miqne and Ashdod indicate the advent of violent enemies and not subdued prisoners of war (see pp. 110–11 above). Texts and archaeology, thus, combine to suggest that the Philistines settled in southern coastal Canaan not only hostilely, but under their own steam, indeed, in opposition to Egypt.

B. The Archaeology of Philistine Ethnicity

The urge to associate material culture assemblages with ethnic groups (or "pots" with "people") is strong in archaeology and especially so in the archaeology of the ancient Near East.[29] The "trait-list" approach, whereby distinctive material culture attributes correlative in time and space are ascribed to the activity of an ethnically-defined group, provided the

[28] In much less dramatic fashion, the same sequence was observed at Ras Bassit on the northern border of the kingdom of Ugarit (Courbin 1983a; 1983b; 1990:503–5).

[29] The scholarship on the archaeology of ethnicity is massive and well beyond the scope of this dissertation. The most recent and thorough treatment of ethnicity and archaeology (with further references) is S. Jones 1997. Notable studies on the subject of ancient Near Eastern ethnicity include: Kramer 1977; Kamp and Yoffee 1980; London 1989; and Dolukhanov 1994 (especially for the prehistoric periods). To date, only two articles have dealt expressly with the question of Philistine ethnicity (Bunimovitz 1990; Bunimovitz and Yasur-Landau 1996); however, the subject is often broached in passing as part of a wider consideration of ethnicity during the Iron I Period (read "Israelites"; see Dever 1993a; Finkelstein 1997a *inter alios*).

theoretical foundation for culture-history, the dominant paradigm of archaeological interpretation for most of this century (see Chapter 7, pp. 189–90). This approach has guided most archaeologists concerned with the Philistines, beginning with the first discovery of Philistine pottery (see Chapter 2, p. 38) until the present day. Elsewhere, however, the straightforward equation of material culture with ethnic group came under the heavy fire of processual theory. Anthropological archaeologists, led by Lewis R. Binford (1962; 1965) in America and David L. Clarke (1978) and Colin Renfrew in Europe (1972; 1973), emphasized the environmental, technological, socioeconomic, and symbolic factors that contribute to the generation of material culture. The role of cultural factors, such as membership in an ethnic group, was minimized or rejected because of the lack of a corresponding explicatory structure or "process." Grossly summarized, in their synthesis and interpretation of data, culture-historians endeavored to describe the "who," "what," and "when," whereas anthropological archaeologists were more concerned with an explanation of the "how" and "why."

Moreover, ethnography has revealed many potential shortcomings in the trait-list approach to ethnicity.[30] The following list highlights only some of the difficulties raised by modern ethnographic studies that relate to the correlation of material culture assemblages with ethnic groups:

- Ethnic markers may not be visible in the archaeological record.

[30] The applicability of ethnographic study to the reconstruction of ancient society is also problematic (in general, see Stiles 1977). For instance, ethnographies, because they are synchronic by nature, lack the time-depth implicit in archaeological cultures (Kalentzidou 2000:70; cf., however, n. 29 below). A problem specific to the Philistines (and many ethnoarchaeological case studies) is the fact that most ethnographic fieldwork concerns so-called "primitive" societies (cf., however, Peacock [1982:38–43, 99–103] and Kramer [1997] for ethnoarchaeological approachs to pottery production in urban contexts), whereas the Pentapolis sites were clearly complex, urban centers (see Chapter 3, p. 91).

- Ethnic markers may change over time.[31]

- Ethnic markers may remain the same while their meanings change.

- Differences in material culture deemed symbolically significant by the observer may be insignificant to the bearers of that culture (Barth 1969:14).

- Two distinct ethnic, or tribal, groups may bear — sometimes to a large extent — the same material culture, or, members of the same ethnic group may bear different material cultures (Moerman 1965:1218–21 with further references; 1968:156–60; see also Hodder 1979:447; 1982:58, 62–63, 68 *et passim*).

- Permeable ethnic group boundaries allow personnel to flow from one group to another (Barth 1969:9) — often for reasons of economic or social advancement (Moerman 1965:1222; Patterson 1975) — and to adopt quickly the material culture of the host society (Hodder 1982:24).

- Insofar as ethnic group affiliation is a self-conscious ascription (Barth 1969:10; Shennan 1989:14), it is generally not amenable to detection by archaeological means (Arutjunov and Chazanov 1981).[32]

In the wake of ethnography's sobering discoveries and the concomitant processual and post-processual reevaluations, ethnic identity was characterized as "dynamic," "fluid" (R. Cohen 1978:35), "situational" (S. Jones 1997:14), "relational," and "negotiable." The old, static conceptualization of ethnicity, which could be correlated with an equally fixed material culture, was rendered theoretically insupportable (S. Jones 1997:59). To make matters worse, it has been reported that "at present there is no reliable method for the archaeological identification of ethnic groups in plural societies" (Kamp and Yoffee 1980:89), a truly dire state of affairs, if the Philistines were, in fact, an ethnic minority absorbed by a Canaanite majority.

[31] This temporal effect can be lessened by focusing on the material culture of the initial Philistine settlement at Pentapolis sites as has been the implicit methodology pursued here (see Chapters 1 and 3; see also Bunimovitz and Yasur-Landau 1996:89).

[32] This tension is often formulated as a "subjective," or emic, versus an "objective," or etic, perspective of ethnicity (S. Jones 1997:56–57).

With the above cautionary words in mind, what, if anything, can be said about the ethnicity of the Philistines? Fortunately, there are certain aspects of the material culture excavated at Pentapolis sites that permit the following statement: there was an influx of people — irrespective of one's definition of ethnicity — with strong Aegean and/or Cypriote cultural affinities, who settled in southern coastal Canaan during the first half of the twelfth century. Of these diagnostic cultural traits, the most important are those associated with household activities (especially those carried out by women), such as those reflected in kitchen wares and loomweights (see Chapter 1, pp. 28–31), which are less likely to have been introduced through trade. Moreover, because home manufacturing techniques tend to be culturally conservative — that is, more resistant to stylistic change — they can serve as enduring ethnic markers. These techniques are often transmitted from one generation to the next and, as such, the resultant archaeological correlates may be viewed as a reflection of ethnically-circumscribed behavior (Kamp and Yoffee 1980:96).

In ethnographic studies, styles of dress — which include clothing, hairstyles (or facial hairstyles), and jewelry — stand out as persistent markers of ethnicity (*e.g.*, Hodder 1979:447; 1982:18–22; Washburn 1990). This trait was not discussed in Chapter 1 because, unfortunately, items of dress do not preserve well in the archaeological record.[33] Fortunately, though, information about Philistine dress does survive in ancient depictions and text. The reliefs from Medinet Habu show Philistine warriors as clean-shaven and, more importantly, wearing a distinctive feathered headdress (see Ills. 1–2).[34] A close parallel

[33] Jewelry is the exception. According to Golani, the Iron Age I jewelry from Tel Miqne shows more Egyptian than Aegean influences (1996:156).

[34] For the questionable association of the headdresses from Medinet Habu with those that appear on anthropoid coffin lids from Egyptian burials in Canaan, see pp. 105–6 above and Chapter 7, pp. 196–97. The most in-depth study of the Philistines' headdress is Galling 1969. Regarding the hairstyles of the Philistine women shown riding in oxcarts, see Chapter 7, p. 197, n. 5.

figure — with an identical headdress and kilt, but bearded and carrying an axe instead of a sword — appears on a *ca*. 1200 ivory carving from Enkomi (A.S. Murray 1970:12–13, fig. 19, Pl. I). More stylized renderings of this same headgear are perhaps to be found on LH IIIC pottery (*e.g*., Wachsmann 1998:fig. 7.26) and on recently discovered sherds of PBP from Ashkelon (Stager 1998:164 [illustration a]). In contrast, the Sherden, who appear alongside the Philistines in the Naval Battle scene from Medinet Habu, don equally distinctive, horned helmets (see Ill. 2).

According to I Samuel, Goliath met the vastly overmatched David in the Valley of Elah armed to the teeth (17:5–7). An unusual amount of attention is paid to the giant Philistine's panoply, no doubt because of its strangeness to the biblical writer (see especially Galling 1966). The "Warrior Vase" from Mycenae provides the closest parallel for his array of armaments — particularly the greaves (Heb. *miṣḥōṯ*, Gk. *knêmides*), which are best known from the Greek world at the end of the second millennium (Verdelis 1977:45–48).

The co-occurrence of numerous traits (*e.g*., fine wares, kitchen wares, hearth rooms, bath tubs, figurines, knotched scapulae, pig consumption, loomweights, worked *conus* shells; see Chapter 1) at Pentapolis sites is more compelling evidence for the presence of an ethnic group than is the occurrence of any single trait. Although Fredrik Barth's caveat that there is no "one-to-one relationship between ethnic units and cultural similarities and differences" (1969:14) still applies, the distribution of distinctive assemblages can be subjected to a wider range of testable interpretations than can an individual trait (Kramer 1977:106; see also Clarke 1978:412–16).

Ultimately, self-identification is the only way to establish beyond a shadow of doubt whether an individual or population is affiliated with a particular ethnic group (see p. 118

above). For ancient societies, textual evidence is the only conduit through which such information might be conveyed. Unfortunately, no early Philistine inscriptions have so far been unearthed;[35] however, neighboring and contemporaneous peoples composed texts that speak at some length about the Philistines. The Hebrew Bible contains a great deal of information about the Philistines, including events that purportedly date to the early history of their settlement in southern coastal Canaan (*e.g.*, Margalith 1994:24–56; Machinist 2000). It is clear that the biblical writers regarded the Philistines as a separate and distinct group (Dothan and Cohn 1994:61–65). Emblematic of this perception is the repeated description of the Philistines as "uncircumcised" (ʻārēl; Judges 14:3; 15:18; I Sam. 14:6; 17:26, 36; 31:4: 2 II Sam. 1:20; I Chr. 10:4; see also Machinist 2000:68).[36] The Hebrew Bible reports also that they inhabited five royal cities (*i.e.*, Ashdod, Ashkelon, Ekron, Gath, Gaza; see Josh. 13:3; I Sam. 6:3–4, 17), three of which have been extensively excavated and shown to have possessed a markedly Aegean-inspired material culture (see Chapter 1). Neo-Assyrian annals, which date to the eighth and seventh centuries, present a very similar scenario (Tadmor 1966; Ehrlich 1996:79–104, 167–94) — that is, a group of city-states[37] in southern

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[35] The most important Philistine text, the royal dedicatory inscription from Tel Miqne, dates to the seventh century (Gitin, Dothan, and Naveh 1997), by which time the ethnic affiliation of their twelfth-century predecessors would have been dimly recalled at best. Note, however, the name of the dedicator, Ikausu (ʼkyš), which is related to the Greek form Αχαιός, meaning "Achaean" or "Greek" (Naveh 1998). Achish (אכיש) was also the name of the king(s) of Gath during the reigns of Saul and Solomon (I Sam. 21:11–16; 27–29; I Kgs. 2:39–40). For the Greek origin of the dedicatee's name, the goddess פתגיה, see Chapter 6, p. 167, n. 18. Note also the Semitic script and formulary of the inscription: it is written in a "peculiar local script" close to both Hebrew and Phoenician and the formulary is most similar to that of tenth-century Phoenician inscriptions from Byblos (Gitin, Dothan, and Naveh 1997:12–13).

[36] According to Merneptah's Great Karnak inscription, at least three groups of Sea Peoples, the Ekwesh, Shekelesh, and Sherden, were circumcised (ARE III §588; see also Chapter 2, p. 37, n. 9).

[37] After Sargon II's conquest of Philistia in 712 (Luckenbill 1927:§30), Gath (^{KI}*Gi-im-tu*) no longer appears in the annals among the Philistine cities, nor is it mentioned in later prophetic writing (*i.e.*, Amos 1:6–8; Jer. 25:20; Zeph. 2:4–7; Zech. 9:5–7; see also Machinist 2000:56).

coastal Canaan ruled by kings and inhabited by the "people of Philistia" (*te-ne-šit . . . Pi-liš-ti-ù*; Luckenbill 1924:104:53).

The objections have been raised that the designation "Philistine" in these texts connotes a geopolitical (Kassis 1965:266–67; Drews 1998)[38] or socioeconomic (Sherratt 1998; for a brief discussion and refutation, see Chapter 7, pp. 199–200), rather than an ethnic affiliation. Undoubtedly, the gentilic "Philistine" could have assumed these other connotations once the Philistines had become settled in the Pentapolis, formed a confederacy (Rahtjen 1965), and opposed the Israelites. But at its core and from the beginning, to be a Philistine must have meant to partake in certain activities — such as cooking in a particular type of pot, weaving with a certain kind of loomweight, or constructing a distinctive sort of hearth — that were learnt by virtue of a common ethnic background and, moreover, had very little or nothing to do with geopolitical or socioeconomic affiliations.

C. Conclusions

Despite the rich corpus of archaeological data pertaining to the question of Philistine ethnicity, it would be foolhardy to estimate the percentage of intrusive Philistines versus indigenous Canaanites at Pentapolis sites during the first half of the twelfth century. The archaeological correlates of ethnicity are simply too variable. No predictive formula or model exists and, short of the discovery of a Philistine necropolis with follow-up DNA analysis of the skeletal remains, is there likely ever to be one. The sudden and extensive

[38] Kassis' argument is based in large part on the erroneous identification of Tell el-Manšiyyah (= Tel 'Erani) with "Gath of the Philistines" (1965:260): because the material culture remained Canaanite at this site during the early Iron I Period (as it should have), the author infers that a minority, Philistine élite exerted a political rather than a cultural influence at Gath.

change in material culture in southern coastal Canaan *ca*. 1175, coupled with the testimony of ancient texts (both biblical and non-biblical), however, requires explanation. Of the various theories offered so far to make sense of this change (see Chapter 7, Sections A1–4, pp. 194–206), the migration and settlement of an ethnically-defined population still best fits the available evidence.

A more deductive, and perhaps more fruitful, means of estimating the size of the intrusive Philistine population was outlined in Section A of this chapter. There is indirect textual and direct archaeological evidence to suggest that the Philistines settled in southern coastal Canaan against the wishes of the regional hegemons, the Egyptians of the Twentieth Dynasty, and at the expense of the local inhabitants, the Canaanites. If, indeed, this was the case, then the destruction levels at Tel Miqne and Ashdod reflect the hostile arrival of the Philistines into the region, followed by the probable flight and/or expulsion of the indigenous population. Granted the return of even as much as half of the population of Canaanite refugees, it is still necessary to account for the other half (or 10,000 people) of the inhabitants at Pentapolis sites (see Chapter 3, p. 102).[39] Although this estimate is by no means secure, it is, nevertheless, reasonable in light of the archaeological and textual data at hand. If for no other reason, this figure of approximately 10,000 Philistine immigrants can serve as a heuristic device for the question posed by the next chapter: would seafaring capability *ca*. 1200 have allowed for such a population movement?

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[39] It bears repeating that Tel Miqne, about which the most is known regarding site size, increased eight-fold from "Canaanite" Stratum VIII to "Philistine" Stratum VII (see Chapter 3, pp. 81–82). Therefore, one must assume an influx of people well beyond the size of the pre-*Adventus Philistinorum* population. Furthermore, in order to explain the geographic expansion of Philistia in Stage 2 (Stager 1995:335, fig. 2; 1998:152–54), one must presuppose a substantial population base, or continued influx, of people who produced an Aegean-inspired material culture.

Chapter 5. Late Bronze and Early Iron Age Seafaring

It is now time to test the feasibility of a large-scale seaborne migration in light of the results obtained from previous chapters. It is perhaps worthwhile to review here these results, which are: 1) that an intrusive population settled in southern coastal Canaan in the first half of the twelfth century (see Chapter 1); 2) that this group of people arrived mainly, if not entirely, by sea (see Chapter 2); and 3) that they were a large group, probably numbering in the thousands (see Chapters 3–4). The question, however, remains: were maritime technology and seamanship of the Late Bronze and Early Iron Ages commensurate to the task of transporting large numbers of people across great distances (cf. Rouse 1986:172)? Fortunately, to help in answering this question we have at our disposal a wealth of information, which is derived from three main sources: texts, depictions of ships, and shipwrecks. Together they provide us with a clear understanding of cargo, ship, crew, and fleet sizes; sailing speeds; travel times; distances journeyed; and common routes taken. As we shall see, all of these have a direct bearing on the Philistines' seaborne migration. First, though, a look at what the Philistines' contemporaries observed about them and about their fellow Sea Peoples.

A. The Sea Peoples as Peoples of the Sea

When the French Egyptologist Gaston Maspero (1881) first coined the expression *les peuples de mer* more than a century ago to describe those marauding northern groups who plagued the pharaohs of the Nineteenth and Twentieth Dynasties, a more apt title could not have been chosen. Seaborne travel by various Sea Peoples (*i.e.*, Philistines, Sherden,

Sikkels, Lukka, Teresh, Ekwesh, Shekelesh, Weshesh) is well-attested in contemporary Egyptian, Ugaritic, and Hittite texts and iconography. Most famous is the "Naval Battle" scene from the outer walls of Ramesses III's mortuary temple at Medinet Habu, in which Philistine (*Pw-r'-s'-t*) and Sherden (*Š'-r'-d'-n'*) warriors are shown on board their ships in the process of being routed by the forces of the Pharaoh (see Ill. 2; Nelson 1930:Pls. 29–43; for further discussion of this scene, see Nelson 1943; Wachsmann 1981; 1982; Raban 1988b). The accompanying text refers to an unspecified group of sea marauders (Edgerton and Wilson 1936:30, Pls. 27–28, v. 52b) and to "the countries from their land in the isles in the midst of the sea" (42, Pl. 42, v. 3; ARE IV §77).

Elsewhere, Egyptian historical texts frequently associate the Sea Peoples with ships and the sea. As early as the reign of Ramesses II (1290–1224),[1] there is a vague reference in the Tanis Stela to "the rebellious-hearted Sherden," and their "ships of war in the midst of the [sea]" (ARE III §491).[2] During Merneptah's (1224–1214) First Libyan War, as recounted in the Great Karnak Inscription, the Sherden, Shekelesh (*Š'-k-rw-š'*), and Ekwesh (*'-ḳ'-w'-š'*) are all described as being among "the countries of the sea" (ARE III §588).[3] From Ramesses III's (1194–1163) First Libyan War, as recorded here by the Medinet Habu Great Inscription, the Philistines and Tjeker (= Sikils; *T'-k-k['-r']*) are called "warriors upon land, also in the sea" (ARE IV §44). Among the vanquished from the Year 8 encounter with the northern countries are "the Sherden and Weshesh (*W'-š-š*) of the sea" (ARE IV §403).

[1] Dates of Egyptian pharaohs in this chapter are taken from Baines and Málek 1980, pp. 36–37.
[2] The Assuan Stela from Year 2 of Ramesses II's reign may refer to the same, or similar, encounters (Cifola 1994:2): "He plunders the warriors of the sea, the great lake of the north, while they lie sleeping" (ARE III §479).
[3] The Athribis Stela, which describes these same events, refers only to the Ekwesh in this way (ARE III §601).

The Lukka appear early on as freebooters, as in the following Amarna letter addressed by the king of Alašiya (= Cyprus) to Pharaoh: "Indeed, men of Lukki, year by year, seize villages in my own country" (EA 38:10). Given the location of the "Lukka Lands" in western coastal Asia Minor, as shown by Hittite texts (see Chapter 2, p. 37, n. 7), these annual depredations by the Lukki were most likely carried out by sea.

The Aḫḫiyawa, whom some identify with the Achaeans of Homer and perhaps also with the Ekwesh of Egyptian texts (see Chapter 2, p. 37, n. 9), were active along the western coast of Asia Minor and also preyed upon Cyprus. Madduwattas, a vassal of the Hittite king Arnuwandas (I?), is reprimanded by the latter for joining Attarissiyas, "the man of Aḫḫiyâ," in making raids on Alašiya, which, according to the text, belonged to the kingdom of Ḫatti at this time (*ca*. 1430) (KUB 14.1; Goetze 1968). Elsewhere, Piyamaradus, a sometime ally of the Aḫḫiyawa, is accused of conducting raids in the area of Millawanda (probably Miletos; see Niemeyer 1998:21–23, 44–45) (KUB 14.2; Sommer 1932:2–19), and in the Šaušgamuwa Treaty, the vassal king of Amurru is enjoined to enforce an embargo directed against Aḫḫiyawan ships destined for Assyria (KUB 23.1 col. iv; Kühne and Otten 1971).

The text expressing most succinctly the maritime character of a Sea Peoples group, however, comes from the archives of Ras Shamra/Ugarit. A letter from the king of Ḫatti recounts an incident whereby an Ugaritian prefect has been taken hostage by the "Šikalayu, who live on ships" (RS 34.129, translated by Gregory Mobley in Stager 1995:337). These are the same as the Sikils, who, according to eleventh-century Egyptian texts, namely, the Onomasticon of Amenope and the Tale of Wenamon, settled in the area of Dor and controlled its harbor (Gardiner 1947:194–205; J.A. Wilson in ANET 26). A quay from this

harbor, which dates to the period of the "Sikkil" settlement, has been excavated at Dor (see Chapter 2, p. 72).

B. Cargo Capacities (Table 7)

The single most important determining factor in evaluating the possibility of a major seaborne migration is the method of transportation — namely, the ships. There are, of course, the depictions of Philistine ships from the famous "Naval Battle" scene at Medinet Habu, about which a great deal can and has been said (see Ill. 2; Nelson 1943; Wachsmann 1981; 1982; Raban 1988b). Beyond this, however, is the rich store of information concerning Late Bronze and Early Iron Age seafaring contained in contemporaneous texts, depictions, and in the results of underwater excavations. From these one gains a clear picture of the state of maritime technology current (and potentially available) to the Philistine migrants. Aspects of this technology crucial to a reconstruction of the Philistine migration are cargo capacities and ship sizes, to which we will now turn.

In addition to the actual movement of people, there was also the matter of the transportation of supplies.[4] These supplies would have included not only the usual necessities of any long sea voyage, such as sufficient food and water, but also, quite possibly, much larger items that would have been required upon their arrival. The full-blown urban character of the initial Philistine settlement evident at Pentapolis sites (A. Mazar 1988a:253; T. Dothan 1992a:97; Stager 1995:345) suggests that the Philistines reached their destination with more than just provisions. Certain items of immediate necessity would have

[4] According to the account of Ramesses III's Year 8 defeat of the Sea Peoples, "their ships and *their goods* were as if fallen into the water" (italics mine; ARE IV §66).

been difficult to produce for a transplanted community and, therefore, were best brought onboard. These items might have included the following: vessels for the storage of water; kitchenware for the preparation of food (cf. Chapter 1, p. 30); metal tools for building and farming; weaponry; and a limited number of livestock (cf. Chapter 1, pp. 20–21).

All of the above items were routinely transported by ship, as is known through ancient texts and depictions. The transportation of livestock during the Late Bronze Age is most vividly demonstrated by Egyptian tomb paintings of the Eighteenth Dynasty. Two oxen, along with numerous other items of trade, are shown being off-loaded a Syrian merchantman in a wall painting from the tomb of Kenamun, a high-ranking official during the reign of Amenophis III (1391–1353) (Davies and Faulkner 1947:Pl. 8). In the scene depicting the expedition to Punt from the mortuary temple of Hatshepsut (1473–1458) at Deir el Bahari, bulls, baboons,[5] and myrrh trees with roots bound are shown onboard, or being brought ashore from the heavily laden ships (Naville 1898:Pls. 72–75; Säve-Söderbergh 1946:14, fig. 1). In the tomb of Huy there is a depiction of two pairs of caged oxen onboard a small cargo ship (Nina de G. Davies 1926:Pls. 132–33). Most intriguingly, in Papyrus British Museum 10056, which most likely dates to the reign of Tuthmosis III (1479–1425), there is a possible reference to the seaborne transport of chariot horses

[5] The cargo described in the Tale of the Shipwrecked Sailor included hounds, apes, and baboons (Erman 1906; Simpson 1973:56). A "fleet of ships of Tarshish" brought gold, silver, ivory, apes, and peacocks to King Solomon once every three years (I Kgs. 10:22).

(Glanville 1932:16; see also Säve-Söderbergh 1946:42): in the royal dockyard of *Prw-nfr* (located in the vicinity of Memphis) there was a ship called the "Stable" (= *P3 ìḫw*).[6]

Royal gift exchange between Alašiya (= Cyprus) and Egypt, as recorded in the Amarna texts, is — by dint of geography — another testimonial to the seaborne transport of large animals during the Late Bronze Age. In EA 37, reference is made to five teams of horses given by the king of Alašiya to the Pharaoh and, in EA 34, the king of Alašiya requests from the Pharaoh two horses and two chariots.

In light of the above depictions and texts, it is possible to suggest that the oxen and carts of the Philistines shown at Medinet Habu (Nelson 1930:Pls. 49:C–D, 50:A) were transported with them overseas.[7] Even if the carts themselves had not been taken onboard, it is entirely feasible that the wood needed to build them had been. Large consignments of timber from Lebanon were made into rafts, towed, and then broken down upon arrival at their ultimate destination to be used for whatever building purposes. This system of transportation is as old as the EB II–III "Byblos Run," whereby emissaries of Pharaoh journeyed to Lebanon in order to procure cedar (see Stager 1992:40–41). It is best described, however, in the response of Hiram, King of Sidon, to Solomon's request for timber:

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[6] Elsewhere in the eastern Mediterranean there is additional evidence for the transportation of horses by sea in the second millennium. A fragmentary LM IIIA seal shows a horse — impossibly standing on the ship's wale or running board — being transported by an oared galley (Kenna 1960:58, fig. 121). Warships served a similar function in later antiquity: during the fifth century, triremes were frequently used to transport cavalry in the Aegean (for references, see Morrison and Williams 1968:248–49). The "Song of Miriam" — "Sing to the Lord, for he has triumphed gloriously; horse and driver he has thrown into the sea" (Exod. 15:21) — infsofar as it does not know of a path of dry ground between the waters, as described by the JE and P prose accounts (Exod. 14:21–29), suggests that the Egyptians must have been using barges to transport their horses and chariots across the Red Sea (Cross and Freedman 1955:239).

[7] There is an interesting reversal of this practice, albeit given riverine conditions, in the military annals of Thutmose III: "When my majesty crossed over the marshes of Asia, I had many ships of cedar built on the mountains of God's Land near the Lady of Byblos. They were placed on chariots. They journeyed in [front of] my majesty, in order to cross that great river (= the Euphrates) which lies between this foreign country and Naharain" (J.A. Wilson in ANET 240).

> I am ready to do all you desire in the matter of cedar and juniper timber. My servants shall bring it down to the sea from Lebanon; and I will make it into rafts to go by the sea to the place you direct, and I will have them broken up there, and you shall receive it (I Kgs. 5:22–23; see also II Chron. 2:16).

In the Tale of Wenamun the timbers sent by Zakar-Baal, King of Byblos, to be used in the construction of Amon's sacred barge, are loaded directly into the ship: "He loaded in the keel, the head of the bow and the head of the stern, with four other hewn timbers, together seven; and he had them taken to Egypt" (ARE IV §582). On a relief from Sargon II's palace at Khorsabad, Phoenician *hippoi* are shown with timbers both in tow and onboard.[8]

All the above shipments of timber, however, were state-sponsored undertakings and would not have been the concern of a migrating population such as the Philistines. Notwithstanding, the Philistines could still have constructed their carts upon arrival in southern coastal Canaan and advanced overland from there to the eastern Delta (see Chapter 2, p. 76).

In order to place the subject of livestock and timber transportation in a broader context, let us now consider the available evidence that relates to the weight-bearing capacities of seagoing vessels during the Late Bronze and Early Iron Ages. Among the approximately 15 tons of preserved cargo found on board the Uluburun shipwreck near Kaş, Turkey (not including anchors and ballast; see Pulak 1991:8) were the following items in bulk (Pulak 1997:235–42): 354 "oxhide" ingots that weighed on average 25 kg; 130 plano-convex discoid, or "bun" ingots, which, combined with the "oxhide" ingots, constituted ten

[8] For the recent treatment of this scene, with photographs, drawings, and references to the original publications, see Albenda 1983. Cf., however, Linder, who argues that this is a riverine and not a maritime scene (1986).

tons of copper and nearly a ton of tin; 149 Canaanite amphoras that carried approximately a ton of terebinth resin and had a combined volume of *ca*. 1,525 liters; 175 glass ingots; and 135 Cypriote vessels, including ten pithoi ranging in height from 0.92 to 1.60 m (Bass, Frey, and Pulak 1984:273).[9]

The Uluburun ship's cargo weight is insignificant, however, when compared to a cargo discussed in an Ugaritic text. In RS 20.212 the king of Carchemish requests from the king of Ugarit that 2,000 *kor* (= 450 metric tons; see Nougayrol 1960:165; Astour 1965:255) of barley be sent from Mukish to Ura — a distance of *ca*. 175 km — in either one or two trips by a single ship (Hoftijzer and van Soldt 1998:341).[10] Taken at face value, this means that the ship in question was able to carry the full weight of 450 tons, or half this amount (*i.e*., 225 tons), assuming that a second trip was necessary.[11]

At first glance this amount may seem impossibly high compared to what is known about cargoes from shipwreck archaeology; however, corroborative evidence exists in the form of the enormous stone anchors found at sites throughout the eastern Mediterranean. Honor Frost extrapolates, based on modern studies of the correlation between anchor weight and ship sizes, that a half-ton stone anchor onboard a wooden ship generally supposes a displacement of at least 200 tons (1985:292). Bronze Age anchors, or groups of anchors

[9] In the hull of the Kyrenia ship, a late fourth-century shipwreck found off the northern coast of Cyprus, were 404 wine amphoras that weighed on average 10.10 kg when empty and 43.50 kg when full (Cariolou 1997:96). The Kyrenia ship's full weight cargo of wine, therefore, was at least 17 tons. Notwithstanding, the excavators propose that she was originally a 25- to 30-tonner (Steffy 1985:100; Katzev 1989:4). Another early Hellenistic Period wreck was recently found in three-km deep water approximately 350 km southwest of Cyprus (Phaneuf, Dettweiler, and Bethge 2001). It is estimated that the cargo contained upwards of 2,500 amphoras, many of which came from the islands of Kos and Rhodes. The early fourth-century wreck discovered off the coast of Alonnesos in the northern Aegean carried 4,000 amphoras, each weighing approximately 30 kg when full; thereby yielding a cargo of over 120 metric tons (Hadjidaki 1997:132).

[10] For Ugaritic texts pertaining to maritime matters, I refer to Hoftijzer and van Soldt (1998), who provide extensive bibliographies including references to the original publications.

[11] According to I Kings 5:25, every year Solomon sent — undoubtedly by sea — 20,000 kor (= 4,500 tons) of wheat and 20,000 kor of "crushed oil" (*šemen kātît*) to Hiram, king of Tyre.

known to have come from a single vessel, that weigh over half a ton have been found at the following sites: a 1,350 kg anchor was found in Kition Temple 4 (Frost 1985:291); a 540 kg anchor was raised from the Bay of Tabarja off the coast of Lebanon (Frost 1963:43, fig. 5); 15 anchors ranging in weight between 60 and 155 kg and with a combined intact weight of 1,000 kg were excavated at Newe-Yam off the coast of Israel (Galili 1985:147, Table 1); 24 anchors that range in weight from 121 to 207 kg were among the cargo at Uluburun (Pulak 1992:9–10). Large anchors with an estimated weight of over half a ton have been found at Haḥotrim off the coast of Israel (Wachsmann and Raveh 1984:169–70, fig. 2; Wachsmann 1998:298, fig. 12.54), at Tartous off the Syrian coast, and off Cape Greco in Cyprus (Frost 1991:370).[12]

The evidence of anchor and cargo weight ratios combined with the report from Ugaritic text RS 20.212 indicates that it was not unusual for Late Bronze Age ships to have taken on at least 200 tons (see Table 7). Even the unassailable weight of 15 tons carried by the Uluburun wreck would not have been a constraining factor for a group of immigrants loading their ships in preparation for a long journey. Therefore, volume, not weight, is the primary consideration for a large-scale seaborne migration.

C. Ship Sizes (Table 8)

The most direct evidence for the size of ships comes from ancient shipwrecks. Based on the distribution of finds on the seabed, the Cape Gelidonya wreck is estimated to have

[12] For the prodigious weight borne by an obelisk barge during the reign of Hatshepsut, see p. 134, n. 15 below.

been 10 m long (Bass 1967:45), and the Uluburun wreck, 15 m (Pulak and Bass 1997:266).[13] There is further information regarding Bronze Age ship sizes in the texts and wall paintings from Old, Middle, and New Kingdom Egypt. Because of the tendencies toward convention and exaggeration in these media, the following measurements should be approached with caution. According to the Palermo Stone, Snefru (2575–2551) had built 100-cubit long *dewatowe* (= "Praise-of-the-Two-Lands")-ships, most made of *meru*-wood, but one of cedar (ARE I §146–47). If the regular cubit was intended, then the ship was 45 m long; if the royal cubit, then 52.50 m. The ship in the Tale of the Shipwrecked Sailor, originally a Middle Kingdom text, is reported to be 120 cubits (= 54 or 65 m) in length and 40 cubits (= 18 or 21 m) in beam (Erman 1906; for English translation, see Simpson 1973:51, 53).[14]

The number of rowers in a ship's crew is an indirect source of information concerning ancient vessel lengths. The ships involved in Hatshepsut's expedition to Punt were equipped with 15 rowers per side (Naville 1898:Pls. 72–75; Säve-Söderbergh 1946:14, fig. 1). If a minimum *interscalmium* (*i.e.*, the distance between oar-stations) of one meter is assumed (Morrison and Williams 1968:155), plus a few extra meters in the bow and stern "to bring the hull planking in toward the posts" (Wachsmann 1998:41), this yields a ship length of 23 m (1995:22; 1998:24). By using a similar calculation, Landström (1970:65) estimates that the ships shown in a relief from the burial temple of Sahure (2458–2446) (Borchardt 1913:Pls. 12–13) were 17.50 m in length. The most direct information by far concerning Egyptian ship-building and sizes, however, is derived from the royal ship burials around the

[13] The Kyrenia ship, of which at least 75% of the hull has survived, was approximately 14 m long and a third of this in beam (Steffy 1985:100; 1994:fig. 3–38). The Alonnesos wreck is estimated to have been 25 m long and 10 m in beam (Hadjidaki 1997:125, fig. 2).

[14] According to Linder (1970:99), the ship's length (assuming the non-royal cubit) is proportional to the size of the crew (= 120 men); therefore, given a rowing crew of 110 (55 rowers per side), and based on the widely accepted calculation for the *interscalmium* (see below), this yields approximately the reported length of 120 cubits (= 54 m).

Great Pyramid of Cheops (2551–2528) at Giza (S.B. Hassan 1946:56–64). The largest of these ships, the Southern "North-South" Solar-Boat, is 37.50 m long and 7.00 m deep.[15]

Indirect information concerning ship sizes may also be derived from their anchors. Again, according to Frost, it is possible to infer ship sizes from anchor weights: half-ton stone anchors, which have been found at a number of sites in the eastern Mediterranean (see p. 132 above), connote a ship roughly 20 m in length (1969:434–35; 1985:292).

Pentekontors, or 50-oared galleys, were almost certainly in use during the Late Bronze Age (Wachsmann 1998:157). Numerous ship depictions from throughout the Aegean show approximately 25 rowing stations, indicating 25 rowers per side and 50 altogether onboard (see Ill. 3).[16] In the *Iliad* (II.718–20, XVI.169–70) and *Odyssey* (X.203–9, VII.34–36, 48) pentekontors are common and used primarily for troop transport (Casson 1995:44, n. 8).[17] By applying the *interscalmium*-based calculation used above for Egyptian ships, we arrive at a minimum length of 30 m for pentekontors.[18]

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[15] Before leaving the Egyptian evidence bearing upon ship sizes, something should be said regarding river barges. Despite the fact that such vessels could not have weathered conditions on the open sea, they deserve mention for what they reveal about the impressive possibilities of water transport in the Late Bronze Age. The obelisk barge depicted on the walls of Hatshepsut's mortuary temple at Deir el Bahari (Naville 1908:Pls. 153–54) is thought to have been 95 m long and 32 m wide, with a deadweight of 2,500 tons and a full cargo displacement of 7,300 tons (Landström 1970:129). These seemingly impossible figures are based on the belief that the obelisks in question were 108 cubits (= 57 m) high — the accompanying text at Deir el Bahari does not specify their height — each weighing approximately 2,400 tons (Habachi 1957:99).

[16] On the side of a LM IIIB *larnax* from Gazi, Crete is a depiction of a ship, the hull of which is intersected by 27 vertical stanchions, thus indicating 28 rowing stations (Alexiou 1972:fig. 1); on an LH IIIC *pyxis* from Tholos Tomb 1 at Tragana near Pylos, 24 vertical stanchions are shown (Korrés 1989:200); on an LH IIIC sherd from Pyrgos Livanaton (= Homeric Kynos) in central Greece is a depiction of a warship with 19 oars and the same number of schematically rendered oarsmen (Dakoronia 1990:fig. 2). For a recent, hermeneutical approach to Aegean Bronze Age ship iconography, see Wedde 2000.

[17] Homer reports in his "Catalogue of Ships" that the Boeotians sent 50 ships each manned by 120 *kouroi* (*Il.* II.509–10). According to Casson, in order to be structurally feasible as fighting vessels, these ships must have been biremes with double banks of rowers on each side (1991:59). In Euripides' expansion on the Homeric tale, Helen and a disguised Menelaus board a Phoenician pentekontor in Egypt, under the false pretenses of desiring to sacrifice a bull at sea in order to honor the supposedly drowned Menelaus (*Helen* 1530–1614). Of note is the total number of passengers: 50 of Menelaus' men sit with concealed swords beside the 50 Phoenician oarsmen, who will soon be driven overboard and then have their ship commandeered by the Greeks.

[18] Casson puts the length of pentekontors during the Geometric Period at 38 m and their width at 4 m (1991:54–55).

The foregoing survey of ship sizes in the Bronze Age Mediterranean indicates a wide range of dimensions based on a variety of types of information (see Table 8). In spite of this miscellany of data, two general statements are permissible: many cargo ships were 15–20 m in length and pentekontors were at least 30 m long. Such ships were able to carry extremely heavy cargoes (see previous section) and to transport a great many passengers, as we shall presently see.

D. Crew Sizes (Table 9)

The number of passengers that ships were able to take onboard is a major consideration for this reconstruction of the Philistines' seaborne migration. Unfortunately, there is no information regarding maximum passenger capacities for ships during the second millennium.[19] A great deal is known, however, about crew sizes, from which data one may reasonably extrapolate information about passenger capacities.

As noted in the previous section on ship sizes, the depiction of oars, oar-stations, and oarsmen on ships throughout the eastern Mediterranean shows that rowing crews were frequently comprised of at least 50 men. The crews of many cargo vessels, however, appear at less than half this size: a crew of 11 mans the Syrian cargo vessel in the Tomb of Kenamun (Davies and Faulkner 1947:Pl. 8) and six appear onboard the merchantman in the

[19] Note, however, these ill-fated voyages of the first century CE: enroute from Caesarea to Puteoli the ship that transported Saint Paul and 276 others ran aground off Malta (*Acts* 27:37); along much the same route, Josephus' ship went down in the Adriatic with all but 80 of 600 passengers drowned (*Vita* 15).

Tomb of Nebamun (Norman de G. Davies 1923:Pl. 31; Säve-Söderbergh 1957:Pl. 23).[20] Still larger crews are reported, or implied, in texts from Egypt, Pylos, and Ugarit.

The An Series (An 1, An 610, An 724) of Linear B tablets from Pylos record the muster of rowers (*e-re-ta*) for reasons not disclosed by the texts.[21] An 1 bears the heading "Rowers to go to Pleuron" and lists the names of 30 rowers taken from five settlements (Chadwick 1973:186–87, 431). If all 30 were to man a single ship — which is a reasonable supposition — then a triakontor was intended (Chadwick 1987:79; Palaima 1991:285; Wachsmann in press:492). Altogether the three An Series texts, as preserved, refer to 569 rowers; by analogy to similar intact texts it is possible to reconstruct a round figure of 600 (Chadwick 1987:77). The crew sizes formed depend on the types of ships they manned (*i.e.*, pentekontors, triakontors, or 20-oared galleys).[22]

A similar system of naval recruitment appears to have been in operation at Ugarit (Killen 1983). The preserved portion of KTU 4.40 contains information regarding the crews of three ships (Hoftijzer and van Soldt 1998:337). The first two ships may have had crews of 19 men and the third, captained by a certain Abdichor, had a complement of at least 18.[23] These crew sizes are perhaps corroborated by KTU 4.689, a list of a ship's equipment

[20] Small seagoing vessels of the early Hellenistic Period required crews of only four men as suggested by the number of salt cellars, oil jugs, pitchers, drinking cups, casserole bowls, and wooden spoon fragments excavated at the Kyrenia shipwreck site (Katzev and Katzev 1989:163).

[21] Baumbach (1983) sees in these tablets preparations for an emergency evacuation brought on by the threat of seaborne invasion, which, in light of the archaeological evidence from Pylos (Blegen and Rawson 1966), is a reasonable conclusion. Wachsmann (in press) takes this scenario one step further: the An Series records not so much a flight, but one part of a large-scale, carefully planned, seaborne migration and colonization that resulted in the so-called "Sea Peoples" settlements on Cyprus and along the Levantine coast. To be sure, this is a thought-provoking suggestion; however, it is a heavy interpretative burden for three tablets to bear and, moreover, one must wonder if preparations made under such duress would have been written down.

[22] For further discussion of the Pylian fleet, see p. 141 of the following section (E) on fleet sizes.

[23] Gaster (1938:110–11), who wrote before the discovery of the An Series, rightly points out similarities between this text and the Homeric "Catalogue of Ships" (see pp. 141–42 below): both give the names of the captains/leaders, the places of origin of the men onboard, and the crew sizes (this last detail is provided only for the Boeotians in the "Catalogue"; see p. 134, n. 17 above). Gaster overextends the evidence, however, in arguing, by analogy to the "Catalogue," that KTU 4.40 records preparations for a military expedition.

(Hoftijzer and van Soldt 1998:339): nine oars (*tš‘.mṯṯm*) is the first entry on the list; if the dual is to be read (*i.e.*, *maṯāṯêmi*/"pairs of oars"; see Heltzer 1982:189 *contra* Xella 1982:33; Hoftijzer and van Soldt 1998:339),[24] then the ship possessed a rowing crew of 18 (Wachsmann 1995:23).

The textual evidence from Egypt related to crew sizes is more plentiful; however, it needs to be approached with greater caution. For example, Amenophis II (1427–1401) boasts of having relieved from their duties his rowing crew (*ḫnj.t*) of 200, who had grown tired after a distance of only half an *ìtr*, and then single-handedly having propelled the ship for two *ìtr.w* (S.B. Hassan 1937:132–33).[25] According to the phantasmagorical Tale of the Shipwrecked Sailor, the vessel that was soon to founder had a crew of 120 men (Erman 1906; Simpson 1973:51, 53). The most reliable source of information on ancient Egyptian crews — albeit for a riverine vessel — comes from a ship's daily log preserved on the verso of Papyrus Leiden I 350 (Janssen 1961). Over the course of the ship's journey along the Nile, the crew size fluctuated between 26 and 40 (7). The crew was comprised of four groups of which three remain relatively fixed: eight or nine "people of the regiment" (*rmṯ s3*); nine or ten "personnel (*smdt*) of the temple"; and at least two "sailors" (*nfw*). The fourth group, "the people of the house" (*rmṯ n pr s3-nswt*), varied in number, which is the main reason for the variability in the size of the overall crew.

The "Naval Battle" scene from Medinet Habu (see Ill. 2; Nelson 1930:Pl. 37) provides perhaps the most direct evidence pertaining to the crew sizes of the Sea Peoples' ships. In this famous scene, Egyptian ships are shown engaged in the various stages of

[24] There is a certain logic to Heltzer's translation in that it would be strange for a ship to have an odd number of oars, unless one oar was used somehow for steering.
[25] In favor of such a large crew size is Säve-Söderbergh's observation (1946:78) that the army unit (*s3*-troop) corresponding to the naval *ḫnj.t* also numbered 200 men (Gardiner 1910:135).

victorious battle over the ships of the Sherden and the Philistines. The three main classes of men onboard the four Egyptian ships (= E.1–4; see Nelson 1943:fig. 4) are rowers, combatants, and captives. The number of rowers varies (7, 8, 10, and 11 respectively), as does the number of captives (0, 3, 8, and 10);[26] however, the number of combatants remains relatively stable (7 with the exception of E.1 which has 9). Each ship also has a steersman and a man in the crow's nest armed with a sling, which brings the range of the total number onboard to between 20 and 30 men. If one assumes that the artist has only depicted those rowers visible in a profile view (*i.e.*, one half the total number) then the overall total is closer to between 30 and 40 men.

The Sea Peoples' ships appear in the Medinet Habu scene with far fewer men onboard for three reasons: 1) they were caught off-guard without their oarsmen at the ready; 2) they are being routed and, therefore, many Sea Peoples have been tossed into the water (Nelson 1943:fig. 5); and 3) the Sea Peoples have not taken any captives. Nevertheless, as many as 16 embattled Sherden warriors appear onboard a single ship (N.4). Regarding these details — as with most any detail from any ancient depiction — one must bear in mind that the artist may have simply followed a convention, or misrepresented a scene.

To sum up: crew sizes in the eastern Mediterranean during the Late Bronze Age varied widely (see Table 9). This variability was undoubtedly conditioned in large part by ship size and ship type: a pentekontor required 50 men just for rowing, whereas a small cargo vessel needed only a handful of crew to stay afloat. What is at issue here, however, is the maximum carrying capacity of seagoing vessels at the time of the Sea Peoples'

[26] The narrative character of the scene accounts for the variability in the number of captives onboard (Nelson 1943:53–54): there are no captives onboard E.1 because this portion of the scene corresponds to the beginning of the battle. By the end of the battle there are a combined 18 bound "Sea Peoples" in two Egyptian ships (= E.3–4).

migration, not the requisite crew size. As demonstrated above (see pp. 131–32), weight would not have been much, if any, of a constraining factor when loading a ship with passengers and supplies. The only real limitations involved would have been those imposed by sufficiency of space, food, and water. The length of the journey and the number of landfalls along the way would have significantly affected the constrictive role played by food, water, and, to a lesser degree, space: fewer provisions are required and cramped conditions are more tolerable on shorter trips. For this reason a full consideration of maximum ship passenger capacity is better left after the discussion of travel times (see Section F, pp. 145–49) and probable migration routes (see Section G3, pp. 153–56).

For the time being it is worth noting that some ships of the Late Bronze Age (*i.e.*, pentekontors) clearly carried at least 50 passengers, a number that takes into account only the rowing crew. It is reasonable to suppose that another 20 passengers — including additional crew members — could have sat on deck near the bow, stern, and along the approximately 25 m of the ship's central planking. The resulting total of 70 passengers should probably stand, however, as a maximum provisional number.

E. Fleet Sizes (Table 10)

During the Late Bronze Age many coastal cities were able to muster sizable fleets, and smaller groups of ships were at the disposal of bands of freebooters. Significantly, the Philistines are often thought to have emerged from one of these two sociopolitical backgrounds — namely, a collapsed city-state (*e.g.*, Wachsmann in press) or a confederacy of pirates (see Section A, pp. 125–26 above). For this reason it is worthwhile to look at the

potential naval strengths of each and, in so doing, perhaps learn something about the Philistines' origins.

The largest fleets in the eastern Mediterranean during the second millennium belonged to the coastal Canaanite — later Phoenician — cities. According to the Tale of Wenamon, the prince of Byblos, Zakar-Baal, had in his commercial fleet 20 *mnš*-vessels at Byblos and 50 *br*-vessels at Sidon (Wente 1973:147 = ARE IV §574). Both *mnš* and *br*-vessels appear to have functioned as cargo ships that could also serve in a military capacity,[27] as for example during the Year 8 encounter with the northern countries: "I caused to equip the harbor-mouths, like a strong wall, with warships (*mnš*), galleys (*br*), and barges" (ARE IV §65).[28]

The Ugaritic texts contain by far the most information concerning Late Bronze Age fleet sizes. RS 34.147 is a list of 13 decommissioned ships, identified by the names of their captains, which belong to the king of Carchemish (Hoftijzer and van Soldt 1998:342–43). Fifteen seagoing *ṯkt*-vessels are listed in KTU 4.366, a tablet found in the royal archive, which is a strong indication that these ships were in the king's service (Hoftijzer and van Soldt 1998:338). A similar list of ships from Maḫadu, Ugarit's main harbor, records at least 17 ships, of which 13 are *br*-vessels and four are *ṯkt*-vessels (KTU 4.81; Hoftijzer and van Soldt 1998:337). At least 30 ships appear in the badly damaged text RS 20.141B (Nougayrol *et al*. 1968:107). The largest number of ships appears in KTU 2.47, an urgent request from the military commander Yadinu to the king of Ugarit — probably Ammurapi — for 150

[27] Throughout the Late Bronze Age (Linder 1970:97; 1981:40) and Geometric Period (Wallinga 1993:38) seagoing vessels could serve multiple purposes. Triremes, a naval development of late sixth-century Greece (103–29; 1995:48), were the first pure warships.

[28] For further discussion of the naval terms *mnš*, *br*, and *ṯkt* (below, this page), see Sasson 1966, pp. 130–31.

ships (Hoftijzer and van Soldt 1998:336–37).[29] This number is not far off from the 100 ships laden with grain sent by a vassal ruler — perhaps the king of Ugarit — to the famine-stricken Hittite Empire (KBo 2810; Klengel 1974:171–74; cf., however, Singer 1999:718, n. 385).

Although less plentiful, the evidence from Mycenaean city-states approximates the Levantine data. As noted above (see p. 136), the Pylos An Series records the muster of roughly 600 rowers. If they manned pentekontors, then they formed an armada of 12 ships; if triakontors, then 20; if 20-oared galleys, then 30; or, they could have rowed a combination of all three (Chadwick 1987:79; Wachsmann 1995:24).

The "Catalogue of Ships" from Book II of the *Iliad* is perhaps the most valuable source for reconstructing Greek political demography at the end of the Bronze Age.[30] The "Catalogue" records the number of ships sent by each region to aid in the Achaean war effort against Troy. Many regions sent contingents aboard 40 (*e.g.*, Phocaea, Locris, Athens, Aetolia), 50 (*i.e.*, Boeotia, Pelasgian Argos), and 80 (*i.e.*, Argos, Crete) "black ships." The kingdom of Pylos, which included the capital and eight satellite villages, was led by king Nestor and sent 90 ships (*Il*. II.591–602). Mycenae and its 11 dependencies contributed the

[29] In an attempt to refute the notion of an Ugaritian thalassocracy, Lambrou-Phillipson (1993:164–66) casts doubt on the reliability of this figure based largely on her misrepresentation of the text. The author's attempt to cast Yadinu as a royal tutor — in which capacity he would not have been familiar with the city's naval strength and, therefore, requested an impossibly high number of ships — rather than as military commander (*'l ḫrd*), which the text strongly indicates (Heltzer 1979:251–52), is misleading.

[30] The "Catalogue" is now widely recognized as a separate unit within the *Iliad* and as the oldest pericope in all of Homer (*e.g.*, Page 1959:136; Kirk 1962:223–26; Simpson and Lazenby 1970:153–71; Taylour 1995:41). The most persuasive argument for a Mycenaean Period date for the "Catalogue" is based on settlement pattern data: numerous sites (*e.g.*, Pylos) mentioned in the "Catalogue" were abandoned after the Mycenaean period; of the sites that have been identified archaeologically, which represent approximately 75% of all those listed, each one has produced evidence for inhabitation during the Mycenaean Period; and, sites and regions of great importance in the eighth century — the date of the *Iliad*'s composition — are relatively insignificant (*i.e.*, Athens), or completely absent (*i.e.*, Ionia) in the "Catalogue." That the fleet sizes given in the "Catalogue" are close to those known from comparable sites in the Levant (see Table 10), is further reason to trust in some of its details.

largest army and greatest fleet: Agamemnon sent 100 ships, not including those given to the neighboring Arcadians, a land-locked people (*Il*. II.569–80, 612–14).[31]

Although Egypt was predominately not a sea power, she did at times possess fleets for war and trade. As early as the reign of Snefru, 40 ships laden with cedar arrived from Lebanon (ARE I §147). Khnumhotpe, a retainer of Amenemhet I (1991–1962), reports that he accompanied his master on a journey to Upper Egypt in a flotilla of 20 cedar ships (ARE I §465). Also during the Twelfth Dynasty, Amenemhet II (1929–1892) dispatched ten ships to Khenty-she (= the Lebanese coast) in order to retrieve troops campaigning there (Farag 1980).[32] Finally, in the Eighteenth Dynasty tomb of Khaemhet, 22 cargo ships are shown before and after a journey abroad (Vandier 1969:934–36, Pl. 24, fig. 351).[33]

1. Fleets and Piracy

A strong centralized authority — either a city-state such as Ugarit, Pylos, and Byblos or an empire like Egypt — assembled all the fleets discussed so far, mostly for purposes of trade or troop transport. During the Late Bronze Age there was, however, another activity towards which smaller groups of ships were put — namely, piracy. As we have already seen (see Section A, pp. 125–26), various Sea Peoples, such as the Sherden, Lukka, Šikilayu, and perhaps Aḫḫiyawa, were well known for raiding and kidnapping along the coasts of Egypt,

[31] Although Simpson and Lazenby acknowledge the individual Mycenaean city-states' capacity to build and man fleets of 100 ships, they rightly doubt Late Bronze Age Greece's ability to muster collectively 1,186 ships (1970:161). At 50 men per ship, Agamemnon would have led nearly 60,000 Achaeans to Troy.
[32] As early as the reign of Pepi I (2289–2255), troops were sent onboard *nmj.w*-ships to quell an uprising in Canaan (ARE I §315; Säve-Söderbergh 1946:33), and, in the account of Tuthmose III's sixth campaign in the land of Retenu, the word for "expedition" (*wḏȝ.t*) is written with the boat determinative (ARE II §464, note d).
[33] Although they appear as Nile vessels, the accompanying text suggests that they came by sea (Landström 1970:138).

western Asia Minor, Cyprus, and Syria.[34] Some such group likely lurks behind the reports of maritime marauding in Ugaritic texts RS 20.18 and 20.238. In the first letter the prefect of Alašiya, Eshuwara, accuses the king of Ugarit of complicity in the damage wrought by 20 enemy ships (Hoftijzer and van Soldt 1998:343). In the second missive the king of Ugarit, Ammurapi, apprises the king of Alašiya of the destruction caused by seven ships while both the Ugaritian army and navy were away (344; see also Chapter 2, p. 50).[35]

Similar accounts of brigandage survive in Homer. After leaving Troy, Odysseus and his men sacked the Thracian city of Ismarus (*Od*. IX.39–61). While Odysseus' crews feasted and drank — despite their leader's wise counsel to set sail immediately — the native Cicones rallied their inland kinfolk and on the following day routed the Achaeans. Later, in an episode that has been compared to the Sea Peoples' attacks on Egypt (Ormerod 1997:93–94; Stadelmann 1968:157, n. 11), Odysseus' men pillaged the countryside of the Egyptian Delta (*Od*. XVII.425–44). Once again the Achaeans were repulsed the next day, this time with many casualties and prisoners taken, Odysseus among the latter.[36]

Hit-and-run tactics executed by small groups of ships characterize piracy in Homer and in the Late Bronze Age texts (Wachsmann 1981:188; 1998:164). Based on their close association with other groups who are reported to have engaged in this type of activity — especially the Lukka and Šikalayu — it is reasonable to suppose that the Philistines did the

[34] The *mi-shi* of the Amarna texts (EA 101:4, 33; 105:27; 108:38; 110:48[?]; 111:21[?]; 126:63), who have been described as forerunners of the Sea Peoples (Säve-Söderbergh 1946:65–66), may also have engaged in piratical activity, but this was in the capacity of serving in Egypt's naval forces (Lambdin 1953), or as opportunistic mercenaries (Linder 1973:319–20).

[35] RS 20.238 is a response to RS L.1, wherein the king of Alašiya counsels the young king of Ugarit regarding the defense of his kingdom against seaborne attack (Hoftijzer and van Soldt 1998:343–44). RS 20.162 and KTU 2.33 (= RS 16.402) also deal with enemy movements, the former probably by sea and the latter by land, in the closing days of Ugarit (Singer 1999:721–25).

[36] Thucydides (Th.) also writes about piracy in the early period (το πάλαι), presumably about the time of the legendary king Minos (1.4). He reports that it was at first an honorable profession practiced by men of high standing for the purposes of personal gain and for the support of loyal followers in need (1.5).

same. It is highly improbable, however, that such small groups of pirates could have undertaken the large-scale migration and settlement of thousands of people as was witnessed in southern coastal Canaan during the twelfth century (see Chapters 2–3).[37] How might this apparent contradiction be resolved? The history of a much later group of pirates, the Vikings, may provide some answers. Although famous primarily for their pillaging, the Vikings also assumed the role of traders, mercenaries, and, eventually, colonizers (Roesdahl 1991:187, 191). When raiding, the Vikings rarely dispatched their entire fleet; instead, they reserved their full number for missions of conquest. Full-blown invasions, as at the end of the ninth and the beginning of the eleventh centuries CE in England, were often the result of joint efforts between several armies.[38] The number of ships sighted (and cited) in RS 20.18 and 20.238, therefore, may not represent the full strength of the enemy fleet.

From the available evidence, as we have seen, it appears that certain coastal city-states at the end of the second millennium had at their disposal fleets on the order of 100 ships (see pp. 140–41 above, Table 10). This mustering capability was certainly true for Ugarit (KTU 2.47, KBo 2810?) and possibly also for Mycenae (*Il*. II.569–80, 612–14). Other city-states, like Byblos (ARE IV §574; Wente 1973:147) and perhaps Pylos (*Il*. II.591–602), were not far behind at 70 and 90 ships respectively. That the Philistines came from regions of similar sociopolitical complexity is to be predicted: the clear urban character of their initial settlements in southern coastal Canaan (A. Mazar 1988a:253; T. Dothan 1992a:97; Stager 1995:345) anticipates such an origin. For heuristic purposes let us suppose

[37] As a point of comparison, between 1716 and 1726 CE — a period of intense piratical activity in the Atlantic and Indian Oceans — there were probably no more than 2,000 buccaneers at any given time (Rediker 1989:256). Reports of 20,000 Cilician pirates captured and settled (Plutarch [Plu.], *Pompeius* 28.2), and 10,000 slain (Appian, *Mithradates* 96) by Pompey are probably gross exaggerations (Rauh 1997:265–66, n. 13).
[38] For references to Viking fleet strengths and army sizes, see Roesdahl 1991, p. 192. In general, for Viking ships and seafaring, see Christensen 1972, pp. 165–80; Crumlin-Pedersen 1972, pp. 182–86; McGrail 1991.

that the Philistines came from the Argolid or the southern coast of Cyprus. In both areas there are numerous, major, LH IIIB–C sites that could have responded to a regional muster, thereby producing a fleet with hundreds of ships. If, however, the naval resources of only a single city-state had been available, this would still allow for the transportation of a large group of people, as we will soon see (see p. 157 below).

F. Travel Times and Sailing Speeds (Tables 11–12)

The purpose of this section on ancient travel times and sailing speeds is threefold: first, to examine, in a general sense, some additional factors affecting the Philistines' seaborne migration; second, to explore the relationship between sea voyage length and passenger capacity; and third, to compare the advantages and disadvantages of maritime versus overland travel in the eastern Mediterranean (cf. Chapter 2, pp. 67–69).

In the following survey of ancient sea voyages it is important to bear in mind that the primary dictate governing speed of travel was wind direction. Regardless of the type of ship, currents, or wind force, a voyage would be considerably lengthened by unfavorable winds (Casson 1995:282). However, given any of the commonly proposed Philistine homelands (see Chapter 2A, pp. 36–39), a sea voyage to southern coastal Canaan would not have been hampered by such winds, provided that it was undertaken in the proper season (see Section G1, pp. 150–52). Although all the evidence bearing upon ancient travel times and sailing speeds derives from later periods (*i.e.*, Geometric, Hellenistic, Classical), most of it is still

applicable for the time of the Philistine migration because sailing technology did not change significantly during the intervening four to nine hundred years.[39]

The *Odyssey* and the experimental voyages of Kyrenia II, carried out in recent times (1986–87), contain valuable information on maritime travel in antiquity. Odysseus and his squadron of nine ships rode a favorable north wind[40] from Crete to the Nile Delta — a distance of approximately 305 nautical miles (NM)[41] or 565 km — in five days (*Od*. XIV.245–60); therefore, he sailed at an average speed of 2.54 knots.[42] Diomedes and his crews reached Argos via Euboea on the fourth day out of Lesbos, a voyage of approximately 211 NM covered at an average speed of 2.51 knots (*Il*. III.185–90; see also Malkin and Fichman 1987).

The Kyrenia II, a replica of the late fourth-century wreck found off the northern coast of Cyprus, sailed from the Greek mainland to Cyprus and back under conditions very similar to those experienced by ancient seafarers (Katzev 1989; 1990; Cariolou 1997). The 595.5 NM trip from Piraeus to Paphos took a combined total 25 days; 15 days were spent under sail (60%) and 10 in port (40%); for 414.5 NM (69.6%) the ship was driven by sail at an average speed of 2.95 knots and for 167 NM (28%) it was towed by tugboat (see Table 11B;

[39] With the widespread adoption of the brailed, or loose-footed, sail, which appears on the ships of both the Egyptians and Sea Peoples at Medinet Habu by the end of the Late Bronze Age, seagoing ships were able to reef more easily and to sail more effectively under windward conditions (Raban 1989:170; O.T.P. Roberts 1991:55; Georgiou 1991:68; Vinson 1993:133–34; Wachsmann 1998:175). In later periods, ships — such as the vessel built by Odysseus (*Od*. V.254–60; Seymour 1965:311–12; Morrison and Williams 1968:54–56) and the Kyrenia II (Katzev and Katzev 1989:173; Cariolou 1997:85–87, figs. 1–2) — were fitted with similar rigging.

[40] These winds were known as the Etesians in ancient times, commonly referred to as *meltemi* today. North to northwest winds blow at least 50% of the time during the warm sailing season (= May to October) around Crete (Lambrou-Phillipson 1991:12, Tables 1–5). For more on winds, currents, and sailing seasons see Section G1–2, pp. 149–53.

[41] A nautical mile is equal to 6,080 feet or 1.85 km.

[42] Strabo (10.4.5) reports that the voyage from Cape Samonium (Crete) to Egypt usually took four days and nights (= an average of 3.18 knots), but sometimes lasted just three (= an average of 4.24 knots).

Katzev 1990:250–51).[43] The return voyage was slightly longer at 657.6 NM, but took only 19 days; 12 days were spent under sail (63%) and 7 days in port (37%); the ship was propelled by sail for 482.3 NM (73%) at an average speed of 2.85 knots and was towed for 172.5 NM (26.2%) (Katzev 1990:255).[44]

Most illuminating are the runs across open sea from Kastelorizo (off the Turkish coast opposite Kaş) to Cyprus and from Cyprus to Rhodes. In fewer than four days the Kyrenia II traveled 192 NM from Kastelorizo to Paphos; for 178 NM (92.7%) the ship was driven by sail at an average speed of 2.7 knots and for 9 NM (4.6%) it was towed (Katzev 1990:250). The 300-NM trip from Cyprus to Rhodes was completed in four days; for 281 NM (93.7%) the ship was driven by sail at an average speed of 3.0 knots and for 18 NM (6.0%) it was towed (251).[45] Based on these last results, it would seem that small, seagoing, cargo ships in antiquity were quite capable of averaging 55 NM (= 100 km) per day under favourable conditions. This figure is consistent with the daily averages reported in the *Odyssey* and also, as we will presently see, in later ancient accounts.

Numerous accounts of maritime travel in the eastern Mediterranean survive from later antiquity (Casson 1995:282–96; see Table 11A) and many of the routes described correspond to the reconstructed paths of the Philistines' migration (see Section G3, pp. 153–56). According to Thucydides, who wrote in the latter half of the fifth century, a merchantman that left Karystos in Euboea arrived at Mytilene on the third day (1.3.5–6). In the second(?) century CE, a vessel made the 400-NM voyage from Rhodes to Tyre in four

[43] For a very small percentage of this distance the ship was driven by oar, or by combination of sail and oar.
[44] Cf., however, these distances given by the ship's captain: 707.5 NM total distance, 495 NM under sail (70%), and 212.5 NM towed (30%) (Cariolou 1997:89).
[45] For a six-hour period the Kyrenia II averaged almost 12 knots covering a distance of close to 70 NM (Cariolou 1997:94). Over one 24-hour period the ship maintained an average speed of six knots and traveled 138 NM (Katzev 1989:8).

days, therefore traveling at an average speed of 4.17 knots, despite failing winds and an encounter with pirates on the second day (Xenophon of Ephesus, *Ephesiaca*. 1.12.3, 13.4–5, 14.6). Diodorus Siculus reports that with a fair wind many merchant ships covered the 325-NM distance from Rhodes to Alexandria in three and one half days, therefore sailing at an average speed of 3.87 knots (3.34.7). According to Lucian, a heavily laden cargo ship sailed the 250-NM distance from Pharos (= the lighthouse at Alexandria) to Acamas (= the western tip of Cyprus) in seven days, therefore averaging 1.6 knots (*Navigium* 7). Next, she took advantage of coastal breezes while making her way up the coasts of Syria and Lycia to the Chelidonian islands — a total distance of 465 NM — in nine days, thus averaging better than two knots (Casson 1950:46).

The travel log of Mark the Deacon (Marcus Diaconus) is particularly instructive in that the cleric often sailed into or out of former Philistine Pentapolis cities. He made the 855-NM voyage from Byzantium to Gaza in 10 days (*Vita Porphyri* 27), therefore averaging 3.56 knots, and covered the 800-NM distance from Thessalonica to Ascalon in 12 days (*Vita Porphyri* 6), therefore averaging 2.56 knots. Surprisingly, the reverse trip (*i.e.*, from Ascalon to Thessalonica — an itinerary usually subject to unfavorable winds) took only one day more.

Even more relevant to a reconstruction of the Philistines' seaborne migration are the accounts of ancient fleet movements (see Table 12). Most of these concern maneuvers in the central or western Mediterranean; however, two passages relating to Caesar's advance on Egypt describe routes very similar to those discussed above. According to Appian, a small detachment of triremes under Caesar sailed from Rhodes to Alexandria — a distance of 325 NM — in three days (*Bellum Civile* 2.89); therefore, they traveled an astounding 108.33

NM/day and averaging 4.51 knots. Lucan reports that they made the 550-NM voyage from Troy to Alexandria by following a favorable west wind in a more prosaic seven days, thus averaging 3.27 knots (9.1004–5).

Based on numerous other such accounts from the rest of the Mediterranean, Lionel Casson estimates that the average rate of travel for fleets before favorable winds was between 48 and 72 NM/day (= 2 to 3 knots), and before very light or unfavorable winds, between 24 and 36 NM/day (= 1 to 1.5 knots) (1995:292–96, Table 6). The upper limit for fleet travel before favorable winds approximates the average rate of travel for single vessels in the eastern Mediterranean under any conditions (*i.e.*, 74 NM/day or 3.08 knots; cf. Tables 11A and 12).[46] Given the generally favorable wind conditions along the projected route of the Philistines' migration (see Section G3, pp. 153–56), it is reasonable to suppose that a combined fleet of merchantmen and warships could travel at an average rate of *ca*. 50 NM/day, or approximately two knots.

G. Factors of Nature

The environment significantly affected when ancient mariners sailed, what routes they selected, and how quickly they traveled. As already mentioned (see p. 145), wind direction was the single most important factor when it came to sailing in the Mediterranean. Geography was a close second: the distance between landfalls and the availability of safe anchorages prescribed, to a large extent, ancient sea routes. Furthermore, orography and the differential heating effect of land and sea influence considerably local and regional wind

[46] This points up the obvious fact that a fleet is only as fast as its slowest ship (Tarn 1909:185; Casson 1995:292).

regimes (Air Ministry, Meteorological Office, *Weather in the Mediterranean I*:2, 72, 92–95). Currents and atmospheric conditions (the latter as it applies to visibility) played only minor roles.

1. Winds and Sailing Seasons

A comparison of modern anemographic data with the meteorological observations of Aristotle (*Meteorologica*, Book 2) and Theophrastos (*De Ventis*) shows that wind conditions have not changed significantly in the eastern Mediterranean since the fourth century (W.M. Murray 1987; 1995:34–38). This consistency in wind pattern over almost two and a half millennia strongly suggests that similar conditions prevailed at the time of the Philistines' migration.

During the summer sailing season (*i.e.*, June to September) the northerly Etesian winds predominate.[47] Their regularity is such that at certain times and places they resemble trade winds (*Weather in the Mediterranean I*:78).[48] By following the wind, therefore, ships could easily embark from the Greek mainland, the Aegean, coastal Asia Minor, Crete, and Cyprus and sail to Egypt or the Levant. The return trip could be made by taking advantage of the southerly land breezes all along the coast from Egypt to Asia Minor and then island-

[47] In general, for the strength and frequency of northerly winds (*i.e.*, Boreas, Aparktias, Meses, Kaikias, Argestes, Olympias, Skyron, Thraskias) during the Classical Period, see Aristotle's *Meteorologica* 361a4–7, 362a11–12, 363a3–4, 364a5–7, 364b3ff. and Theophrastos' *De Ventis* 2, 10.

[48] Etesians are most persistent in the Aegean, where they can attain a frequency of up to 80% from the middle of July to August (*Weather in the Mediterranean I*:79; *II*:215 [Iraklion], 223 [Skyros], 235 [Chios], 237 [Samos]). According to the U.S. Hydrographic Office, windroses from June to September between the 30th and 35th parallels (*i.e.*, from Egypt to Crete) and the 20th to 35th meridians (*i.e.*, from Cephallenia to Syria) show an extremely steady northwesterly direction (154A.32–33; see also Casson 1995:272). Data compiled by the Greek Hydrographic Service of the Navy over a 20-year period at five weather stations in Crete show that northerly or northwesterly winds blew nearly 70% of the time during the six warm months between May and October (Tables A1–5; see also Lambrou-Phillipson 1991:12, 17–19).

hopping across the Aegean (W.M. Murray 1995:39–40). Thus, sea traffic in the eastern Mediterranean during the Late Bronze Age proceeded in a general counterclockwise fashion (*e.g.*, Sherratt and Sherratt 1991:357), as the cargoes onboard the Cape Gelidonya (Bass 1967:164) and Uluburun shipwrecks indicate (Bass 1987:697–99; Pulak 1988:36–37; Lambrou-Phillipson 1991:14).

From the late fall through the winter (*i.e.*, November to March) sea traffic on the Mediterranean effectively ground to a halt (Casson 1995:270–72). Winds during this period, although variable, tend to blow from the south (*De Ventis* 10; *Acts* 27:12–13; Heikell 1997:26–28).[49] Poor visibility (see p. 153 below) and storms, however, were the real obstacles to winter seafaring.[50] Gales in the Mediterranean were most common during the winter and especially frequent in the Aegean (*Weather in the Mediterranean I*:89).[51]

In short, the prevailing northwesterly winds of the summer sailing season would have greatly aided a seaborne migration from most regions proposed so far for the Philistines' homeland — namely, mainland Greece, the Aegean islands, Crete, coastal Asia Minor, and Cyprus. If the point of departure had been Cilicia, however, the journey would have been more difficult: land breezes along the Levantine coast blow predominantly from the south, sometimes year round (*Weather in the Mediterranean II*:240–41 [Adana, from June to September], 250–51 [Beirut], 252–53 [Ramle, only until 2 pm]; Brown 1969:15). Moreover, immediately south of Cilicia is the Gulf of Iskenderun, where there are especially strong winds — occasionally attaining gale force — that descend from the Amanus mountain range

[49] Georgiou (1991:62; 1993:361) rightly points out that all winds occur in all seasons and, therefore, ancient seafarers needed wait only a few weeks for a favorable wind to blow (*Od*. XIX:200–205). The fact remains, however, that travel in certain directions was considerably easier at certain times of the year.
[50] Consider the list given by the third/fourth-century CE Latin author Vegetius, concerning the pitfalls of winter sailing: "scant daylight, long nights, dense cloud cover, poor visibility, and the violence of the winds doubled by the addition of rain or snow" (4.39).

(Seton-Williams 1954:126; *Weather in the Mediterranean I*:92; Heikell 1997:244). These wind conditions, however, would not have prevented a fleet of ships from sailing southwards along the Levantine coast and putting into shore when the weather grew unfavorable. Read literally, the description of the Sea Peoples' path of destruction enroute to Egypt (ARE IV §64) corresponds precisely to such a coastal route. From the perspective of long-term weather patterns in the eastern Mediterranean, however, the Philistines would have fared better by heading for the open sea and riding a steady northwesterly to southern coastal Canaan.

2. Currents and Visibility

Today, currents in the eastern Mediterranean basin move in a general counterclockwise direction (Ovchinnikov 1966; Hecht, Pinardi, and Robinson 1988:1320–21, fig. 2; Lambrou-Phillipson 1991:Pl. 1). Despite the lack of direct corroborative evidence, it is assumed — when considered at all — that these conditions prevailed also during the Late Bronze Age (Lambrou-Phillipson 1991:12). Except for certain straits and channels (*e.g.*, Bosporus, Straits of Messenia), however, the effect of current was negligible (McCaslin 1980:88; Casson 1995:273). Even if Mediterranean surface currents had been considerably stronger in antiquity, their counterclockwise movement would only have aided ships along the projected path of the Philistines' seaborne migration.[52]

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[51] According to Aristotle, gales (*eknephíai*) occur most often in autumn followed by spring (*Meteorologica* 365a1–3).

[52] Based on data from the *Mediterranean Pilot V* (Diagram 2), Lambrou-Phillipson calculates that typical summertime currents in the south Aegean alone could carry a loaded Late Bronze merchantman 12–24 NM on a southeasterly course from Crete to Egypt (1991:12).

On the whole, visibility in the eastern Mediterranean is better in summer than in winter: the Etesians tend to bring dry air and clear skies in warmer months, whereas clouds, rain, and fog often characterize winter weather (*Weather in the Mediterranean I*:78). Furthermore, the combination of overcast conditions and long winter nights rendered navigation much more difficult before the invention of the compass (Casson 1995:271).[53] Like winds and currents, therefore, seasonal visibility favored maritime travel during the summer.

3. Sea Routes and the Path of Philistines' Seaborne Migration

Before the introduction of the brailed rig at the end of the Late Bronze Age (see p. 146, n. 39 above), wind dictated the where and when of seaborne travel in the eastern Mediterranean, which meant sailing in a generally counterclockwise direction during the summer months. Jean Vercoutter was the first to propose that this was the pattern of Late Bronze Age trade (1956:319–22, fig. 162 followed by McCaslin 1980:107), a suggestion now borne out, as noted above (see p. 151), by the cargoes of the Cape Gelidonya and Uluburun shipwrecks. Clockwise movement against the prevailing winds was certainly possible, especially in ships (like the Philistines') fitted with a brailed sail, but this would have been the exception to the rule and was probably undertaken only for short distances. Besides, people setting out from any of the proposed Philistine homelands (except Cilicia)

[53] Summer fog, or haze, is due primarily to modern pollution (Heikell 1997:29) and, therefore, was not an important feature of ancient atmospheric conditions.

would have fallen into this generally counterclockwise pattern, thereby benefiting greatly from the strong and steady northwesterly Etesian winds.[54]

As stated earlier (see Chapter 2, p. 35), it is not my intention to locate the Philistines' place of origin except in broad terms, but rather to demonstrate that wherever it might have been within those terms, travel by sea was necessary. Seaborne travel from the Aegean region and Cyprus to southern coastal Canaan was not only common in the Late Bronze Age,[55] but was also the only means of transportation between these regions. The real question, then, is: how difficult was it for a large group of ships to make this journey carrying hundreds, if not thousands, of people as well as their supplies? One important constraint, mentioned briefly above (see p. 139), concerns the length of time at sea between landfalls.

If departing from the Greek mainland, the Aegean islands, or coastal Asia Minor in the area of Miletus, the Philistines could have put in to shore every night as far south as Crete, or, as far southeast as Rhodes.[56] A single ship could then make the trip from Crete to Egypt, or from Rhodes to Cyprus, in as little as four days (see p. 147 above). A slower moving fleet would probably take an additional day or two, but altogether no more than a week. These latter stages represent the longest periods at sea without landfall on a voyage

[54] Even Cyprus — located at a point on this counterclockwise circuit where travel should proceed in a northwesterly direction aided by southeasterly land breezes — does not pose a problem. Ships could have followed the westerly and northwesterly winds, which predominate around most of Cyprus in the summertime (*Sailing Directions for the Mediterranean IV* [Pub. no. 55]:16; Heikell 1997:247), on a direct open sea course from the western half of the island to southern coastal Canaan (*Weather in the Mediterranean II*:244–45 [Morphou Bay]; 246–47 [Paphos]; 248–49 [Nicosia]; cf., however, 242–43 [Cape Andreas at the northeastern tip of the island, where the prevailing winds are southerly]).

[55] The appearance of massive amounts of Mycenaean and Cypriote pottery at Canaanite sites during this period vividly illustrates the intense level of maritime mercantile contact between these regions (*e.g.*, Stubbings 1951; Gittlen 1977; Gilmore 1992; Leonard 1994).

[56] Between Piraeus and Kastelorizo, the Kyrenia II traveled no farther than 100 NM and no more than 24 hours (except for the Schinousa to Kos run which took 24 hours and 55 minutes) between island stops (Katzev 1990:245–51).

from the Aegean to southern coastal Canaan.[57] Therefore, the Philistines need not have brought onboard more than a week's provisions. One might argue further that because the length of time between disembarkments was relatively short, cramped conditions on the ship were more tolerable. If this is true, then more passengers and cargo could have been taken onboard.

For heuristic purposes and as a point of comparison with overland travel (cf. Chapter 2, pp. 69–71), let us project the overall length (in terms of both time and distance) of the longest possible migration route — namely, from the Argolid to southern coastal Canaan. The best available data come from the experimental voyage of Kyrenia II (Katzev 1990; Cariolou 1997), whose performance approximates those of Late Bronze Age vessels despite the fourth-century date of her prototype (see p. 146, n. 39 above). In ten days the Kyrenia II traveled from Piraeus to Kastelorizo — a total distance of 403.5 NM — by way of Sounion, Kythnos, Syros, Naxos, Schinousa, Kos, Nisyros, and Rhodes (Katzev 1990:245–51).[58] The leg from Kastelorizo to Paphos — a distance of 192 NM — was completed in four days. Although there are no comparative data for ancient sailing times between Cyprus and southern coastal Canaan, it is reasonable to suppose that given a similar distance (*i.e.*, *ca*. 200 NM) and sailing conditions, a similar travel time (*i.e.*, four days) would be possible. Altogether this *ca*. 800-NM (= 1480 km) voyage from the Greek mainland to southern coastal Canaan would have taken approximately 18 days, at an average speed of 44.44

[57] The distance between Cyprus and Philistia (*ca*. 200 NM) is significantly less than that between Crete and Egypt (*ca*. 300 NM).

[58] For 60% of this distance, she was under sail, under oar, or both; the rest of the time she was towed. The resulting average distance traveled per day (*i.e.*, *ca*. 40 NM) is well below the average for single vessels in the ancient eastern Mediterranean (*i.e.*, *ca*. 74 NM/day; see p. 149 above, Table 11A). This discrepancy is largely due to the fact that for six out of the ten days the Kyrenia II was at sea for ten daylight hours or less. Sailing through a few nights might have cut the length of the voyage in half.

NM/day, or, 1.85 knots.[59] As calculated earlier (see Chapter 2, p. 70), the overland journey from Cilicia to southern coastal Canaan alone would probably have taken about 50 days. This same trip could have been completed by sea in less than a week.

H. Conclusions

At the beginning of this chapter the following question was posed: were maritime technology and seamanship of the Late Bronze and Early Iron Ages commensurate to the task of transporting large numbers of people across great distances? The available evidence strongly suggests that they were. The logistical parameters were as follows:

- First, cargo weight would not have been a constraining factor (see Section B, pp. 127–32, Table 7).
- Second, cargo ships were substantial in size, being typically 15–20 m long and *ca*. 4 m in beam, while pentekontors were *ca*. 30 m in length and also *ca*. 4 m in beam (see Section C, pp. 132–35, Table 8).[60]
- Third, ships could carry an average of 50 passengers (see Section D, pp. 135–39, Table 9).
- Fourth, certain coastal city-states were able to muster fleets of upwards to 100 ships (see Section E, pp. 139–42, Table 10).
- Fifth, fleets of ships could travel approximately 50 NM/day, or, at a speed of *ca*. two knots (see Section F, pp. 148–49, Table 12).

[59] A route via Crete and Cyprus, or Crete and Egypt, would not have been significantly longer in terms of time or distance. I have focused on the Greek mainland-Rhodes-Cyprus-southern coastal Canaan route because of the textual (ARE IV §64; see also Chapter 1, pp. 33–34) and archaeological data (see Chapter 2, pp. 72–74) favoring the movement of Sea Peoples along this path.

[60] The use of two types of ships in a seaborne migration (or evacuation) is attested in a *ca*. 690 wall relief from Sennacherib's palace at Nineveh (Layard 1849:Pl. 71): round-hulled troop transports and sleeker, ram-fitted warships ferry fleeing Tyrians away from their soon-to-be besieged city, destined perhaps for Iadnana (= Cyprus; see Chapter 6, p. 182, n. 43).

- Sixth, the migration would most likely have taken place during the summer so as to profit from favorable winds (see Section G1, pp. 150–52).

- Seventh, the migration route, regardless of the point of departure, most likely followed the generally counterclockwise movement of sea traffic in the eastern Mediterranean (see Section G3, pp. 153–56).

Therefore, a Late Bronze Age coastal polity, for example, could transport, if necessary, 5,000 people (100 ships x 50 passengers) and their supplies across considerable distances in a relatively short amount of time. This figure may represent only half of the incoming Philistine population (see Chapter 4, p. 123), thus raising the probability that there was a continuous arrival of immigrants over time. Indeed, later historical population movements by sea (see Chapter 6, p. 187) and recent social scientific theory on migration (Anthony 1990:903) strongly suggest that migration was an ongoing process (cf. "stream migration"). The "snapshot" impression of history generally produced by ancient texts and archaeology — the primary data concerning the Philistine migration — tends to compress processes. Therefore, the next two chapters are devoted to a long-term perspective on the history of migration.

Chapter 6. Seaborne Migration in Ancient Mediterranean History

Throughout history people have migrated, often by sea, for many reasons, but mostly to improve their economic and political situations. At the end of the Geometric Period, disaffected *oikistai* led groups of Greek colonists westward in order to settle new lands pregnant with agricultural and mercantile possibility. In the ninth and tenth centuries CE, aristocratic and ambitious *Landnamsmen* headed the Viking settlement of the North Atlantic, again in search of greater economic opportunity and political latitude. During the seventeenth century CE, discontent Christian idealists were among the first in what was to become the greatest ongoing seaborne migration of all time — namely, the peopling of the Americas.

For each of these migrations and settlements there is a written record — however late and incomplete it may be — a feature almost completely lacking in the case of the Philistines. The combination of text and archaeology in the reconstruction of past events is far preferable to history writing that relies solely on one or the other. For this reason it should be beneficial to examine better-understood demographic processes that are outwardly similar to the Philistine migration. Unquestionably, there were significant logistical differences among the various seaborne migrations mentioned above — for example, the arduous passage from Bergen to Greenland bears little resemblance to the comparatively pleasant voyage from Enkomi to Ashdod — however, certain consistencies may still apply. These might include the following: reasons for migration; demographic profile of the migrating population; preparations made in advance of

departure; organization of the community upon arrival; and nature and degree of interaction with the indigenous population.

In order to minimize the differences imposed by time and place, the focus below will be upon the early Greek colonization (*ca*. 750–700) of Magna Graecia and Sicily. Although removed by some 500 years, the maritime and geographic factors of this seaborne migration approximated those of the Philistines' migration. As for the economic, social, political, and demographic circumstances, the levels of similarity will emerge from the proceeding discussion.

A. The Greek Colonization of Magna Graecia and Sicily (Map 13)

During the period *ca*. 750–500 numerous Greek cities established colonies throughout the Mediterranean and Black Seas.[1] Since this time ancient writers and modern scholars have pondered the reasons behind the Greek colonizing movement. In terminology borrowed from migration studies within the social sciences (see Chapter 7, pp. 191–92), these reasons can be categorized as either "push" or "pull" factors. For the Greek colonization of, and migration to, the west, commentators most frequently invoke the following three reasons: 1) land-hunger, which is primarily a push factor; 2) trade, which is a pull factor; and 3) internecine strife, which is both a push and a pull factor.

[1] The literature on Greek colonization is voluminous; therefore, the following is but a sample of the most comprehensive treatments of the subject: Bérard 1960; Dunbabin 1968; Boardman 1999. See also these edited collections: Boardman and Hammond 1982; Descœudres 1990; Tsetskhladze and de Angelis 1994; and the proceedings of the international symposium entitled "Incontro di studi sugli inizi della colonizzazione greca in Occidente (Napoli-Ischia, 29 febbraio-2 marzo 1968)" published in *DdA* 1969/3.1–2.

Certain classical authors leave us with the impression that colonies were founded because of population pressure at home brought on by drought (aÙcmÒj) and famine (limÒj).[2] For most of the century this explanation has been, broadly speaking, the accepted wisdom concerning the reasons for Greek colonization (see *inter alios* Gwynn 1918:89; Bérard 1960:60; Snodgrass 2000:10; A.J. Graham 1982:157; Camp 1979:410–11; Ruschenbusch 1991).[3]

Certain characteristics of the early Greek colonies provide support for the "land-hunger" theory: many of the eighth-century colonies in Sicily (*e.g.*, Naxos, Leontini, Syracuse, Megara Hyblaea) are located in or near rich agricultural regions,[4] and the intra-mural city was often apportioned systematically, which suggests that arable land in the

[2] Because of a crop shortage, one tenth of the male Chalcidian population was dedicated to Delphian Apollo (Strabo [Str.] 6.1.6; see also Herakleides Lembos *de reb. publ.* 25). Along with others from Chalcis, this human tithe later founded Rhegium. Seven years of drought compelled the Therans to consult the Delphic oracle, who advised them to establish a colony in Libya (Hdt. 4.151). In order to expiate his slaying of Aktaion, and thereby end the drought and famine besetting Corinth, Archias — again following the advice of the oracle — left Corinth and founded Syracuse (Plutarch [Plu.], *Moralia* 773A–B). According to Plato, the ideal population size was maintained by sending out the human excess to colonize (*Laws* 707e, 740b–e; see also Th. 1.15.1). Drought and famine are frequently invoked to explain the collapse of the Mycenaean and Hittite kingdoms and the subsequent *Wanderungen*, including those of the Philistines and other Sea Peoples (see Chapter 7, p. 209). For a useful overview of the relevant literature, see Drews 1993, pp. 77–84.

[3] The increased number of late eighth-century burials in Attica and the Argolid has been viewed as evidence of a population explosion (Snodgrass 1977:11–18; 1983:169–71; 2000:18–20), irrespective of natural calamities; however, these two regions only began establishing colonies at the end of the seventh century, during which time the number of burials, conversely, decreased (Osborne 1989:314; Cawkwell 1992:289). Furthermore, the increase in burials towards the end of the eighth century probably has more to do with whom was being interred than with the overall size of the contributing population. From the Early Geometric to the Late Geometric (LG) I (= 900–735) only 5–10% of all burials are sub-adults; whereas during the LG II (= 735–700) sub-adults outnumber adults, and, by the end of the period, cemeteries are almost completely devoted to infant and child burials (I. Morris 1987:61–62, 219, Appendix 1; see also Osborne 1989:299–300).

[4] Both Ephorus (*FGH* 70 F 137a, b) and Strabo (6.2.2) note the agricultural allure (¢retÁj gÁj) that the island had for the early settlers. Aristotle implies that because of the richness of the Plain of Catane, it was necessary to restrict the pasturing time of sheep (*Historia Animalium* III.17). According to Diodorus Siculus (Diod. Sic.), Sybaris in southern Italy grew rapidly because of the "fertility of the land" (di¦ tÁn ¢retÁn cèran; 12.9.1–2). Please note, translations of the ancient Greek authors are taken from the *Loeb Classical Library* series (Cambridge, MA: Harvard University Press).

surrounding countryside, or *chora*, was similarly distributed among the early colonists.[5] Even at Pithekoussai (see below), which has often been regarded as a trading post (ἐμπόριον) rather than as an agriculturally-based colony (ἀποικία; see Ridgway 1973:18–23; Greco 1994 for discussion and further references), a number of farmsteads that date to the period of the initial Greek settlement have been found scattered about the island (Caro 1994; Gialanella 1994; Coldstream 1994:50, n. 7, fig. 4.1).

The theory that the initial colonists were drawn westward by trade[6] — otherwise described as "trade before the flag" — was first formulated by Alan Blakeway (1932/33:202; followed by Lepore 1969; Coldstream 1977:221; A.J. Graham 1982:159; Osborne 1998:268; Boardman 1999:162). Two features of the Greek colonization in the west support the "trade" theory: 1) the location of the colonies, namely, their prime position vis-à-vis maritime trade (Boardman 1999:162); and 2) the period of "pre-colonial" contact (*ca*. 800–750), evidenced by the sporadic appearance of imported Euboean skyphoi at native sites in Campania, Latium Vetus, Etruria, and Sicily (Coldstream 1977:223–24; Ridgway 1992:129–35; see also A.J. Graham 1990).

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[5] The earliest evidence for the division of farmland comes from Metapontum, which was not founded until the mid-seventh century. Longitudinal roads or drainage canals divided the territory between Bradano and Basento, perhaps as early as the beginning of the sixth century (Adamesteanu 1973), and, by the second half of the fourth century, the land-plat system was well in place (Carter 1990:425–30, fig. 9). Simple, one-room houses set within a regular street system, which date to the period of the initial, eighth-century Greek settlement, have so far been excavated at Megara Hyblaea (Vallet, Villard, and Auberson 1976:fig. 57; Gras 1984/85) and Syracuse (R.J.A. Wilson 1982:87). For the textual evidence pertaining to the distribution of land among colonists, see p. 171 below. For a comprehensive discussion of the archaeological evidence for Greek colonial city-planning in the eighth and seventh centuries, see Métraux 1978, pp. 106–51.

[6] A growing number of scholars now emphasize the generative role of mercantilism in the settlement of Sea Peoples throughout the eastern Mediterranean (Sherratt and Sherratt 1991:373–75; Sherratt 1992:316–47; Bikai 1992:137; 1994:32–33; Artzy 1997:1–16), and particularly of the Philistines in southern coastal Canaan (Sherratt 1998:292–313; Bauer 1998:149–67). For a refutation of this heterodox view, see Barako 2000 and Chapter 7, pp. 199–200.

Pithekoussai, the earliest Greek settlement in the west (*ca*. 750), is in many ways the parade example for the "trade" theory. First, the site is located on the island of Ischia outside the Bay of Naples, and its acropolis (Monte di Vico) is situated on a promontory flanked by two natural harbors (see Map 14; Ridgway 1992:41, fig. 5). Second, imports from throughout the Greek and Phoenician worlds — including fragments of Euboean chevron skyphoi (Ridgway 1981) — have been found at the site (Docter and Niemeyer 1994). And third, near the acropolis the excavators uncovered a metalworking complex (Buchner 1971; Klein 1972), where iron ore from Elba (Buchner 1969:97–98) and silver ore, possibly from Sardinia, was worked (Ridgway 1992:91–100).

Most authorities on the western Greeks grant trade an important, but not the primary, role in colonization (*contra* Blakeway 1932/33). They recognize, however, the essential part "pre-colonial" mercantile contacts played in laying the groundwork for later Greek settlement (*e.g*., Cawkwell 1992:296; Boardman 1999:262). During this "pre-colonial" period, Euboeans and other Greek merchants gathered valuable information concerning the sea routes, anchorages, natural resources, and agricultural potential of the regions they would soon colonize. Although trade was undoubtedly an important aspect of the early colonial economy, it should not be regarded as the *raison d'être* (A.J. Graham 1982:159).

A third theory, which holds that internecine strife in the nascent Greek city-states provided the catalyst for colonization, has gained support in recent years (Dougherty 1993:16–18; 1998:182–86; Holloway 1991:48–49; Snodgrass 1994:2; Crielaard 1995:125). According to this scenario, élites, whose political ambitions were checked,

often by the dictates of primogeniture, found an outlet for opportunity and glory in the colonization movement.[7]

The "internecine strife" theory — like the "land-hunger" theory to which it is typologically related — is also based primarily on a reading of the ancient authors. There are numerous examples in ancient Greek literature from the time of Homer (*i.e.*, *Il.* II.661–67) through the Classical Period (*e.g.*, Hdt. 1.164–68, 5.42; Paus. 7.2.1; Th. 2.102.5–6) of such political rivalries that resulted in settlement abroad.[8] Many of these stories involve bloodshed, which can only be expiated by the community's expulsion of the malefactor, that is, the *oikist*, accompanied by his band of loyal followers (Dougherty 1998:182). For Greek colonization in the west, however, only the foundation accounts of Syracuse (see p. 160, n. 2 above)[9] and Taras/Tarentum (Str. 6.3.2–3) conform in certain details to this paradigm.

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[7] This reconstruction of events calls to mind the popular notion that southern coastal Canaan was settled and ruled by a Philistine military aristocracy in the twelfth century (see Chapter 3, p. 79, n. 2 and Chapter 7, pp. 196–98). The evidence in the case of the Philistines is both textual and archaeological: according to the Hebrew Bible, the five "lords" or "rulers" (*sərānîm*) of the Philistines at times functioned as military leaders (*i.e.*, I Sam. 7:7, 29:2); and the preponderance of Philistine fine ware and Canaanite plain ware in the ceramic assemblages at Pentapolis sites may indicate that Aegean-style pottery was being produced locally for a minority Philistine élite (A. Mazar 1985b:106). The subsequent discovery of non-élite items, such as Aegean-style cooking jugs and loomweights in the Philistine material culture (see Chapter 1, pp. 28–30), suggests, however, greater socioeconomic diversity in the intrusive population (Barako 2000:523–25). As to why Philistine élites — if one subscribes to the aforementioned paradigm — should have decided to settle overseas, we are on much shakier ground in the absence of the type of texts that are available for the Greek settlement (see below).

[8] This same phenomenon, but on a smaller geographical scale, is well known from ethnographic studies in Africa and the American Southwest (Anthony 1997:23). In his study of the "internal frontiers" embedded in African society, Kopytoff describes the tendency of social groups to fissure and segment (1987:18–20). Internecine struggle brought on by the hierarchical limitations imposed by a gerontocracy is cited as a major catalyst for this form of adaptive migration. "Disgruntled secondary lineages, low-status clans, or losing factions" were the social units most commonly on the move among the Hopi in the American Southwest (Schlegel 1992:389). By drawing on ethnohistory and settlement archaeology, Fox defines a similar recurrent process in the social, cultural, and political development of various Postclassic Maya groups in southern Mesoamerica (1987; 1989): fractious segementary lineages led by military élites joined larger confederacies in the face of external threat, and upon dissolution, migrated to distant regions (1987:268). For the possibility that a similar process contributed to the Philistine migration, see Chapter 7, pp. 210–11.

[9] Note also Thucydides, who reports that Chalcidians from Zancle, along with political exiles (*i.e.*, the Myletidae) from Syracuse, colonized Himera in 648 (6.5.1).

Further support for the "internecine strife" theory is adduced from the belief that disgruntled aristocrats and not starving peasants — as the "land-hunger" theory implies — would have possessed the authority and means to carry out a long-distance seaborne colonization (Holloway 1991:48–49).[10] Even Battus, the disenfranchised scion of a Cretan ruler, pleads insufficient means when informed by the Delphic oracle that he is destined to found a city in Libya (Hdt. 4.155).

"Extranecine" strife is the reason given by Strabo (6.1.14) and Athenaeus (*FGH* 566 F 51), who cites Timaeus and Aristotle (*FGH* 584), for the foundation of Siris. Driven from Ionia by Lydians during the reign of Gyges (*ca*. 680–652), the inhabitants of Colophon migrated to Sicily and there settled Siris.[11] Otherwise, classical authors do not regard the threat of foreign invasion as being among the catalysts for the establishment of the numerous overseas colonies during the early period of Greek settlement in the west (*ca*. 750–600).[12]

What, then, is to be made of this welter of data and speculation relating to the Greek settlement of the west? How might one harmonize the compelling evidence for all three of the prevailing theories (*i.e*., "land-hunger," "trade," "internecine strife")? The solution may lie in a less monolithic conceptualization of the Greek settlement informed

[10] This same type of argument is valid for the Philistine migration in that only a well-organized group that emerged from an urban background could have founded sites as complex as those of the Philistine Pentapolis (A. Mazar 1990:313; Barako 2000:524).

[11] An external military threat figures in other accounts concerning the foundation of Greek colonies from Asia Minor. According to Herodotus, both the Phokaians and Teians fled Ionia before the Persian army, which was led by the Median general Harpagus (*ca*. 540), and settled, respectively, in southern Italy at Elea and in Thrace at Abdera (1.164–68).

[12] During the nineteenth and beginning of the twentieth century CE it was widely held that there had been an incursion of foreign peoples — particularly the Dorians — into the Aegean homeland of the Philistines and other Sea Peoples. This Dorian invasion set the Sea Peoples into motion and thereby produced a chain reaction of invasion and migration that enveloped the entire eastern Mediterranean (for references, see Drews 1993:53–72; Silberman 1998). For a discussion of the inadequacy of the culture-historical approach as it relates to the role of the migration in the collapse of the Late Bronze Age, see Chapter 7, pp. 190–93.

by the following two notions: 1) different settlements were founded for different reasons; and 2) individual settlements were sometimes founded for a combination of reasons. In both instances geography provides an important clue (Morel 1984:139). For example, Leontini in Sicily is situated six miles inland in a rich alluvial plain, indicating that it was primarily an agricultural settlement (Boardman 1999:170). Most Greek settlements in Magna Graecia and Sicily, however, were ideally suited for both agrarian and commercial purposes: sites such as Syracuse,[13] Naxos, and Taras possessed both good anchorages and access to fertile farmland.

Archaeology has shown that Pithekoussai functioned as both an agricultural and a mercantile settlement (Coldstream 1994:50–51).[14] Moreover, it is possible that political struggle in the homeland was also a catalyzing force; however, the texts are silent on this matter[15] and archaeology is ill-equipped to reconstruct such epiphenomena. Finally, it is quite possible that one factor, combined with and compounded by another, compelled the Greeks to colonize. In this way, a drought might have exacerbated the already strained relations that existed among the military and political élites in the Greek mother cities.[16]

[13] According to Strabo, Syracuse prospered "on account of the fertility of the land" (di¦ t¾n tÁj cèraj εÙdaimon.an) and the "natural excellence of its harbor" (l imšnwn eÙf u.an; 6.2.4).
[14] According to Niemeyer's typology of Phoenician and Greek expansion (1990:483–89), Pithekoussai has characteristics of both: following the Phoenician model, it functioned as a "port of trade," situated geographically and structurally between the sources of raw materials in the central Mediterranean and the market-oriented economies of the eastern Mediterranean; following the Greek model, Pithekoussai appears to have developed a *chora*, as indicated by the discovery of eighth-century Greek farmsteads scattered around the island (see p. 161 above). Indeed, close Euboean/Phoenician interaction at Pithekoussai is indicated by the following discoveries: imports from Phoenician sites (particularly Carthage) at Pithekoussai and vice versa (Docter and Niemeyer 1994:104–12); a shared smelting technology, as evidenced by the appearance of the same distinctive tuyères at Toscanos (a Phoenician settlement established at the end of the eighth century on the southern coast of Spain), Carthage, and Pithekoussai (102–3); and a fragment of a locally made Early Protocorinthian kantharos incised with two undecipherable Phoenician characters (Buchner and Ridgway 1993:289–90, Pls. 95, 140:232-1).
[15] Strabo does relate that the Eretrians and Chalcidians, once they had settled Pithekoussai, left the island as the result of a quarrel (5.4.9).
[16] It has been suggested that such a confluence of crises led to the split and subsequent migration of the Hopi in 1906 (Schlegel 1992:389). For a brief discussion of the "multiplier effect" in the eastern Mediterranean-wide collapse of Late Bronze civilizations, see Chapter 7, p. 208.

1. Certain Features of the Greek Colonization According to the Ancient Texts

As stated at the outset of this chapter, the justification for this examination of Greek settlement in the west is the existence of a textual documentation — however problematic it may be — to complement the archaeological data pertaining to the movement of a population by sea. To be sure, these texts should be approached warily for many reasons, chief among which are: 1) the principal authors describe events at a remove of from 300 (*i.e.*, Herodotus, Thucydides) to 700 years (*i.e.*, Strabo); and 2) the political heirs of the colonial founders were keenly aware of the power of their narrative legacy; as such, certain details were prone to manipulation and embellishment (Osborne 1998:255–56). Notwithstanding these historiographical obstacles, certain details might still be drawn out of the texts, particularly information that is largely incidental to the story and, therefore, presumably less susceptible to the distorting effects of time and political agenda (Burckhardt 1998:5).

We already encountered many of these texts in the preceding discussion of the causes of Greek colonization. Here, the focus will be upon the organizational and logistical aspects of Greek migration and settlement overseas. To start with, the colonizing party was led by an aristocratic *oikist*, or *oikistai*, who often had been ostracized from the mother city for some wrongdoing.[17] Expiation was achieved through

[17] The following are a few of the more illustrative foundation accounts: Archias, a member of the Bacchiad oligarchy, led a group of Corinthians to Syracuse (Plu. *Moralia* 773A–B); Lamis shepherded a company of Megarians first to a site near Trotilon, then to Leontini, and, finally, to Thapsos where he died (Th. 6.4.1); Dorieus, second-in-line to the Spartan throne, guided a band of his countrymen in a failed attempt to establish a colony in Libya (*ca*. 514) before succeeding at Heraclea (Hdt. 5.42–47); and Battus, who was of noble Cretan stock, eventually settled at Cyrene with a party from Thera (4.156–58). For further accounts

consultation of the Delphic oracle, who typically advised the *oikist* to leave the *locus sceleris* and to settle in a foreign land (see p. 160, n. 2; Forrest 1957).[18]

A few texts hint at a hierarchy, based primarily on the ownership and charge of ships involved in the expedition, subordinate to the *oikist*: Telephos, the lover and ultimately the murderer of Archias, was put in command of a ship (nèej) during the voyage from Corinth to Syracuse (Plu. *Moralia* 773b); Phillipus of Croton, who sailed with Dorieus to Sicily, equipped a trireme and manned it at his own expense (Hdt. 5.47.1);[19] and four Spartans (*i.e.*, Thessalus, Paraebates, Celeas, Euryleon), who also accompanied Dorieus, were killed along with all their company (partˆstÒoi) in a battle against the Phoenicians and the people of Egesta (5.46.1).

The foundation of a colony was frequently the result of a joint venture between some combination of mother cities and already established colonies.[20] The meager amount of information pertaining to the size of colonizing parties indicates that numbers were, at first, small: 1,000 colonists took part in the foundation of Leucas (Pseudo-Scylax 34, *GGM* I.36); 200 at Apollonia in Illyria (Stephanus Byzantinus *s.v.*

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and a discussion of the religious, civil, and military role of the *oikist* in the foundation of Greek colonies, see Métraux 1978, 18–28.

[18] Recently, Schäfer-Lichtenberger has convincingly argued that the divine name פתגיה from the royal dedicatory inscription found at Tel Miqne (Gitin, Dothan, and Naveh 1997) should be read as "Pytogayah," that is, "the goddess Gaia who was worshipped in Delphi (= Pytho)" (2000:89–91). The evidence from texts, archaeology, and the very nature of the oracle (for references, see Schäfer-Lichtenberger 2000) shows that the first chthonic presence at Delphi (originally called Pytho) was Gaia and not Apollo. Just as Greek settlers of the Geometric and Archaic Periods first petitioned and then gave thanks to Apollo for a successful colonizing venture, the Philistines might have called upon Pytogayah, as the dedication of her temple at Ekron distantly suggests.

[19] According to Wallinga (1993:20, n. 23), this text reflects the survival of the *naukraric* office, whereby private citizens of means provided fully-manned ships to the state.

[20] Eretrians and Chalcidians settled Pithekoussai (Str. 5.4.9); pirates from Cumae led by Perieres, and Chalcidians under Crataemenes, along with other Euboeans, founded Zancle at the Straits of Messina (Th. 6.4.5); Chalcidians led by Antimnestus assisted Chalcidians from Zancle, who were joined by refugees of the First Messenian War, in founding Rhegium (Str. 6.1.6; Antiochus *FGH* 555 F9); Archias, enroute from Corinth to Syracuse, picked up Dorians who had abandoned the Megaran colony at Zephyrion (= Cape Bruzzano; Str. 6.2.4); Gela was founded by Rhodians, under the leadership of Antiphemus, and by Cretans led by Entimus (Th. 6.4.3); for the joint colonizing venture at Himera, see p. 163, n. 9 above.

"Apollonia"); and two pentekontors (= fifty-oared galleys) — therefore no more than 200 persons[21] — transported the Theran colonists to Platea off the coast of Libya (Hdt. 4.153.1, 4.156.2).

Regarding the type of ships used by Greek colonists,[22] again, Herodotus is the primary source of information. In the distant past, before the period of Greek colonization proper, Theras and a group of Minyae left Lacedaemon aboard three triakontors (= thirty-oared galleys) to settle on Thera (4.148.3). Centuries later, the Phokaians, in the face of Persian oppression, put their women, children, and all their moveable property (œpipla p£nta) aboard pentekontors and fled to nearby Chios before they ultimately sailed to a previously-established Phokaian settlement (*i.e.*, Alalia) on Corsica (1.164.3–166.1).[23]

Evidence for a system of recruitment survives only from those accounts pertaining to the Theran colony at Cyrene. According to Herodotus, all seven villages on Thera were to be represented in the colonizing party, and its members were to be chosen by lots drawn among brothers (4.153.1). A fourth-century inscription (*SEG* IX.3), which purportedly preserves the oath taken by Cyrene's founders some three 300 years prior, describes the system in greater detail: one son was to be conscripted from each family; all who sailed were granted equal standing according to family (™p' t©i ‡sa[ik]a' t©i Ðmo.ai plenkat¦ tÕn oÍkon; IX.3.27–28); all who took part were to be in the prime of their life

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[21] This information renders somewhat superfluous the various attempts to emend the text of Herodotus 4.153 to read "200 men" by inserting a numerical letter (Σ) after ¢ndraj (for the most recent discussion with references, see Cawkwell 1992:290–99).
[22] For a more thorough discussion of seagoing ships during the time of the early Greek settlement overseas based on textual, pictorial, and archaeological evidence, see Section B, pp. 180–185.
[23] Following their naval defeat before a combined force of Carthagians and Tyrrhenians, the surviving Phokaians once again took their women, children, and all the possessions that their ships could carry (t¾n ¥llhn kt´sin Óshn oŒa.te ™g.non toa..nšej sfi ¥gein) and fled to Rhegium (Hdt. 1.166.3).

(toýj ¹bî ntaj; 29); and any free man of Thera, who wished to join the expedition, could do so.

Fortunately, classical authors provide greater detail regarding the conditions faced by the initial settlers upon their arrival. Relations between the Greek colonists and the indigenous peoples of Sicily and southern Italy are cast in a decidedly antagonistic light: Archias drove the Sicels off Ortygia island before he founded Syracuse (Th. 6.3.2); Chersicrates, whom Archias dropped off at Corcyra with an expeditionary party, displaced the native Liburnians who inhabited the island (Str. 6.2.4); Chalcidians from Naxos drove off in battle the local Sicels prior to settling at Leontini and Catane (Th. 6.3.3); Samians and other Ionians expelled the native inhabitants from Zancle (6.4.5); and the various accounts pertaining to the foundation of a colony at Taras describe a state of war between the Greeks and the "barbarous" Iapygians (Str. 6.2–3, 5; Ephor. *FGH* 70 F 216; Antiochus *FGH* 555 F 13).[24]

Regarding the Greek presence in Sicily in general, Strabo reports that although the local population was prevented from maintaining settlements along the coast, the Greeks were unable to drive them (*i.e.*, the Siceli, Sicani, Morgetes) out of the interior, where they continued to live up until the author's day (6.2.4). Both Strabo (6.2.2) and Ephorus (*FGH* 70 F 137a, b) note the "weakness" (oÙdšneian) of the native population on

[24] For Greek/native relations at overseas colonies elsewhere in the Mediterranean, consider also the following accounts: Pylians wrested Colophon from the local population through the use of "overwhelming force" (b.hnØpšroplon) and by virtue of "overweaning hubris" (¢rgal šhj Ûbioj; Str. 14.1.4 citing Mimnermos in a fragment from the *Nanno*); and, three years after settling by the Cinyps River in Libya, Dorieus, in a reversal of roles, was driven out by the Macae, the Libyans, and the Carthagians (Hdt. 5.42.3).

Sicily as an enticement for prospective Greek colonizers.[25] But, in a rare instance of Greek/native bonhomie, the Sicel king, Hyblon, granted Lamis' beleaguered band of Megarans the land upon which Megara Hyblaea was later established (Th. 6.4.1). Peaceful relations must have existed also at Sybaris, where the city's rapidly increasing population was attributed in part to the practice of "granting citizenship to many aliens" (metadidÒntej tÁj polite.aj ™pˆ tosoàto prošbhsan; Diod. Sic. 12.9.2) — "aliens" here meaning, presumably, the indigenous inhabitants.

According to the ancient texts, colonizing parties were made up of men who took native brides in their adoptive homelands.[26] Herodotus (1.146.2–3) and Pausanias (7.2.6) record the most violent form of this practice, which involves the concomitant slaughter of the male population, in their descriptions of the Greek colonization of Miletus. Although it is indirect in nature, the richest evidence pertaining to Greek/native intermarriage revolves around the Theran colony at Cyrene. Based on the foundation accounts, which clearly relate that the first colonists were male (Hdt. 1.153; *SEG* IX.1.1–3), one must assume either that the Theran men took Libyan brides, or that Greek women joined subsequent colonizing parties.[27] The following, external, textual data lend credence to the former assumption: in Pindar's Ninth *Pythian Ode* (103–25), Greek suitors vie for the hand of a Libyan nobleman's daughter; in Callimachus' *Hymn to Apollo* (2.85ff.),

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[25] Similarly, the waning of Egyptian hegemony in southern coastal Canaan during the first half of the twelfth century might have served as a pull factor during the Philistine migration and settlement (see Chapter 7, p. 213, n. 26).

[26] Because of the extraordinary political situation, the Phokaians' peregrination, which included women and children (Hdt. 1.164.3–166.1; see p. 168 above), should not be regarded as normative for Greek colonization.

[27] Recent studies of migration show that among expanding agricultural communities, young males comprise the initial offshoot of migrants (*e.g.*, Simkins and Wernstedt 1971:84–85). As the migration stream continues, the age and sex ratios balance out to the point that natural increase supplants the need for further migration (Lefferts 1977:38–39; Anthony 1990:905).

warriors of Ares dance with golden-haired women of Libya; and, according to Herodotus (4.186), the women of Barca and Cyrene observe dietary taboos similar to those kept by Libyans and Egyptians.

As briefly discussed above (see p. 161, n. 5), there is some archaeological evidence for the distribution of land among the initial Greek colonists. To this excavation and survey data may be added the following, more compelling, textual data: in the foundation decree of Brea, a fifth-century Athenian colony in Thrace, ten "distributors" (gewnÒmoi) — each chosen from one of the ten tribes of Athens — were charged with the allotment of land (Tod 1951:88–90, no. 44); and Athenaeus, citing Archilochus, recounts the story of the Corinthian Aethiops, who, enroute to Syracuse as a member of Archias' colonizing party, sold his parcel of land for the price of a honey cake (4.167d).[28]

The classical sources, then, leave us with a reasonably consistent account of Greek colonization, the general features of which may be described as follows: 1) political and/or economic stress in the mother city impels the *oikist* to settle overseas, generally in a sparsely-inhabited and fertile land; 2) the *oikist* leads a few hundred male colonists, all of whom set sail aboard pentekontors; 3) some time after the Greeks' arrival, the indigenous population is driven off, except perhaps for some or all of the native women, with whom the colonists intermarry; and 4) land is distributed among the colonists in such a way as to reflect tribal divisions in the homeland.

To be sure, the texts give further details about Greek settlement overseas, but they are not as relevant for a reconstruction of the Philistines' seaborne migration. A

[28] At Cyrene, colonists who came later were also promised land (Meiggs and Lewis 1969:no. 5, ll. 30–33; see also Hdt. 4.159.2–4).

consideration of the implications of the Greek colonization for the Philistine migration appears in footnotes (nn. 2, 6–8, 10, 12, 18, 25) and at the conclusion of this chapter following the next two sections. The first section examines the archaeological evidence parallel to the texts we have just reviewed, for Greek settlement in southern Italy and Sicily during the latter half of the eighth century. The second is concerned with Greek seafaring capability, as it pertains to the logistics of Greek colonization, at the end of the Geometric Period (*ca*. 750–700).

2. Archaeological Evidence for Eighth-Century Greek Settlement in Magna Graecia and Sicily

For a reconstruction of the events surrounding early Greek colonization in the west there is a rich body of archaeological evidence to complement the textual data. Although numerous Greek colonies have been excavated in southern Italy and Sicily,[29] the focus here will be upon Pithekoussai, where there has been the widest exposure of eighth-century strata — that is, the period of the initial Greek settlement.

A few questions, in particular, relating to the archaeological data will be addressed: 1) what is the nature of the evidence for the appearance of an intrusive population?; 2) is an historical reconstruction of Greek colonization based on the archaeological evidence compatible with the textual narrative discussed above?; 3) were indigenous peoples absorbed into the Greek population at colonial sites?; and 4) what can be said about the size of the migrating population? These questions lie at the heart of our

consideration of the Philistine seaborne migration. Again, the implications each migration has for the other will be postponed until the end of the chapter.

The site of Pithekoussai is located on a small island (approximately 8 × 5 km) less than 10 km off the coast of Italy just outside the Bay of Naples. According to Strabo, Pithekoussai was founded by Eretrians and Chalcidians, both of whom prospered on account of the fertility of the land and goldsmithing. Soon thereafter, however, they left the island because of internal dissent and, later, earthquakes (5.4.9). Livy reports that the Chalcidian fleet (*classis*) stopped at Pithekoussai before settling on the mainland at Cumae (8.22.5–6). Excavations throughout the island, but particularly in the northwest corner, have revealed an extensive and multifaceted Greek settlement, which flourished during the second half of the eighth century.[30]

The acropolis was established atop the Monte di Vico promontory, a *ca*. 600-ha plateau, flanked by fine natural harbors and separated from the rest of the island by the Valle di San Montano, wherein the colony buried its dead (see Map 14). Unfortunately, because the acropolis is heavily eroded, no undisturbed strata of Pithekoussai's main settlement have been excavated. Surface survey, however, indicates that the *ca*. 75-ha acropolis was thickly settled at an early date, as evidenced by the discovery of eighth-century pottery across all of Monte di Vico (Buchner 1971:67). The excavation of a large dump (referred to as the "Scarico Gosetti") to the southeast of Monte di Vico provides further interesting details about the early Greek colony (Trendall 1967:30). Most

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[29] Good summaries of recent excavation results appear in *Archaeological Reports* (see R.J.A. Wilson 1982; 1988; 1996; Ridgway 1995). A useful overview of earlier archaeological research may be found in Boardman (1999:161–89, 292–94).

[30] Almost continuous excavation since 1952 at Pithekoussai has so far produced only one final report (Buchner and Ridgway 1993); however, preliminary reports (*e.g*., Buchner 1971), books (*e.g*., Ridgway 1992), edited collections (*e.g*., d'Agostino and Ridgway [eds.] 1994), and innumerable articles about the site make known most of the results not contained in *Pithekoussai I*.

importantly, no pre-contact, Iron Age, native pottery was found in the dump — nor in any other excavation or survey at Pithekoussai — which strongly suggests that the first Euboean settlers chose an uninhabited site for the establishment of their colony (Buchner 1971:65; Ridgway 1992:85–86).[31] The majority of the pottery was locally made Greek (81% of 10,000 painted sherds) with smaller amounts of Corinthian (16%) and Euboean imports (3%; Ridgway 1992:89).[32]

Southeast of the acropolis dump on the side of the Mezzavia hill in the Mazzola area, the excavators uncovered a metalworking quarter, which was in use from the middle of the eighth to the beginning of the seventh century (Buchner 1971; Klein 1972; Ridgway 1992:91–96). Three nuclei of activity, scattered across an area approximately 500 m in length, have been excavated so far out of an industrial complex that may have originally covered the entire northeast face of the Mezzavia ridge (Buchner 1971:67). The discovery of numerous items related to metalsmithing — *e.g.*, an iron bloom (Klein 1972:fig. 5), bronze scrap, a fragment of a bronze ingot, remains of forges (fig. 4), possible anvils, an unfinished fibula (Buchner 1971:66, fig. 7), and a bronze-bound, lead, disc weight — in and around the four main structures of this industrial complex leave little doubt as to the area's function. Of added interest is a rim sherd from a locally made LG krater found beneath a wall of Structure II, which bears the following fragmentary potter's signature: ". . . inoj m'™po.s.[e]" (". . . –inos made me"; Buchner 1971:67, fig. 8).

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[31] There was, however, a native village at Castiglione, a little less than four kilometers to the west of Pithekoussai (Buchner 1937:81–86).

[32] In the cemetery (see below), 70.7% of the LG I pottery was locally made and 29.3% imported. By the LG II period, 48% of a much larger quantity of pottery was locally made and 52% imported (Ridgway 1982:72; 1992:Table 3).

Pithekoussai's greatest contribution by far, however, to a study of early Greek colonization is the excavation and publication of a small portion of the settlement's extensive necropolis (Buchner and Ridgway 1993). Over 1,300 graves, of which a little over half appear in *Pithekoussai I*, were excavated in an area that represents no more than 10% of a cemetery that covered *ca*. 50,000 m^2 of the Valle di San Montano (Ridgway 1992:46). Although the cemetery was in continuous use for approximately 1,000 years, as many as 125 of the 723 (17%) published graves date to the period 750–725 (= LG I) (69). The methods of burial (*i.e*., inhumation in trench graves and amphoras, cremation under tumuli) fall squarely in the Greek tradition, as do the overwhelming majority of grave goods (*i.e*., regional styles of LG pottery; Coldstream 1993:91; cf., however, personal items in metal, see p. 179 below).

The excavations in the Valle di San Montano, then, present valuable data that can help to answer — or, at the very least, to formulate better — two questions regarding seaborne migration. The first concerns absolute population size, and the second, ethnicity of those buried, which has a direct bearing upon a size estimate of the intrusive population (cf. Chapter 3A). The large representative sample of graves excavated (*i.e*., 1,300 from 10% of the total cemetery area), combined with the known extent of the cemetery (*i.e*., 50,000 m^2), provides the student of palaeodemography with a solid foundation upon which to reconstruct the population size of an eighth-century Greek colony.[33]

[33] Unfortunately, no necropoleis of the Philistine Pentapolis have been excavated so far. Because they contained PBP and not PMP, the so-called "Philistine" burials at Tell el-Far'ah [S] (*i.e*., Cemetery 500, especially Tombs 532, 542, 552, and 562; for discussion and references to the original excavation reports, see McClellan 1979; T. Dothan 1982:29–33, 260–68) are not directly related to the initial Philistine settlement and, as such, are not of primary concern for this dissertation.

The relationship between ethnicity and burial practice is, unfortunately, on shakier ground: ethnographic study has repeatedly shown that burial practice is highly unstable, varies at both the intra- and inter-cultural levels, and frequently cuts across ethnic boundaries (Ucko 1969:274–76). For this reason, a minimalist approach will be employed when considering the burial practice evidence as it pertains to ethnicity, which will, in turn, affect a population estimate of the intrusive Greek population.

It is perhaps best to acknowledge from the start that the size estimation of ancient populations based on funerary remains is fraught with difficulty. In general, the potential confounding factors include the following: 1) the use of more than one cemetery by a given community; and 2) the exclusion of certain members of that society — whether because of age, sex, and/or class — from interment in the cemetery in question (Ridgway 1992:102). For an estimate of the size of the initial colonizing group, there are further complicating matters, such as: 3) the presence of natives among those buried; 4) the percentage of infants and children (*i.e.*, those born post-*Adventus Graecorum*) among the buried; and 5) chronological imprecision in assigning graves to first generation colonists.

Regarding the first factor, there are good reasons to believe that the primary, and perhaps only, cemetery used by the inhabitants of Pithekoussai was in the Valle di San Montano. These reasons are: 1) the size of the cemetery; 2) its proximity to the main settlement; and 3) the failure of survey and excavation around the island to uncover additional burial grounds. What is more, with the notable absence of élite burials, or "warrior" tombs, which are known from contemporaneous sites on the Italian mainland and in Greece (Buchner 1979:129), the anticipated age, sex, and class profiles are manifested; therefore, the confounding effect of factor number two should be minimal.

The burial of indigenes, particularly women, along with Greek colonists will be discussed presently, as will the percentage of sub-adults. Regarding the fifth factor, the only chronological distinction possible, based on ceramic typology, is between the LG I (*i.e.*, 750–725) and II (*i.e.*, 725–700) Periods. Therefore, it will not be possible to state unreservedly that a particular burial belongs to a member of the first colonizing party. It should be possible, however, to provide a reasonable estimate as to how many Greeks came to Pithekoussai over a period of 25 or 50 years.[34]

As previously mentioned (see p. 175), over 1,300 graves were excavated at Pithekoussai of which 723 have been published. According to David Ridgway, these 723 graves represent between 2.5 and 5% of the projected total number of graves in the cemetery (1992:101). Of these graves, 493 (68%) date to the LG Period, of which 125 (17%) belong to the LG I and 368 (51%) to the LG II (see Table 13A, Chart 2; Ridgway 1992:69).[35] If this sample — at somewhere between 2.5 and 5% — is representative of the entire cemetery, then the following number of burials, according to period, can be projected: 19,720 to 9,860 during the entire LG; 5,000 to 2,500 during the LG I; and 14,720 to 7,360 during the LG II.

Throughout this period, however, pre-adults constituted about two-thirds of the cemetery's population. Approximately 39% of the burials were inhumations of children and young people, and 27% were *enchytrismoi* burials (= inhumations in amphoras or other large containers), often of new- or still-borns (48). Therefore, the number of adult burials in the Valle di San Montano should be reduced as follows: as many as 6,573 and

[34] This estimate will only take into account population increase beyond expected growth in a pre-industrial agricultural society, for which there is ample comparative data (for references, see p. 178 below).
[35] Coldstream, citing a personal communication from Buchner, reports that "in the portion of the cemetery excavated in 1965–1980, which will be published as *Pithekoussai* II . . . the graves of the first generation

as few as 3,287 during the entire LG, with between 1,667 and 834 during the LG I, and between 4,907 and 2,453 during the LG II.

What, though, of the burying population — as opposed to those buried — at Pithekoussai? Ridgway (1992:102), by adopting a formula developed by Ian Morris (1987:74),[36] calculated that the burying group was not less than 4,800 and not more than 9,860 for any year between 750 and 700 (1992:102). Closer analysis of the data reveals an interesting demographic pattern over time: during the LG I, the burying population was between 2,433 and 5,000; however, during the LG II, these numbers rose to between 7,164 and 14,720, an increase of almost 300% in the span of between 25 and 50 years (see Chart 3). Over the course of two generations, a pre-industrial population should approximately double under normal conditions (Wrigley 1969:20–21; F.A. Hassan 1981:125); therefore, it is necessary to postulate an exogenous source of population increase.

Neither the number of adult burials during the LG I (*i.e.*, between 1,667 and 834), nor the size of the burying population during this same period (*i.e.*, between 5,000 and 2,433), however, should be regarded as an accurate reflection of the size of the immigrant Greek population at Pithekoussai. In addition to the textual evidence discussed above (see pp. 170–71), there is strong archaeological data to suggest that Greek colonists took native brides. At Pithekoussai the data are derived from grave goods, particularly items related to personal dress and ornament. Foremost in this regard are the fibulas, all of

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actually form the majority" (1994b:52, n. 8; see also Ridgway 1982:71). It is possible, then, that the number of first generation colonists projected here may be too low.

[36] Morris' formula assumes an annual death rate of 30 per 1,000 in agricultural societies that possess a full age structure. Because of the high, and potentially confounding, number of *enchytrismoi* burials at Pithekoussai (= 27% of the total during the LG), Ridgway calculated the burying population in two ways: first, by using a higher death rate of 40 per 1,000; and second, by leaving *enchytrismoi* burials out of his calculation altogether (see Table 13B).

which are clearly indigenous in style and similar to those found in eighth-century Etruria and Latium (Buchner 1979:133–34; Coldstream 1993:91).[37] At least some of these fibulas were manufactured at Pithekoussai, as plainly indicated by the discovery of a miscast specimen in the metalworking quarter of Mezzavia (Buchner 1971:66, fig. 7).

Based on the funerary evidence, Giorgio Buchner has convincingly argued that most, if not all, of the women at Pithekoussai were non-Greek natives (1979:133–35). He infers that Greek men would not have been concerned with local dress custom, hence the discovery of indigenous-type personal items at Pithekoussai (and at other Greek colonial sites) signals the presence of native women. If this is correct, and assuming that all marriages were mixed, then the size of the migrating Greek population should be reduced by approximately half.[38] The resulting statistics for the LG I, then, are as follows: between 834 and 417 adult Greek male burials (see Chart 4); and 2,500 to 1,217 — including adult males and the offspring of mixed marriages — among the burying population.

A conservative estimate for the number of first generation Greek colonists at Pithekoussai, therefore, is approximately 600. Although this figure may appear small, it represents, against the backdrop of Greek colonization throughout Magna Graecia and Sicily in the eighth century, only a small percentage of a larger movement of people overseas. Various Greek cities established at least 14 colonies — seven from the Euboean cities of Chalcis and Eretria alone — in the west during this time (A.J. Graham

[37] The same is true for the eighth-century Greek colony at Cumae and, to a lesser extent, at Syracuse (Buchner 1979:135).
[38] It is also possible that once the colony had been firmly established, Greek women and children emigrated.

1982:160–62).[39] If each of these colonial foundations involved the same number of settlers as projected for Pithekoussai, then almost 8,500 Greeks emigrated to the west in the second half of the eighth century. And the pace of colonization would only quicken: during the seventh century more than 40 Greek colonies or sub-colonies — ten in Sicily and Magna Graecia — were founded along the shores of the Mediterranean and Black Seas.

B. Late Geometric Seafaring Capability

Unlike the Philistine migration, there is little doubt that the Greek colonization of the central Mediterranean was carried out by sea. Therefore, it is possible to proceed directly to a juxtaposition of the reconstructed size of the Greek colonizing population with the seafaring capability of the Late Geometric Period. As with the end of the Late Bronze Age, information about seafaring at the end of the Geometric Period is derived from three categories of data (listed in the order of importance and appearance in the ensuing discussion: 1) depictions of ships, primarily on vase paintings; 2) texts (*i.e.*, Thucydides, Herodotus); and 3) underwater archaeology.

1. Pictorial Evidence

[39] In addition, two sub-colonies were founded — namely, Mylae by inhabitants from Zancle and Helorus by inhabitants from Syracuse. Furthermore, a few other Greek colonies (*i.e.*, Corcyra, Cyzicus, Methone, Parium) were established elsewhere in the eastern Mediterranean and Black Sea regions at this time.

Late Geometric vase paintings provide the most direct evidence about the ships used by eighth-century Greek colonists.[40] The types of vessels depicted, throughout both the LG I and II Periods, are invariably oared galleys. Many are long, sleek, open galleys, or *aphracts*, used mainly for dispatching messages or personnel (Casson 1995:50; for a complete list of eighth-century *aphracts* with full bibliographic references, see pp. 75–76). *Aphracts* are shown with between 8 and 19 rowers per side, therefore representing 20-oared galleys, triakontors, or pentekontors.[41] Such ships were approximately 15, 23, and 38 m in length respectively (Morrison and Williams 1968:53; Casson 1995:54–55).

Later on, screening was added to the sides of galleys to protect the rowers — hence they were "fenced in" (*kataphracta*) — and speed capacity was enhanced by the addition of a second bank of oarsmen. Fragmentary ship depictions on Attic pottery and a complete scene on a bowl from Thebes clearly show both banks manned in the proper echelon formation — therefore biremes or *dieres* — indicating that some galleys were manned by at least 78 oarsmen (Morrison and Williams 1968:46, Geom. 10, 19, 43–44).

Two depictions of Greek galleys belong to narrative scenes illustrative of some of the potential difficulties at sea faced by the early colonists. The first scene, aptly called the "Pithekoussai shipwreck," appears on a locally made Late Geometric II krater (Ridgway 1988 with full bibliographic references to previous literature on p. 98). It shows a capsized ship, six crew members thrown overboard, and 24 fish, the largest of which is in the process of devouring one of the crew members.[42]

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[40] The most comprehensive studies of Late Geometric galleys based on vase paintings are Kirk 1949, Morrision and Williams 1968, pp. 12–42, Ahlberg 1971, pp. 25–38, Basch 1987, pp. 158–87, Wallinga 1993, pp. 33–95, and Casson 1995, pp. 49–76.

[41] One of the ships depicted on the "New York" krater shows precisely 25 rowing stations (Morrison and Williams 1968:40–41, Geom. 25). Pentekontors were used in the Theran colonization of Libya (see p. 168, n. 23 above) and in the Phokaians' flight first to Chios and then to Corsica (see p. 168 above).

The second scene appears on the Aristonothos vase, a *ca*. 660 mixing bowl, which was probably also produced locally at one of the Greek colonies in southern Italy or Sicily (Williams and Morrison 1968:74–75, Arch. 5). It may depict a naval battle between Greek colonists in their sleek, oared galley and the indigenous Etruscans (or Carthagians[?] *pace* Basch 1987:234) in their heavy, round-hulled ship (DeVries 1972:41, 44, fig. 2). Or, it may represent a pirate attack by Greeks in an oared galley upon Greeks in a beamy merchantman (Casson 1995:67–68, n. 118, fig. 80; for further discussion, see Wallinga 1993:33–34). In either event, seaborne travel at this time and in these waters was fraught with risk.

Of lesser interest to Greek vase painters were the slower, but roomier, merchantmen. Good representations of Greek cargo vessels do not survive from the Geometric Period; however, the Phoenician world affords us valuable comparanda. The fact that later depictions of Greek merchantmen resemble these Phoenician bottoms inspires confidence in their relevance to the present discussion. The "evacuation of Tyre" scene from a relief in the palace of Sennacherib at Nineveh has the distinction of being the only illustration of a seaborne population movement in the ancient world (Layard 1849:Pl. 71; Barnett 1969:Pl. 1). In this scene, warships and transports, both double-banked and with passengers on deck, ferry the fleeing Tyrians to safety from the approaching Assyrian army.[43] The well-rounded hulls of the transports call to mind the

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[42] A smaller shipwreck scene appears on a LG II, Attic oinochoe (Morrison and Williams 1968:35, Geom. 38; Basch 1987:175, fig. 370).

[43] According to the corresponding passage in Sennacherib's annals, Luli, king of Sidon, fled to Iadnana (= Cyprus; Luckenbill 1927:§239). It is reasonable to suppose that the flotilla — into a ship of which Luli lowers a child (perhaps a young prince?) — accompanied him there. Based on the join discovered by Barnett (1956:91, fig. 93; 1969:6, Pl. 1), at least 12 ships are now visible in this scene. With an average of 25 oarsmen and passengers in each, one might conclude that the artist had in mind a movement of no less than 300 people.

designation for later, similarly shaped, Phoenician merchantmen — namely, *gaulos*, or "tub" (for attestations in classical literature, see Casson 1995, p. 66, n. 114).

A ceramic boat model from Amathus (= British Museum, A 202) provides a three-dimensional view of a cargo ship *ca*. 800 (Basch 1987:254, fig. 559; Casson 1995:65–66, figs. 86–87). Unlike the transports in the Nineveh relief and the oared galleys discussed above, this type of vessel operated under the power of both oar (as indicated by the pierced oar-ports) and sail (as indicated by the mast-step). The broad and deep hulls of these ships were able to carry much more cargo than the long and narrow warships which were designed for maneuverability and speed.

Although Herodotus records that only pentekontors were used in Greek overseas colonization (1.164.3–166.1, 4.153.1, 4.156.2), the Nineveh reliefs and logic suggest that colonists employed a wider range of ships. Indeed, the term "pentekontor" merely implies 50 oarsmen and, as such, could refer to a merchant galley just as well as to a war galley. Perhaps the vanguard of colonists, the first couple of hundred men described by Herodotus, traveled in fleeter war galleys, whereas subsequent settlers and the bulk of the supplies came aboard more capacious merchantmen.

2. Textual Evidence and Shipwrecks

As with the overall subject of early Greek colonization, there is no contemporary description of maritime matters during the Late Geometric Period.[44] The primary textual

[44] Homer, who lived in the second half of the eighth century, purportedly described a world at least 400 years prior to his own lifetime. To be sure, some of the accounts related to seafaring could equally apply to the Late Geometric Period as to the Late Bronze Age, but they do not contribute significantly to that which is already known from iconographic evidence and later writers (see below).

evidence for seafaring during this period is Thucydides, whose coverage prior to the rise of the *poleis ca*. 500 is sporadic at best. Notwithstanding, the general impression left is that until at least the end of the eighth century, navies were privately owned (mostly by the king) and still based on the Trojan War model, insofar as they were equipped with pentekontors and long vessels (= plo.oij makroij) (Th. 1.14.1; Wallinga 1993:30). That the Corinthian shipwright, Ameinokles, built four ships for the Samians *ca*. 700 is the only specific information available that pertains to Geometric Period naval strengths (1.13.3).[45]

Until recently, no well-preserved shipwrecks from the main period of Greek colonization (750–500) had been located or excavated anywhere in the Mediterranean Sea.[46] In 1999, the Ashkelon Deep-Sea Underwater Survey, led by Robert Ballard and Lawrence E. Stager, investigated two eighth-century Phoenician shipwrecks resting at a depth of over 400 m approximately 50 km off the coast of Ashkelon (for now, see Gore 2001:91–93). The two wrecks, dubbed by their discoverers *Elissa* and *Tanit*, each carried more than 10 tons of wine. Each shipwreck held upwards of 400 19-liter amphoras, which were visible. If there is a lower tier of amphoras, then this number would double. Based on the disposition of the cargo on the seafloor, it is possible to reconstruct a length of about 15 m and a width of about 5 m; therefore, a width-to-length ratio of 1:3, which approximates that of the Amathus ship model mentioned above (Stager, pers. comm.). These ship sizes and cargo capacities accord well with the evidence available from

[45] Not surprisingly, Thucydides' and Herodotus' coverage of naval history from the Archaic Period (700–500) is slightly more extensive: *ca*. 660 there was the first battle at sea between Corinth and Kerkyra (Th. 1.13.3); *ca*. 540 the Phokaians met a combined Carthagian and Etruscan force, each side able to muster a fleet 60 ships strong (Hdt. 1.166); and *ca*. 525 the thalassocrat, Polykrates of Samos, had at his disposal a fleet of 100 pentekontors (Hdt. 3.39) and 40 triremes (3.44).

[46] Only scattered cargo remained from the early sixth-century Etruscan(?) wreck excavated off of Cap d'Antibes in southern France (Pruvot 1971).

depictions and the excavated remains of merchantmen from both preceding (*i.e.*, Late Bronze) and succeeding (*i.e.*, Hellenistic) periods (see Tables 7–8).

C. Conclusions

The preceding examination, based on text and archaeology, of the Greek colonization of Magna Graecia and Sicily at the end of the Geometric Period is useful for an understanding of the Philistine migration for a number of reasons. First, there is for the Greek colonization a comparatively rich body of textual evidence to complement the archaeological data. Information about the causes, organization, logistics, and results of colonization is contained in these texts, all subjects that must be reconstructed largely from archaeology in the case of the Philistines. Second, the extensive excavation of the necropolis at Pithekoussai provides direct evidence concerning the size of the earliest population at the site. Conversely, no cemeteries associated with the Philistine Pentapolis have been excavated thus far.

Although it is tempting to accept the similarities suggested by the Greek colonization as something like historical fact for the Philistine migration, it is important to bear in mind that they are probabilities at best and, in all likelihood, no better than possibilities. There is, after all, much about the Greek colonization in and of itself that is not fully understood. The main goal of this chapter has not been to prove any aspect of the Philistine migration, but rather to probe the Greek colonization of southern Italy and Sicily for potentially fruitful lines of inquiry into the Philistines' settlement of southern coastal Canaan.

Information gleaned from texts about early Greek colonization in the central Mediterranean was summarized earlier (see especially p. 171 above) and the possible implications for the Philistine migration were raised in the footnotes (see nn. 2, 6–8, 10, 12, 17, 24 above). A fuller discussion of these implications will now be offered. Most of the observed similarities between the Greek colonization and the Philistine migration concern the causes of colonization/migration, whether they acted as push (*i.e.*, drought and famine, threat of invasion) or as pull factors (*i.e.*, trade/mercantilism, weakness of the indigenous population). The role of "internecine strife" (see pp. 162–64 above), which has not figured in discussions of the Philistine migration so far, is considered in Chapter 7 (see pp. 210–11).

The remaining similarities pertain to the organization and composition of, as well as the preparations undertaken by, the colonizing/migrating party. The organization and hierarchy of the Greek colonizing parties, which is evident in classical texts, can be inferred for the Philistine migration insofar as these features would have been prerequisite for the establishment of the complex, urban sites of the Pentapolis. Furthermore, any movement of people that resulted in a settlement of the size and richness of Pithekoussai or Ashkelon would have required the participation of élites in order to provide the necessary material support. The recent connection of פתגיה with the Delphic oracle (see p. 167, n. 18 above), if correct, vastly improves our understanding of Philistine cult, cultural identity, and the legitimization of their migration.

The relationship between immigrants and indigenes is another potential commonality between the Greek colonization and the Philistine migration. The generally hostile relations between Greek colonists and indigenous peoples reported in classical

texts call to mind the constant acrimony that existed between Philistines and Israelites, as conveyed by the Hebrew Bible, and the probable antagonistic — at least initially — interaction between Philistines and Canaanites, as evidenced by the thick destruction levels at Pentapolis sites (see Chapter 4, pp. 114–15). Ramesses III's repulsion of the Sea Peoples, as reported at Medinet Habu, is a clear example of hostility between would-be immigrants (*i.e.*, the Philistines) and the indigenous population (*i.e.*, the Egyptians).

The excavation of a first generation, Greek colonial necropolis provides valuable data concerning the logistics of colonization/migration that may be profitably applied to the Philistine migration. A palaeodemographic analysis of the cemetery at Pithekoussai indicates that classical writers were correct in assigning small numbers to initial colonizing parties (cf. pp. 167–68 above). It is interesting to note, however, that the amount of population increase during the entire Late Geometric Period (300% across approximately two generations) cannot be attributed to natural growth alone (see p. 178 above; Chart 3). Thus, it is necessary to postulate a continued influx of settlers (beyond the nearly 100% native brides that has already been assumed) over time. A similar process of gradual peopling has been proposed for the Philistine migration and settlement (see Chapter 5, p. 157).

Finally, seafaring capability during the Geometric Period, as evidenced by iconographic, textual, and underwater survey data, was indubitably equal to the task of transporting Greek colonists and their supplies from the Aegean region to southern Italy and Sicily. In light of the size and pace of colonization reconstructed above, such ventures could have been successfully carried out with no more than a dozen ships.

Similarly, the Philistine migration was not constrained by any maritime-related concerns (see Chapter 5H, pp. 156–57).

Chapter 7. Theoretical Approaches to Migration

For most of this century ancient Near Eastern archaeologists and historians have invoked migration and invasion in order to explain changes in the material culture record (Adams, van Gerven, and Levy 1978:484, 495). This interpretative tendency was (and still is) largely the result of two factors: first, the perseverance of a culture-historical approach to pre- and early historical periods (B.J. Stone 1995:11); and second, the influence exerted by the biblical narrative upon archaeological interpretation (W.Y. Adams 1978:1).

According to the culture-historical paradigm, discontinuities in the material culture were attributed to the movement of migrating or invading peoples. Crudely summarized, the methodology proceeded in the following way: first, new artifact traits and assemblages were identified and correlated with ethnic groups; next, precedents for these innovations were sought, and usually found, in neighboring or far-flung regions; and, lastly, mass migration or invasion was assumed to be the agent of their introduction. Diffusion (through the movement of goods and ideas but not populations) and local innovation, meanwhile, were generally not regarded as viable agents of change.

Culture-history was most extensively formulated in the field of European prehistory (for the following discussion of theoretical trends relating to migration, refer to Chart 5). Gustav Kossina was a prominent (and infamous) early culture-historian (1911; 1912), who, through the spatial patterning of similar material cultures, described the trajectory of a master Indo-European race — a mythology later embraced by Nazi ideologues. Culture-history's most famous proponent, however, was V. Gordon Childe.

In his syntheses of European prehistory, Childe, although admitting of the possibility of evolution and diffusion, consistently explicated changes in the material culture from the Neolithic Period to the Iron Age in terms of migration (*e.g.*, 1950; 1957).[1]

Whereas the assumptions of culture-history in the study of prehistoric Europe were based on archaeological data, in the ancient Near East the paradigm was first implicitly accepted by virtue of the textual evidence. The movements of peoples (especially the Israelites) figure prominently in the Hebrew Bible and, moreover, can be inferred at times from other ancient texts. The story of the Philistines illustrates this point well: Amos (9:7) and Jeremiah (47:4) report that Caphtor (= Crete) was the Philistines' homeland (see Chapter 1, p. 34, n. 39); and, soon after the translation of the Medinet Habu inscriptions and Papyrus Harris I, wherein the names of other Sea Peoples appear and the path of their destruction is recorded, it became widely acknowledged that coastal Asia Minor was another likely place of origin (see Chapter 2, p. 37, nn. 7–9; Macalister 1965:28). Combined with the knowledge, derived primarily from the Book of Judges, of the Philistines' settlement in southern coastal Canaan, their migration became, now more than ever, a foregone conclusion for many Egyptologists and biblical scholars.[2]

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[1] Although Childe's geographic focus was Europe, he did occasionally look to the Near East, a region to which he applied a similar interpretative framework: for example, he placed the origin of the Philistines and other "Land and Sea Raiders" in coastal Asia Minor based on the distribution of burial practices (*i.e.*, cremation, burial in urnfields), "stilted and asymmetrical" fibulae, and cut-and-thrust swords (1950:178–79).

[2] The Hebrew Bible records or alludes to other migrations, large and small, such as the following: Terah, Abram, Sarai, and Lot journeyed from Ur of the Chaldees to Haran (Gen. 11:31–32); then, Abram, Sarai, and Lot went, with all their retainers and possessions, from Haran to Canaan (12:1–6; these and other patriarchal narratives figure prominently in the "Amorite hypothesis" [for further discussion, see p. 199, n. 8 below]); the Israelite nation — 600,000 men strong not including women and children (Exod. 12:37; cf. Num. 1:46; 26:51) — fled Egypt and wandered across the Sinai, Negev, and Transjordan (Num. 33:1–49) before taking possession of the Land of Canaan; according to Amos (9:7), the Lord brought the Arameans up from Kir, a region located variously in Assyria, Babylonia, North Syria, Armenia, and North Arabia (for discussion with further references, see Thompson 1992). Finally, the events following the Great Flood, as described in the Table of Nations (Gen. 10), read like a template for culture-history: the descendents of Noah were born and spread across (נפרדו; vv. 5, 32) the lands so as to re-inhabit the earth.

Archaeological data (*i.e.*, pottery) generated by the excavation of sites in and around Philistia at the beginning of the twentieth century not only corroborated this text-based migration paradigm (see Chapter 2, pp. 38–39), but was also congruent — once interpreted — with the prevailing theoretical *Zeitgeist*, namely, culture-history. The results of extensive excavations at Philistine Pentapolis sites over the past 40 years have strengthened the notion of a Philistine homeland in the Aegean region and/or Cyprus (see Chapter 1), thereby further substantiating the historical likelihood of a migration. Meanwhile, in the study of prehistoric Europe, the old migration- and invasion-based models of culture change came under the intense scrutiny of processual theory (see especially Renfrew 1969:152–53; 1972:16; 1973:249; for New World Archaeology antecedents, see Binford 1962:218). Consequently, diffusionist paradigms gave way to functionalism and its focus on internal development due to local, techno-environmental factors.[3]

In the post-processual era, some prehistoric European archaeologists rallied again to the banner of migration and diffusion, but not in as great a number or as uncritically as in the days of Childe. David W. Anthony, a leader of this so-called "neo-migrationist" movement, has argued persuasively for migration's reinstatement as a viable model for understanding changes in material culture (1990; 1992; 1997). Beginning with the recognition that migrations did and do occur, Anthony and other "neo-migrationists" (*e.g.*, Kristiansen 1989; Champion 1990) have striven to define the "process" of migration, thereby harmonizing it with processualist theory. To this end, principles of migration generated in other social scientific fields (*i.e.*, demography, economics,

[3] Cf., however, the seminal work of Clarke, in whose typology of socio-archaeological processes, five involve either migration or invasion (1978:419–20; see also Chapman and Hamerow 1997:3).

geography, linguistics, physical anthropology, statistics) were adapted for use in archaeology. These principles, which will be discussed in Section B (see pp. 206–17 below), concern the impact of the following upon the decision to migrate: "push" and "pull" factors; information flows between the original and adoptive homelands; and the transport capability and intervening obstacles attending the proposed migration route.

The theoretical upheavals experienced elsewhere in Old and New World Archaeology, however, had little influence upon the ancient Near East: when confronted by a major and sudden change in the material culture, migration is often still the paradigm of choice for many Syro-Palestinian archaeologists. This inclination is especially true if there is what seems to be corroborating textual evidence, as with the Philistine migration and settlement. Insofar as there are sufficient textual and archaeological data attesting to the arrival of a foreign population in southern coastal Canaan during the first half of the twelfth century, the intent here is not to prove the Philistine migration. Rather, the goal is to clarify the nature, structure, and context of this migration, as well as to place it within a typology that has been pieced together from the work, drawn from archaeological, ethnohistorical, and ethnographic case studies, of various archaeological theorists (*e.g.*, Trigger 1968:40–47; Clarke 1978:418–64; Rouse 1986:175–80; Kristiansen 1989:219–20; Gamble 1993:Table 1; Anthony 1997:26–27).

"Context" includes the socioeconomic, political, and environmental factors that influenced the decision to migrate and determined what kind of migration ensued. In many respects, this clarification will correspond to defining the Philistine migration as a "process" (cf. Anthony 1990:899–905), rather than as an event, the way in which it has typically been understood so far. To gain a better understanding of this process, the

aforementioned migration principles (see preceding page) will be applied specifically to the Philistine migration.

A. What Kind of Migration?

To state simply that an Aegean-style material culture suddenly appeared at Pentapolis sites as a result of migration raises more questions than it answers. Although many of these questions have been addressed directly or indirectly in previous chapters, they bear repeating here. For example: was this migration an abrupt invasion of a hostile people or a steady infiltration of peaceful settlers? Did it involve an entire society on the move or was it comprised solely of a particular socioeconomic class? And what were the results of this culture contact? Was it the displacement of the native Canaanite population and/or its material cultural? Was it the absorption of the intrusive Philistine population into Canaanite society accompanied by the acculturation of the Philistine to the Canaanite material culture? Or, was it an evenly divided Philistine/Canaanite population with reciprocal acculturation? What were the reasons for migration? Were the Philistines compelled to immigrate by economic hardship, political instability, or the threat of hostile invasion in the homeland? Or, were they dawn to the adoptive homeland by the promise of greater prosperity? Was the decision to migrate facilitated by certain developments in technology and/or communication — for example, improved travel and transport capability, or knowledge of routes and distant lands gained through trade networks? Finally, was there a migration at all, in which case should the material culture

changes at twelfth-century Ashdod, Ashkelon, and Tel Miqne simply be attributed to cultural diffusion?

Before addressing these questions directly, it will be useful to review, in critical fashion, the paradigms employed so far to explain the material culture changes at issue. As much as possible, these paradigms will be correlated with general models for the explanation of cultural change as developed over the past 30 years by archaeological theorists.

1. Total Population Displacement

"Cultural intrusion/substitution" (Clarke 1978:419), "total population displacement" (Trigger 1968:39–41), or "population movement" (Rouse 1986:9–13, 175–82) was the migration type that archaeologists most commonly employed in the past to explain the Philistine settlement. Such a reconstruction of events was undoubtedly informed by the Philistines' martial character as evidenced at Medinet Habu and in the Hebrew Bible. The following statement reflects well the prevailing view of the Philistine migration held by early archaeologists: "The People of the Seas, amongst whom were the Purisatu (= Philistines), came swarming southwards by land and sea with ships and wagons, cattle, women and children" (Phythian-Adams 1921a:78).[4] Total population displacement, accompanied by total material culture displacement, however, rarely

[4] When describing the Philistine migration and settlement, most modern scholars avoid speculation regarding the logistics of the Philistines' arrival in southern coastal Canaan, probably because of the uncertainties that attend ancient population estimation (see Chapter 3, p. 92) and the correlation of ethnicity with material culture (see Chapter 4, pp. 112–14). Stager, who is perhaps the only one to offer such specifics (see Chapter 3, p. 93, n. 27), favors total population displacement (1995:344).

occurs (Trigger 1968:40; Kristiansen 1989:219). The perseverance of Canaanite material culture attributes (especially pottery) at Pentapolis sites shows that total displacement was certainly not the case with the Philistine migration and settlement (see Chapter 1, p. 13, n. 8). It is possible that these attributes were introduced through trade, or diffusion effected by trade, with neighboring Canaanite sites, but the discovery of substantial quantities of common wares in the Canaanite tradition would seem to militate against this argument.

2. Subcultural Intrusion

"Subcultural intrusion" (Clarke 1978:419) is the process by which an organized group, or subculture, immigrates to a foreign land and is integrated into the adoptive society (Trigger 1968:41–43; Rouse 1986:176; Kristiansen 1989:219–20). The outcome of this process depends a great deal on the size and strength of the intrusive subculture relative to the host culture. The operating assumption is as follows: the larger the number of immigrants and the stronger their military, socioeconomic, and cultural status, the greater the likelihood of the survival — if not predominance — of their material culture traditions.

The displacement by an intrusive subculture of the corresponding subculture, along with the associated material culture, of the host society in the adoptive homeland would be a straightforward result of subcultural intrusion. For example, if the intrusive subculture had been a military élite, then one would expect to find from them only intrusive-style weaponry and prestige items in the archaeological record; otherwise, the

rest of the material culture assemblage would remain much the same. On the other hand, an intrusive subculture might displace the population, but not the associated material culture, of its counterpart in the host society. This situation could arise for two reasons: 1) the intrusive subculture is archaeologically invisible; and/or 2) the intrusive subculture quickly acculturated to the host society. As we will soon see (see Section A4, pp. 201–6 below), acculturation was, indeed, a factor in the Philistine settlement; but it was a slow process that lasted well over 100 years.

Most theories regarding the socioeconomic composition of the migrating Philistine population held (as anticipated above) that they were a military élite that lived amidst a subject Canaanite population (for references, see Chapter 3, p. 79, n. 2). Support for these theories came from a combination of textual and archaeological evidence, which includes: 1) the assumption, based on the report contained in Papyrus Harris I, 76.7–9, that the initial Philistine settlement resulted from the Egyptian garrisoning of defeated Sea People warriors in strongholds in southern coastal Canaan (see Chapter 4, p. 104); 2) the portrayal of the Philistines as a war-like people in ancient texts and iconography; 3) the military role of the rulers (*sərānîm*) of the Philistine Pentapolis as described in the Hebrew Bible (*e.g.*, I Sam. 7:7, 29:2; see also Chapter 6, p. 163, n. 7); 4) the discovery at certain Canaanite sites of Egyptian-style anthropoid coffins, which, because of their feathered headdresses, were assumed to be the burials of Sea People mercenaries (see Chapter 4, pp. 105–6); and 5) the predominance of Aegean-style fine wares and Canaanite plain wares among the ceramic assemblages at Philistine sites (see Chapter 1, p. 13).

Evidence contradictory to the above items (especially numbers 1, 4, and 5) is presented in previous chapters and in the appendix, but, nonetheless, is worth repeating here: first, there is almost no sign of an Egyptian presence during the Twentieth Dynasty at Philistine Pentapolis sites (see Chapter 4, pp. 108–13 and Appendix A), and a survey of New Kingdom texts pertaining to the disposition of defeated enemies indicates that they were settled, with rare exception, within Egypt proper (see Chapter 4, pp. 104–8); second, the anthropoid coffins belonged to Egyptians stationed in Canaan and not to Sea Peoples mercenaries (Stager 1995:341–42); and third, it can now be shown that the Aegean-style material culture assemblage at Pentapolis sites encompassed both élite and non-élite items (see Chapter 1, pp. 28–30 and below).

In addition to the above negative evidence against reconstructing the Philistine migration strictly as an incursion of a military aristocracy, there is also the following positive evidence in favor of envisioning the Philistines as a group of people diverse in terms of class, sex, and age. First, and most obvious, is the depiction of Philistine women and children shown riding in oxcarts alongside Philistine warriors at Medinet Habu (Nelson 1930:Pl. 34).[5] The presence of female Philistine immigrants is manifest also in the discovery of distinctive Aegean-style loomweights at Pentapolis sites. Again, as noted earlier, the available evidence clearly shows that spinning and weaving were

[5] The evidence adduced by Sweeney and Yasur-Landau (1999) to show that Philistine warriors intermarried with Syro-Canaanite women prior to their assault on Egypt is unconvincing for three reasons: 1) insofar as Egyptian artists had probably never seen *women* of Aegean origin firsthand previous to the Year 8 encounter (as the authors imply, see p. 122), they most likely employed a familiar and acceptable substitute — namely, conventional depictions of Syro-Canaanite women; 2) the hairstyle parallels invoked are compromised by the fact that they are inconclusive (woman nos. 1 and 4), based on incomplete renderings (woman nos. 3 and 6), or non-existent (woman no. 2; see pp. 137–38); and 3) at Tel Miqne — the Pentapolis site with the best stratigraphic and ceramic sequence excavated so far — Aegean-style cooking jugs almost completely supplant the typical, triangular-profiled rim, cooking pots of the LB Canaanite tradition (Barako 2000:523, n. 88). As noted earlier, cooking was largely the domain of women in the ancient world and cooking wares are particularly resistant to change (see Chapter 1, pp. 30–31).

activities carried out almost exclusively by women in the ancient Near East (see Chapter 1, p. 29, n. 35). It begs the imagination to suppose that Philistine men of any socioeconomic class should impose their textile traditions on the native female population. Kitchen wares, such as kalathoi and cooking jugs, locally made but whose forms are clearly of Aegean inspiration, advance the same argument (see pp. 29–30).

Faunal evidence shows that the twelfth-century inhabitants of Tel Miqne and Ashkelon ate considerably more pork than their Late Bronze Age predecessors (see Chapter 1, pp. 20–21). The higher percentages of *sus scrofa* found at Tel Miqne in Fields I and III (the non-élite zones) relative to Field II, (the élite zone; Hesse and Wapnish 1997:253), may indicate that the consumption of swine was more widespread among non-élites than élites. Given the strong probability that pig preference was yet another cultural practice introduced by the Philistines from the Aegean world (see Chapter 1, p. 27 *contra* Hesse 1990:197; Hesse 1995:217–28; Hesse and Wapnish 1997), one might infer that common pork-eaters comprised some part of the migrating population.

Cultic architecture and paraphernalia with Aegean affinities, such as hearth rooms, knotched scapulae, and Ashdoda figurines (see Chapter 1, pp. 14–16, 18–19), reflect the introduction of a foreign cult at Philistine sites. Admittedly, the outward forms of cult are prone to the forces of diffusion; however, if the scapulae were used as instruments of divination — namely, in scapulomancy, as has been suggested (Webb 1985:324–28) — and *pyrophoroi*, or fire-bearers, attended the holy flame of the hearth

shrines (Schäfer-Lichtenberger 2000:88–89),[6] then it is likely that cultic personnel, too, made the journey.[7]

3. Mercantile Phenomenon

The third, and final, paradigm according to which the Philistine settlement is understood minimizes the process of migration almost to the point of nonexistence. Rather than being understood as a result of migration, the sudden appearance of the intrusive material culture at Pentapolis sites has recently been attributed by a growing number of scholars to the process of cultural diffusion through the agency of trade (see especially Sherratt 1998; Bauer 1998; for further references, see Barako 2000:513, n. 1).[8] According to this paradigm, the locally produced, Myc IIIC:1b pottery is viewed as a reflection of the activity of a loose confederation of maritime merchants based in Cyprus, who distributed massive quantities of this type of pottery throughout the eastern Mediterranean.

There are, however, three aspects of the Philistine settlement that belie assigning to trade such a formative role in the reestablishment of these sites. First, the relative

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[6] For a discussion of this cultic functionary and practice in Greek colonization, see Malkin 1987, pp. 114–34. The discovery at Pentapolis sites of numerous built hearths situated within prominent rooms, which is an architectural feature frequently attested in the Mycenaean world (see Chapter 1, pp. 14–16), adds weight to Schäfer-Lichtenberger's suggestion.

[7] Similarly, the worked *conus* shells found at Pentapolis sites (see Chapter 1, pp. 32–33) may, once their function is better understood, be seen to reflect the activity of another socioeconomic group with Aegean origins. For instance, if lead-filled *conus* shells, which are known from Cyprus and the Greek mainland and may have been used as net weights, are found in Philistia, one might infer the presence of immigrant fisherman.

[8] Gerstenblith (1983:125) proposed a trade-based paradigm, which relies heavily on "secondary state formation" processes, to account for the cultural innovations evident during the early MB Period in Syria-Palestine. Traditionally, these innovations had been attributed to population movements — namely, to invasions of Amorites (for references, see Dever 1977:82–86). For a successful criticism of the "trade" hypothesis as it relates to the early Middle Bronze Age, see Kamp and Yoffee 1980, p. 99.

abundance of Cypriote and Mycenaean imports in southern coastal Canaan prior to the period of the Philistine settlement, as compared to their near complete absence afterwards. This contrast is most unusual, indeed, if the region had recently been settled by those involved in the seaborne trade of massive amounts of pottery, and who were in close and regular contact with Cyprus (515–20).

Second, the clear destruction levels at Philistine sites, especially Tel Miqne, where the small Canaanite settlement was completely destroyed, directly over which was established the much larger Philistine city. The use of force that this stratigraphic relationship implies is not the anticipated result of the activity of a mercantile community, whose prime interest would have been in the smooth operation of trade (520–22).

Third, the socioeconomically diverse range of the intrusive population, as evidenced by the material culture discussed above. These unprecedented aspects of culture manifested in weaving equipment, methods of food preparation, diet/animal husbandry, and cultic practice are not particular to or determined by membership in a single socioeconomic class — that is, maritime merchants. Rather, they indicate the influx of a diverse population group, culturally defined not by occupation but by a common geographic and, most likely, ethnic background (522–24).

4. Acculturation

Despite the appearances, the foregoing discussion does not deny that certain acculturative processes were at work during the Philistine settlement.[9] Indeed, acculturation is plainly demonstrated in the archaeological record of Pentapolis sites throughout the Iron I Period by the following features: 1) certain Canaanite ceramic forms are present in the earliest Philistine strata at Ashdod, Ashkelon, and Tel Miqne (see Chapter 1, p. 13); 2) a generation or two after their arrival, Philistine potters combined Aegean, Egyptian, Canaanite, and Cypriote shapes and decorative styles to create the distinctive Philistine Bichrome pottery; 3) bowl-lamp-bowl foundation deposits, a common feature at Canaanite sites during the thirteenth, twelfth, and first half of the eleventh centuries, have been found in Philistine strata at Tel Miqne (T. Dothan 1990:29–30; Bunimovitz and Zimhoni 1993:115) and Ashkelon (Bloch-Smith 1998; Master and Aja 2000); 4) the Tell Qasile temples of Strata XII–X (the best examples of Philistine cultic architecture so far excavated) appear to be of both Levantine and Aegean inspiration (A. Mazar 1980:61–73; 2000:215–23); and 5) by the end of the eleventh century (= Ashdod Stratum X, Tel Miqne Stratum IV), traditional Philistine Bichrome began to give way to the red-slip repertoire, which would come to typify pottery throughout Palestine (*i.e.*, Israel, Judah, Phoenicia, *and* Philistia) during the Iron II Period (T. Dothan 1989a:12).[10]

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[9] By acculturation is meant the process of culture change resulting from continuous contact between members of two separate and culturally distinct groups of people such that there is a diffusion and integration of ideas and/or material culture traits between groups. For further discussion with references, see B.J. Stone 1995, pp. 8–9.

[10] Cf., however, evidence for the perseverance of the Philistines' cultural identity well into the seventh century, as preserved by the royal dedicatory inscription from Tel Miqne (Gitin, Dothan, and Naveh 1997): the royal dedicator's name is אכיש, which is derived from **Ik(h)ayus/š* → Akhayus, or in Greek, ʻΑχαιός — that is, "the Greek" (Naveh 1998); and the divine dedicatee's name is פתגיה, probably to be read "Pytogayah" or "the goddess Gaia who was worshipped in Delphi (= Pytho)" (*pace* Schäfer-Lichtenberger 2000:89–91; see also Chapter 6, p. 167, n. 18).

The appearance of bowl-lamp-bowl foundation deposits at Pentapolis sites raises a number of questions concerning the Philistine acculturation of Canaanite material culture traits, which merit a brief discussion here. As with most of the Canaanite traits in the material culture assemblage at Pentapolis sites, the practice of the bowl-lamp-bowl foundation deposit seems to have been adopted at least a generation after the initial Philistine settlement: the two deposits excavated at Tel Miqne are from Strata VIB and V, and the more than five deposits (from Philistine strata; for the LB II Period, see Bunimovitz and Zimhoni 1993:112) at Ashkelon belong to Phase 17 (= eleventh century).[11]

In Egypt, the practice of laying foundation deposits — albeit with items relating to the construction of the building and not with bowls and lamps as at Canaanite sites — began in the Old Kingdom (Weinstein 1973). It is possible that the practice of laying foundation deposits entered the southern Levant by way of Mesopotamia, where this tradition has a long history (Ellis 1968); however, it is significant that the bowl-lamp-bowl deposit appeared in Canaan/Philistia at a time (*i.e.*, end of the LB/beginning of the IA) when interaction with Egypt was particularly intense (Bunimovtiz and Zimhoni 1993:123).

[11] One of the bowls used was red-slipped and burnished (Bloch-Smith 1998), indicating a date in the second half of the eleventh century at the earliest.

Because the context of foundation deposits (*i.e.*, below room floors, under walls, in the corner of rooms) did not change significantly as the practice spread from Egypt, to Canaan, and then to Philistia, it is probable that the intention, or part of the "trait complex" (Wissler 1959:22–23), remained, on the whole, intact.[12] The original form, or the trait itself, of the practice, however, changed from building-related items to bowls and lamps as the practice diffused from Egypt into Canaan. In similar fashion, at Pentapolis sites the form of the bowl-lamp-bowl deposit was not adopted wholesale from the surrounding Canaanite material culture: the bowls used at Tel Miqne and Ashkelon were often of the typical, "S-shaped," Philistine painted variety; whereas those found elsewhere tended to be in the LB Canaanite tradition (Bunimovitz and Zimhoni 1993:99–121).[13] At sites where a strong Egyptian presence has been noted, Egyptian bowls were used, as at Haruvit, Bir el-'Abd, Tell Jemmeh, and Tel Sera' (108–10). Because it was buried, the type of bowl selected, whether in Egypt, Canaan, or Philistia, could not have acted as an ethnic marker, at least not in an outward, inter-group sense. Instead, the form of the practice must have resulted simply from a utilization of the bowl type available, or it was an expression of ethnic identity strictly within the group.

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[12] It is commonly thought that the desired outcome of these foundation deposits was to insure the success of a building project through the appeal with offering to the appropriate numen (Bliss 1894:84; Bliss and Macalister 1902:152; Weinstein 1973). Macalister (1903:306–9) and Petrie (1928:6), through their excavation of bowl-lamp-bowl deposits at Gezer and Tell Jemmeh respectively, theorized that the lamps were ritual substitutes for infants who had once served as sacrificial offerings. This interpretation was based on the erroneous assumption that all sub-floor or sub-mural burials of children were foundation deposits, when, in all likelihood, this method of interment was simply the common practice in the event of an infant's death.

[13] A number of the bowls used in this type of foundation deposit at Beth Shemesh had either the "S-shaped" profile (referred to therein as "cyma"; Bunimovitz and Zimhoni 1993:114, fig. 8.9, 11–13) or interior concentric circles (fig. 8.14, 17–18), but none possessed both characteristics. A Myc IIIC:1b bell-shaped bowl is reported to have been used in one of the deposits from Tell el-Hesi (111, fig. 7.12).

The amount and rate of acculturation, however great and fast it might have been, does not *ipso facto* disprove a migration or diminish its scale. The acculturation of traits from the donor (especially Canaanite) culture into the recipient (*i.e.*, Philistine) culture can be explained in various ways without undermining the migration paradigm. The immediate adoption of Canaanite storage jars and oil lamps into the Philistine ceramic assemblage is more easily understood if one considers that these forms were either lacking or functionally inferior in the Aegean homeland (B.J. Stone 1995:23). Moreover, because they might have arrived via trade, the presence of these Canaanite types at Pentapolis sites does not necessarily mean that Canaanite potters were producing them in Philistia.[14]

As for the later, more gradual signs of acculturation, these should not be surprising for two reasons: 1) cultural ties with the homeland were not actively maintained, as evidenced by the absence of imports and the divergent paths of cultural development in the two regions concerned (*i.e.*, Philistia, Aegean and/or Cyprus; B.J. Stone 1995:23; Barako 2000:515–16, fig. 1, Table 1); and 2) as contact with the neighboring Canaanite and Israelite cultures intensified through trade, warfare (see especially I Sam. 4, 29–31), and the expanded Philistine settlement (= Stager's "Stage 2"; 1995:335, fig. 2), so did the acculturation process (B.J. Stone 1995:23; see also D.D. Davis 1983:83–84).[15]

[14] Cf., however, the almost complete absence of PMP at Canaanite sites (see Table 1), which suggests that trade between Philistia and Canaan during the first half of the twelfth century was slight.

[15] Conversely, inter-group differences in cultural style can be accentuated as a result of political stresses such as warfare (or raiding; see Hodder 1979:447; 1982:26). These differences highlight the "otherness" of the warring group and the concurrent, intra-group, cultural uniformity fosters a sense of solidarity in the face of external threat.

Finally, the immediately apparent, distinctive features of the material culture at Pentapolis sites (*i.e.*, the "objective" or "etic" aspect) may have had little or nothing to do with the conception and expression of ethnic self-identity (*i.e.*, the "subjective" or "emic" aspect) for the inhabitants of those sites. This last observation may give the impression that the old "pots equal people" formulation is without predictive value; however, certain material culture traits are, as we have seen (see Chapter 1, pp. 28–30), more diagnostic of ethnic affiliation than others and, moreover, it is the growing combination of diverse intrusive traits that makes the argument for the influx of a large group of immigrants so compelling.

The process of acculturation described above was an outgrowth of migration and the subsequent long-term proximity of two distinct cultures. It did not result from the relatively casual and sporadic cultural contact engendered by trade. The existence of certain intrusive traits in the material culture assemblage of Pentapolis sites (*i.e.*, loomweights, cooking vessels, table wares [the last of which differed in every aspect of production imaginable from the preceding Canaanite wares]) is best understood as having resulted from the presence of individuals intimately familiar with their manufacture and use — namely, Philistines.

Of the four explanatory models discussed above (*i.e.*, total population displacement, subcultural intrusion, mercantilism, acculturation), the Philistine migration is best viewed as a modified form of subcultural intrusion. "Modified" because a single subculture did not constitute the entire migrating group: the available evidence indicates that more than one socioeconomic class, both sexes, and even children emigrated. One must stop short, however, of proposing a complete displacement of the Canaanite

population by the Philistines for two reasons: 1) the large amount of Canaanite material culture attributes still present in the artefactual assemblages at Pentapolis sites; and 2) the general dearth of historical precedents for such demographic phenomena.[16] Insofar as acculturation came after and was the indirect result of migration, it fails as a means for understanding the sudden appearance of the Philistine material culture. And diffusion through the agency of mercantile contacts played a minor role, at best, in bringing about the numerous marked changes evident in the material culture of southern coastal Canaan during the first half of the twelfth century.

In all likelihood, the Philistines were a large migrating group led by a warrior class, who brought with them their wives and children, craft specialists (*e.g.*, potters, weavers), cultic personnel, architects, sailors, and perhaps even swineherds. In short, enough people who collectively possessed the necessary skills to establish, in a relatively short amount of time, the thriving urban centers of the Philistine Pentapolis (Stager 1995:345; 1998:165).[17]

B. A Contextual Approach to the Philistine Migration

So far we have looked very closely at the logistical feasibility (Chapter 5) and the results (Chapter 1) of the Philistines' seaborne migration, but have given little consideration to its possible causes. In the social sciences these causes are often

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[16] Cf., however, the foundation of Carthage by the Tyrians led by Elissa/Dido according to Timaeus (*FGH* 566 F 60) and Virgil (*Aeneid* I.343–69).

[17] In support of this migration group model, Kamp and Yoffee report that individual ethnic groups existing within a plural society "are often extremely heterogeneous with regard to social status, occupations, and residential location" (1980:97).

formulated in terms of negative "push" and positive "pull" factors (*e.g.*, Herberle 1938; Lee 1969:285–87; Lewis 1982:99–102; Anthony 1990:898).[18] In much of the scholarship, the Philistine migration has been understood almost entirely as the result of push factors, which tend to be economic in nature (cf. Lewis 1982:117). The much overlooked pull factors, which can be technological, ideational, as well as economic, are just as important in influencing the decision to migrate.

Because some of these causes or factors might have been close in time to the migration event, they will tend to be less perceptible to the archaeologist. For this reason it is better to examine the broader historical and structural causes of migration — namely, the long-term social, economic, political, and environmental trends that combined to bring it about. Information regarding the structure of migration — which can often be better understood than the immediate causes (Anthony and Wailes 1988:444) — will emerge from the following survey of factors that are thought to have precipitated the Philistine migration.

Because of the aforementioned, disproportionate amount of attention paid to negative factors leading to migration, this survey will focus on the potential positive factors. Nevertheless, there will be a review of the commonly cited push and a hitherto overlooked, possible push factor (*i.e.*, internecine struggle) will be proposed. Finally, three prerequisites to long-distance migration — namely, (1) information flows, (2) transport capability, and (3) minimal intervening obstacles (Anthony 1997:23–25), will be discussed (for Sections A1–4, refer to Chart 6).

[18] For a cursory application of these concepts to the Minoan colonization of the Cyclades, see E. Schofield 1983, p. 295.

1. Negative Push Factors

The Philistine migration, and the presumed displacement and subsequent movement of peoples across the entire eastern Mediterranean at the end of the Late Bronze Age to which it is frequently related, are generally thought to have been the result of some great economic and/or political upheaval.[19] Because the Aegean region is the most likely homeland of the Philistines and other Sea Peoples (see Chapter 2, pp. 36–39), the reasons for their migration are frequently sought after here, particularly in the socioeconomic, political, and environmental conditions that operated upon the Greek mainland during the LH IIIC Period. Before briefly reviewing the oft-cited positive factors, it should be noted at the outset that rarely are they discussed in isolation. Most scholars view the "collapse" as a combination of factors (*i.e.*, the "multiplier effect"), either acting in symbiotic fashion or unfolding causally and sequentially. Furthermore, it is generally acknowledged that the causes for collapse varied from region to region, owing to differing local circumstances (*e.g.*, Liverani 1987:69).

An oft-cited catalyst for this demographic turmoil is earlier migrations and invasions (*e.g.*, Dorians in Greece, Phrygians in Asia Minor; Betancourt 1976:40–41; Sandars 1985:184–86, 191–95; Drews 1993:62–66). These theories, which were first inspired by much later (relative to the events they describe) textual notices (Hdt. 9.26, Th. 1.12 [Dorians] and Hdt. 7.73, *Lydiaka* of Xanthus cited in Str. 7.3.2 [Phrygians]), have

[19] The secondary literature pertaining to the causes of the eastern Mediterranean-wide collapse at the end of the Late Bronze Age is voluminous. The best overview of this expansive subject, with further bibliography, is Drews 1993, pp. 33–93; for the perspective from the Mycenaean world, see Desborough 1964, pp. 217–57, Snodgrass 1971, pp. 296–314, Betancourt 1976, and Schachermeyr 1982; for the perspective from the Hittite world, see Bryce 1998, pp. 374–79.

attracted little corroborating archaeological evidence. Furthermore, they merely compound the problem and postpone the inevitable question, "And what caused these migrations?" Above all, these "domino effect" theories do little to further our understanding of the Philistine migration.

Natural disasters, such as droughts and earthquakes, are also commonly invoked. There is some archaeological and indirect textual evidence for drought-like conditions *ca*. 1200 in Anatolia: the Gordion dendrochronological sequence shows abnormal fluctuations for the twelfth century (Kuniholm 1990:653); and letters from Boğazköy (KUB 21.38; KBo 2810; see also Chapter 5, p. 141), Ugarit (RS 20.212; see also Chapter 5, p. 131), and Egypt (KRI IV 5,3) vividly convey Hatti's dependence on foreign, grain-producing regions in times of want, particularly during the last half of the thirteenth century (Klengel 1974; Drews 1993:77–84; Singer 1999:715–19). Famine brought on by drought is one possible cause of these recorded food shortages.[20]

Earthquakes once figured prominently in discussions concerning the destruction of major urban centers like Troy, Mycenae, Knossos, Hattusas, Alalah, and Ugarit (*e.g.*, Schaeffer 1968:760–68); however, these theories have largely fallen out of favor because of a lack of direct supporting evidence (in general, see Drews 1993:33–47; especially for Ugarit, see Singer 1999:730–31).[21] Recently, the notion of an "earthquake storm" — a sustained period of seismic activity that is an observed, geological phenomenon in the modern eastern Mediterranean region — has been invoked to account for many of the

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[20] Thus far, there is no palaeoclimatological data and only slim textual evidence to support the thesis, first championed by Carpenter (1966), that a drought hastened the collapse of the Mycenaean civilization (for references, see Drews 1993:77–84).

[21] The destruction of Mycenae at the end of LH IIIB, however, is still attributed by many to seismic activity (for references, see French 1998:4).

destruction levels dated *ca*. 1225–1175 (Nur and Cline 2000). For excavated sites along the Levantine coast, at least, there is no archaeological evidence that any of these destructions were caused by earthquakes.

The "general systems collapse" theory, which is of more recent vintage, has garnered increasing support in recent years (*e.g.*, Betancourt 1976:42–45; Sandars 1985:47–49, 77–79, 197; Liverani 1987:69–70; cf., however, Dickinson 1994:306–7). It holds that the over-specialized economies and over-centralized bureaucracies of Late Bronze Age polities were unable to adapt to disruptions that adversely affected the flow of raw materials and finished products through tightly controlled palace markets. Therefore, stoppages of international maritime trade, perhaps due to increased levels of brigandage, or depleted crop and livestock surpluses resulting from drought, would have dealt crippling blows to the entire Late Bronze Age economic and political system. Much of the appeal of the "general systems" model lies in its application of *conjoncture* as opposed to a focus on *événement* (cf. Braudel 1995:892–903), which is the predominant feature of the previously discussed theories.[22] The drawback inheres in the necessity to invoke events, such as earthquakes or hostile attacks, to explain the many destruction levels at sites around the eastern Mediterranean (Drews 1993:88–90).

Ethnography, New World Archaeology, and classical literature suggest another possible push factor that has so far not figured in discussions concerning the overall collapse at the end of the Late Bronze: internecine struggle, brought on by the hierarchical limitations imposed by a gerontocracy, which leads to the fissioning off of

[22] Although it could be argued that the *conjoncture* of "general systems collapse" is, in effect, the combination of a number of *événements*, the focus of this paradigm is still on long-term events.

kin-based groups. The disenfranchised social segments then migrate to regions that promise greater political latitude and economic prosperity.

Such a centrifugal process has been observed throughout history and throughout the world, as for example among many African societies, the Hopi in the American Southwest, the Postclassic Maya in Mexico (for references, see Chapter 6, p. 163, n. 8), the ancient Romans (de Coulanges 1980:75–77), and as reflected in the accounts of classical writers concerning Greek colonization during the Late Geometric and Archaic Periods (see Chapter 6, pp. 162–64).

Unfortunately, the Philistine migration lacks the kind of documentation available for most of the above case studies, and the artifactual correlates of such a process have not yet been worked out.[23] It is reasonable to suppose, however, that something similar had occurred: the disenfranchised sons of the urban élite throughout the Aegean and on Cyprus might have been drawn both to the plunder of piracy and to settlement in a land where they could establish new social, political, and economic hierarchies.[24] These hierarchies would have been structurally similar to those that they were fleeing, but now featured latter-born sons in the top positions.

2. Positive Pull Factors

[23] Note, however, Fox (1987:16), who refers to a paper delivered by K.L. Brown (1983), in which "some of the artifactual configurations left by segmentary lineage communities (of the Quiché Maya)" were outlined. Because this paper has not been published, its contents, unfortunately, were unavailable to me.

[24] The socioeconomic preconditions, at least, were operative: in early Greek society, the *cleros*, the ancestral estate, was indivisible and inalienable, passing from the head of the *genos* to the eldest male offspring (Mireaux 1959:55, 107). There were, however, exceptions to this rule, as indicated by Homer: in the tale spun by Odysseus upon his return to Ithaca, he tells the swineherd Eumaeus that after his fictitious father's death, the inheritance was divided among the legitimate sons (*Od*. XIV.208–9).

As mentioned earlier, the positive factors are rarely, if ever, considered when it comes to the Philistine migration, despite the fact that they are as important as negative factors for an understanding of the entire migration process. Demographers and geographers have long recognized that migrations are most apt to occur when there are both "negative stresses in the home region and positive attractions in the destination region, and the transportation costs between the two are acceptable" (Anthony 1990:899). The role of two positive factors influencing the decision to migrate will be considered here. They are: 1) perceived benefits in the adoptive land; and 2) ideational motivations.

Southern coastal Canaan is ideally suited for agriculture and trade (Stager 1995:344–45). Beyond the coastal sand dunes is the well-watered and fertile plain, or Shephelah, of the Philistine hinterland. Biblical notices pertaining to Philistia during the Iron I Period allude to the cultivation of wheat, olives, and grapes (for references, see Machinist 2000:57). Historically, viticulture dominated the coastal zone as evidenced most clearly by the excavations at Ashkelon: an eleventh-century winery, complete with vat and treading platform (Bloch-Smith 1997; 1998), was recently discovered almost directly beneath the seventh-century "royal" winery (Stager 1996:62–65); during the Byzantine Period, the much sought after wines of Ashkelon and Gaza were transported throughout the Mediterranean world in distinctive *Askalônian* and *Gazition* amphoras (Johnson and Stager 1995).[25] Another winery has been excavated at a terminal Late Bronze Age site located directly on the coast near Ashdod (Nahshoni in press). Farther inland, cereals and especially olives were grown. At seventh-century Tel Miqne, 115

[25] For the extensive Byzantine winery located a few kilometers north of the tell, see Israel 1993.

olive oil installations, with a production capacity of at least 500 tons of oil per year, have been excavated (Gitin 1998:173).

In addition, Philistia was located along the main coastal road, or Via Maris, referred to occasionally also as the "Way of the Philistines." Situated as it is along the Mediterranean Sea, this part of the Levant was at a major crossroads for overland and maritime travel and trade. As a prospective place of settlement, then, few regions in the eastern Mediterranean could rival Philistia's economic potential.[26] More critical for the decision to migrate, however, was this consideration: were conditions in southern coastal Canaan sufficiently better than those in the original homeland to warrant a migration?[27] Historical hindsight provides an affirmative, albeit qualified, response. Qualified, because other factors, such as information flows and transport capability, which will be discussed below (see pp. 214–17), might also have conditioned the Philistine's decision to migrate. Qualified also, because, as just mentioned (see n. 27 above), knowledge concerning one half of the equation (*i.e.*, the location of the Philistines' homeland) is imprecise.

Initially, Philistine warriors might have been drawn to southern coastal Canaan by the spoils of raiding. There is certainly ample textual evidence to cast them and other Sea Peoples in the role of pirates (see Chapter 5, pp. 125–26). But beyond the allure of

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[26] The weakened Egyptian military and administrative presence in southern coastal Canaan at the beginning of the Twentieth Dynasty (see Chapter 4, pp. 112–13), compared to that of the more powerful Nineteenth Dynasty, undoubtedly served as a further enticement. For the potentially similar dynamic between Greek colonists and the indigenes on Sicily, see Chapter 6, pp. 169–70.

[27] Demographers and geographers use various methods, such as cost-benefit analyses, stepwise regression models, and resource supply and demand curves (for references, see Anthony 1990:898), to explain the causes of migration and to determine the role played by certain pull factors. Unfortunately, archaeologists generally lack the types of data available for these studies of modern migrations. Uncertainty surrounding the precise location of the Philistine homeland further compounds the problem in that one half of the data necessary for the above mentioned analyses is effectively missing for a study of the Philistine migration.

material gain, there might also have been an ideational dimension — namely, the prestige that accrued to success in warfare and piracy (cf. Anthony 1990:898–99). Odysseus, a leader held in the highest esteem by his Achaean peers, led his men on numerous raids (see Chapter 5, p. 143) and suffered no opprobrium. And according to Thucydides (1.5), piracy was once an honorable profession (see p. 143, n. 36). Raiding and warfare of this kind might have "shaded off" over time into trade/exchange and settlement, as was generally the case with the Viking expansion (Anthony and Wailes 1988:444). Unfortunately, short of explicit textual evidence, it is very difficult to prove the effect of this ideational factor on the Philistine migration; however, in light of the Sea Peoples' propensity for brigandage and their origins in a region where such practice appears to have met with some approval, it should not be dismissed out of hand.

3. Information Flows

As a rule, people do not migrate to unknown places (Brown, Malecki, and Philliber 1977; Kristiansen 1989:220; Anthony 1990:901). Before embarking on an enterprise as fraught with risk as a migration, settlers gather as much information as possible about their destination and the optimal routes by which to travel there. Increased knowledge about a target destination and its perceived or potential benefits may heighten the propulsive effect of certain push factors and lower the threshold at which point a migration occurs (Brummell 1979:344–45).

In pre-modern society, knowledge of this kind was best gained through networks developed through long-distance trade. There is abundant evidence for such networks,

indicative of at least indirect contacts among the Aegean, Cyprus, and the Levant during the Late Bronze Age. Mycenaean and Cypriote pottery has been found in great quantities in the Levant, including southern coastal Canaan (for the Mycenaean and Cypriote imports found at Pentapolis sites, see Appendix A, pp. 227–30). The cargoes of the Uluburun (Pulak 1997) and Cape Gelidonya (Bass 1967) shipwrecks, which include pottery, small finds, and raw materials from throughout the eastern Mediterranean, testify even more vividly to these contacts.

Egyptian wall paintings, which show gift-bearers and emissaries from Keftiu (Wachsmann 1987), attest to direct contacts between the Aegean and Egypt from a period well before the Philistine migration. Future Philistine migrants might also have gained indispensable information about their prospective adoptive homeland through their service as Egyptian mercenaries. The Sherden, a Sea Peoples group closely connected to the Philistines, functioned in this role throughout the Ramesside Period (see Chapter 4, p. 105, n. 3). There is now also strong evidence for the presence of Mycenaean mercenaries at Amarna: a rediscovered papyrus fragment shows foot soldiers fighting alongside Egyptians (Schofield and Parkinson 1994); the former wear boar's tusk helmets and metal-edged oxhide tunics, both characteristic features of Late Helladic military dress.[28] Although based in Egypt, such mercenaries would likely have gone on military campaign in Canaan, as did the Sherden at the Battle of Qadesh (ANEP 19:59). There were, then,

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[28] Boar's tusk helmets are well known in Bronze Age Greece (MH II to LH IIIC) from numerous depictions in a variety of media, from actual examples found mostly in burial contexts (for references, see Schofield and Parkinson 1994, pp. 164–66), and from Homer's description in the *Iliad* (X.260ff). Metal-edged tunics are most likely mentioned in Knossos Linear B tablet L 693 (*e-pi-ki-to-ni-ja* ["tunic fittings"] accompanied by the sign for copper or bronze; Chadwick 1976:160) and fragmentarily represented by bands of sheet metal from an LH IIIC warrior burial (chamber tomb A) at Kallithea/Achaea (Yalouris 1960:47, Pl. 29). The panoply from chamber tomb B included the remnants of a boar's tusk helmet (44, 54–56, Pl. 31:4).

both direct and indirect channels through which information prerequisite to a long-distance migration could have flowed.

4. Transport Capability and Intervening Obstacles

The probability of a long-distance migration occurring is conditioned by the transport capability and intervening obstacles that attend the journey between the original and adoptive homelands: the greater the capability and the fewer the obstacles, the greater the likelihood of migration (Anthony 1990:900; 1997:24). Transport capability, as demonstrated in Chapter 5, would not have been a constraining factor upon the Philistine seaborne migration. Indeed, the Philistines' use of longer, sleeker galleys and the brailed sail — both of which were innovations widely adopted at the end of the Late Bronze Age[29] — as demonstrated by the reliefs at Medinet Habu, meant that their ships were faster and more maneuverable than ever before (see Chapter 5, p. 146, n. 39).[30] These improvements in seafaring technology would also have reduced the time length of the voyage and, therefore, its cost.

The decision to migrate is also influenced by the number and nature of obstacles along the planned path of migration (Lee 1969:285–87; Anthony 1990:898). As proposed in Chapter 2 (see pp. 67–70), the geographic, logistical, and political/demographic barriers posed by the putative overland route of the Philistines'

[29] As Vinson (1993) has rightly pointed out, brailed sails appear on a number of Egyptian ships as early as the Amarna Period; however, most of these were riverine vessels and, moreover, this improvement in rigging does not seem to have spread to the rest of the eastern Mediterranean until *ca*. 1200.
[30] According to Anthony (1997:24), the Aegean development of multi-oared longboats during the Early Bronze Age was the same type of innovation in transportation technology that might have made the option to migrate more feasible and attractive.

migration were prohibitively high. For a seaborne migration the geographic barriers were distances, which were easily traversable given the level of seafaring capability *ca*. 1200 (see Chapter 5, pp. 147–49), and weather, which was manageable provided that voyages were undertaken at the right time of year (see pp. 156–57). As demonstrated in Chapter 5, the logistical constraints that acted upon a migration by sea were few to none.

By political/demographic barriers are meant polities with the ability to muster sizable fleets that might have been opposed to a large-scale movement of people and materiel by sea. Texts from Ugarit, which was a major, maritime mercantile, Late Bronze Age city-state along the Levantine littoral, provide the best data on this account. Letters between the kings of Alašiya (Cyprus) and Ugarit convey that both regions were seriously threatened by small argosies of 20 (RS 20.18) and seven (RS 20.238) enemy ships, respectively (see also Chapter 5, p. 143). Other Late Bronze Age texts (*e.g.*, EA 38:10, RS 34.129; for discussion, see Chapter 5, p. 126) indicate that the Sea Peoples operated throughout the eastern Mediterranean with relative impunity. With the further decline and collapse of Late Bronze Age maritime powers (especially the Mycenaean Empire = Aḫḫiyawa(?) and Ugarit) during the first half of the twelfth century, whatever political obstacles to the Philistines' seaborne movement that might have once existed were now removed.[31]

C. Conclusions

[31] Furthermore, as the number and difficulty of intervening obstacles decreases, the volume and rate of migration tend to increase (Lee 1969:290–91).

Migrationism in ancient Near Eastern archaeology emerged relatively unscathed from the period of theoretical upheaval experienced by most of Old and New World Archaeology. This perseverance is largely attributable to the field's general resistance to processualist modes of interpretation and its adherence to the culture-historical model. Regardless of theoretical trends, archaeology has substantiated the migration hypothesis in the case of the Philistines. Archaeology, in combination with the reliefs from Medinet Habu, also provides a glimpse into the socioeconomic make-up of the migrating population: a large and diverse group of immigrants responsible for the establishment of the fully urban Philistine Pentapolis, in what has been described above as an expanded form of subcultural intrusion.

In the past, the tendency has been to describe the Philistine migration event with little consideration given to the long-term political, socioeconomic, environmental, and technological developments that combined to produce it. The various theories concerning the collapse of Late Bronze Age civilizations are typologically similar to the possible push factors of the Philistine migration. The political and economic instability, which these theories highlight, created an environment conducive to demographic flux. The previously unexamined effect of pull factors, information flows, transport capability, and intervening obstacles shows that conditions were even riper for migration than formerly thought.

Chapter 8. Summary and Final Conclusions

The sudden (and possibly violent) introduction of a distinctive material culture with clear Aegean and/or Cypriote affinities into southern coastal Canaan during the first half of the twelfth century requires explanation (see Chapter 1). A migration hypothesis best accounts for the available archaeological and textual evidence. From most of the proposed Philistine homelands (*i.e*., Greek mainland, Aegean islands, Crete, Cyprus), a trip to southern coastal Canaan entails travel by sea; the journey from coastal Asia Minor and Cilicia, however, does not. Overland travel from these latter two regions would have been exceedingly difficult for a large group of people. Geographic obstacles along the Levantine coast, such as rivers, promontories, swamps, sand dunes, and poor road conditions, would have slowed considerably, or altogether prevented, a large-scale migration. Moreover, the Levantine littoral was densely populated *ca*. 1200 and, if the characterization of the Sea Peoples in ancient texts as bellicose is to be believed, then the indigenous inhabitants would have likely resisted the Philistines' passage through the region (see Chapter 2).

Most telling is the pattern of sites that have so far produced significant amounts of the so-called Sea Peoples material culture. They are all located on or near the coast and are distributed discontinuously so as to appear as bridgeheads. This sea orientation is in accordance with what is known about the Philistines and their congeners from contemporary, ancient Egyptian and Ugaritic texts — namely, that they were peoples well acquainted with seafaring and piracy. Lastly, in regard to this question of seaborne versus overland migration, long-distance travel in the eastern Mediterranean was then, as

it is today, much easier and many times faster by sea than by land. None of the above observations operating in isolation precludes the reconstruction of an overland, Philistine migration; however, considered as a whole, they present a compelling argument for envisioning a seaborne population movement.

The large size of the migrating population referred to above is based primarily on the archaeological data pertaining to the initial Philistine settlement. A conservative estimate for the inhabited, areal extent of the Pentapolis sites of Ashdod, Ashkelon, Gath (= Tell eṣ-Ṣafi), Gaza, and Tel Miqne *ca*. 1150 is 72 ha (see Chapter 3). A reasonable population density coefficient of 250 persons/ha was derived from modern ethnographic and palaeodemographic study with special reference to Late Bronze Age Ugarit and Crusader Period Acre as case studies. The following calculation yields a figure of approximately 20,000 for the estimated population size of southern coastal Canaan at the time of the initial Philistine settlement:

250 (persons/ha) x *72 (ha)* = *18,000 (urban population)*
\+ *2,000 (rural population)*
_____
= *20,000 (total population)*

The crucial and more problematic calculation, however, concerns the percentage of the population at Pentapolis sites comprised of immigrant Philistines. Unfortunately, there is no reliable formula for the correlation of ethnicity with material culture — a dilemma made all the more difficult by the eclectic nature of the Philistine material culture. Ultimately, the size of the migrating population is largely conditioned by one's impression of the sociopolitical situation in southern coastal Canaan during the first half

of the twelfth century. For most scholars, this impression is informed by Egyptian texts (*i.e.*, Papyrus Harris I, 76.7–9) and archaeological data. The relevant archaeological data consist of (1) destruction levels that separate Canaanite from Philistine settlements at Pentapolis sites and (2) the distribution of material culture traits associated with Philistines, Canaanites, and Egyptians throughout the region (see Chapter 4).

For this author, the most plausible inference, based on the available textual and archaeological evidence, is that the Philistines entered southern coastal Canaan in hostile fashion and drove out the local inhabitants (mainly Canaanites but also, perhaps, representatives of the waning Egyptian administration). In order to produce this demographic result, a sizable incursive force was needed. Even if only half of the indigenous population was expelled and replaced, this calls for the arrival, over time, of approximately 10,000 Philistines. Admittedly, this estimate is unscientific (and even subjective), but it has a rational basis and can serve, if for no other reason, a heuristic purpose in the next stage of our inquiry.

An examination of the evidence relating to seafaring at the end of the Late Bronze Age (*i.e.*, depictions of ships in various media, ancient texts concerned with naval matters, shipwrecks) reveals that maritime capability would not have been a constraining factor for a Philistine seaborne migration of the magnitude reconstructed above (see Chapter 5). Ships were sufficiently large in terms of both cargo and passenger capacity; given the right season, seagoing vessels sailed widely and swiftly throughout the eastern Mediterranean; and, most importantly, Late Bronze Age polities could, when needed, muster large fleets. It is estimated (see Chapter 5, p. 157) that major coastal city-states

could, under extreme circumstances, transport upwards to 5,000 people in a relatively short amount of time.

Better documented population movements by sea are a valuable source of comparative data for the Philistine migration. At the most basic level, they demonstrate that seaborne migrations could and did occur in the ancient world. At a more specific level, these later migrations can, by virtue of the existence of texts that describe them, illuminate certain details of the migration process about which archaeology is silent, such as the reasons for migrating and the conditions faced upon arrival in the adoptive homeland. For the Greek colonization of Magna Graecia and Sicily during the Late Geometric Period, there are both a substantial corpus of archaeological data and a relatively rich body of textual evidence (see Chapter 6). Together they show that the Greek colonization/migration occurred for a variety of reasons, was a highly organized undertaking, and took place gradually — all features that have been suspected or can be inferred for the Philistine migration.

Although the similarities may be striking and the temptation to fill in missing details great, important differences do still exist,[1] and, ultimately, the comparison is between two incompletely understood yet complex processes. For this reason, it is best to use the Greek colonization case study not as a means to prove personal theories about the Philistine migration, but rather as a source of new and creative ways to explore the poorly comprehended aspects of the latter.

[1] For example, the first Euboean colonists at Pithekoussai encountered a virtually uninhabited island (see Chapter 6, p. 174), whereas southern coastal Canaan, in comparison, was densely populated at the time of the Philistine settlement. Also, archaeological and iconographic evidence suggests that women were a part of the initial colonizing/migrating population in Philistia (see Chapter 1, pp. 28–30 and Chapter 7, pp. 197–98), but not in the Greek colonies (see Chapter 6, pp. 170–71, 178–79).

Internecine strife as a migration push factor is a case in point: in many foundation accounts, classical authors relate that internecine strife was the catalyst for Greek colonization. A survey of ethnohistorical and ethnographic studies of migration reveals that this phenomenon was common throughout history and across the world. Until now, the role of internecine strife in the Philistine migration had not been considered. Further, again based on the Greek colonization model, it may be possible in the future to conduct a more accurate palaeodemographic analysis of the Philistine settlement. If a necropolis of the Philistine Pentapolis should be discovered some day, it would allow for the type of case study that was made possible by the excavations in the Valle di San Montano at Pithekoussai. Lastly, in light of the recent connection of the divine name פתגיה with the Delphic oracle (see Chapter 6, p. 167, n. 18), the importance of hearth shrines in Greek colonies (see Chapter 7, pp. 198–99, n. 6), and the prevalence of Aegean-style hearth rooms at Philistine sites (see Chapter 1, pp. 14–15), the role played by hearths in the preservation of Philistine cultural identity merits closer examination.

The ancient Near East has been, in many respects, a haven in the theoretical storm that buffeted archaeological interpretation in most other parts of the world. Migration, although not as freely invoked by ancient Near Eastern archaeologists today as in the past, nevertheless, has not been subject to the same rigorous reevaluation as have diffusionist paradigms in prehistoric European or New World Archaeology. As a result, the notion of the Philistine migration, notwithstanding differing opinions concerning its size and nature, has remained intact. The growing body of archaeological data, in the meantime, has tended to validate the migration hypothesis. In the case of the Philistines at least, the culture-historians and migrationists have been vindicated.

The application of "neo-migrationist" theory to the political, environmental, socioeconomic, and technological context of the Philistine settlement leads to a better, broader understanding of the process of their migration (see Chapter 7). It entails a consideration of the negative push factors in the original homeland, positive pull factors in the adoptive homeland, and the information flows, obstacles, and transport capability affecting travel between the two regions. Although such an exercise alone cannot prove the historical occurrence of a migration, it can show that conditions were conducive to it and suggest answers as to how and why this event took place.

Because of the lack of certain types of information irretrievable through archaeology and the analysis of ancient texts — which correspond, in a general sense, to the answers to the questions "why" and "how" — many details of the Philistine migration are forever unknowable. It is necessary, then, to rely on strong inference based on the available archaeological, textual, and iconographic data, comparative analyses (*e.g.*, Greek colonization), and theoretical models. The interpretative strength of this approach lies in the multiple lines of inquiry — as opposed to undue reliance on a single category of information — and the convergence of conclusions it has produced. This combination of evidence suggests that there was a large-scale influx of Philistines into southern coastal Canaan during the first half of the twelfth century and that they arrived mainly, if not entirely, by sea.

Appendix A. Chronology of the Philistine Settlement

As part of their overall revision of Iron Age chronology, David Ussishkin (1985:223; 1992:118–19; 1995:264) and Israel Finkelstein (1995; 1996a; 1996c; 1998a:167–68; 1998b; 1999:37–38; 2000:161–65) have suggested lowering the date of the appearance of PMP — and, consequently, the date of the Philistine settlement — to the last quarter of the twelfth century.[1] The Philistine settlement is usually dated to approximately 1175, based primarily on the notice at Medinet Habu concerning Ramesses III's expulsion of the Sea Peoples in the eighth year of his reign.[2] Following their defeat, the Philistines were forcibly settled by Egypt in southern Canaan, where they were soon able to overcome their Egyptian masters. William Foxwell Albright (1975:511) and Albrecht Alt (1953) are credited with constructing this paradigm, based largely on Egyptian texts, that archaeologists have been forced to accommodate ever since (Finkelstein 1995:213–14).

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[1] Ussishkin was the first to propose the "Low Chronology" based on his excavations at Lachish; however, Finkelstein has been, by far, the more vocal advocate for chronological revision. For this reason, Finkelstein will be cited primarily in the following discussion. The "Low," "Middle," and "High" relative chronologies of Ussishkin and Finkelstein should not be confused with the absolute Egyptian chronologies of the same name. Although dependent on Egyptian absolute dates, the Ussishkin/Finkelstein chronologies refer primarily to the date of the Philistine settlement in relative terms. The Egyptian chronologies are strictly sequences of pharaonic reigns calculated according to absolute dates. It should be noted that Aharoni was the first to advocate a "Low Chronology," arguing that, stylistically, Myc IIIC:1b represents the "second phase of sub-Mycenaean pottery" (1982:184). Like Finkelstein, he also postulated a gap between the last Canaanite and the first Philistine strata (here, at Ashdod and Tell Beit Mirsim). McClellan also favored lowering the date of the appearance of Philistine pottery to about 1140 based on his study of the Philistine pottery from the Tell el-Far'ah (S) cemeteries (1979:72–73). As I shall argue below, these chronological revisions rely primarily on evidence from outside the Philistine Pentapolis, data which is of secondary importance in determining the chronology of the Philistine settlement. The stratigraphic sequence at Philistine Pentapolis sites overwhelming supports the popular "Middle Chronology," which assigns a date of *ca*. 1175 for the beginning of the Philistine settlement.

[2] Today, most Egyptologists prefer the low chronology of Wente and van Siclen, which yields dates of 1182–1151 for the reign of Ramesses III (1976:218, Table 1; see also Kitchen 1987:39, 52, Table 5). The once popular high chronology, which assigns dates of 1198–1166 for Ramesses III's reign (Faulkner 1975:241–44), has generally fallen out of use.

Finkelstein's revision is founded on two assumptions: 1) the absence of PMP at two key sites in southern Canaan, Stratum VI at Lachish and Stratum IX at Tel Sera' (1995:218–219; cf. Oren 1982:166; 1984:55–56), coupled with its presence at nearby Philistine sites; and 2) the presence of imported Myc IIIC:1b at twelfth-century Beth-Shan combined with its absence at Megiddo (Finkelstein 1996a). The first assumption is to be understood as follows: if sites such as Lachish and Tel Sera' contain strata clearly datable to Ramesses III (1182–1151),[3] and, if these same strata do not contain Philistine pottery (PMP and/or PBP), then Philistine pottery must have begun to appear sometime after Ramesses' reign — that is, in the second half of the twelfth century. The second closely related assumption concerns Megiddo Stratum VIIa and Beth Shean Lower Level VI, both thought to have functioned as Egyptian strongholds during the first half of the twelfth century (Singer 1988/89; A. Mazar 1993a; see also Chapter 4, pp. 109–11), only one of which (*i.e.*, Beth Shean) has produced imported Myc IIIC:1b pottery (Hankey 1966:169–71, Pl. 45; Warren and Hankey 1989:164–65; A. Mazar 1993a:216; see Table 1). This discrepancy between two "functionally" similar sites is taken as an indication that Beth Shean outlasted Megiddo in the twelfth century, and that the imported Myc IIIC:1b at Beth Shean dates to the late twelfth century.[4]

[3] The hieratic bowl inscriptions from Lachish Stratum VI were at first tentatively ascribed to the reign of Merneptah, or possibly Ramesses VI (Tufnell 1958:133); however, in light of a similar inscription found later at Tel Sera', which more clearly dates to the reign of Ramesses III (Goldwasser 1984), the Lachish inscriptions were also attributed to his reign (Goldwasser 1982). The bronze cartouche of Ramesses III from the renewed excavations at Lachish was found in a hoard sealed by the Stratum VI destruction level (Ussishkin 1983:123; Giveon 1983).

[4] Ussishkin has used the Egyptian presence at Megiddo VIIa in a different way to bolster the "Low Chronology": through its command of Megiddo, which overlooks the Nahal 'Iron pass in the Jezreel Valley, Egypt effectively controlled all traffic along the Via Maris (1995:261; 1998:216–17). If Megiddo was in Egyptian hands until *ca*. 1130, then the Philistines could not have migrated overland from the north, as the texts and reliefs at Medinet Habu suggest. Therefore, the Philistine migration and settlement could not have occurred until after 1130, or, when there was no longer an Egyptian presence in Canaan (1995:264). All of this, however, is based on the unproven assumption that there was, indeed, an overland migration (cf. Chapter 2, pp. 67–77).

Both of these assumptions are based on the notion that no cultural boundary is impermeable. A corollary holds that when two neighboring contemporary sites do not possess precisely the same material culture (*i.e.*, the presence or absence of Myc IIIC:1b), they cannot be contemporary. Amihai Mazar has adduced examples from the archaeology of Israel to demonstrate that distinct material cultures may coexist side by side with little or no interaction (1997a:158; see also Ben-Tor and Ben-Ami 1998:31). One does not need, therefore, to resort to wholesale chronological revision to explain what is ultimately a cultural phenomenon.

There is another weakness in Finkelstein's argument that deserves comment: very little of his evidence is taken from the Philistine Pentapolis where the relative chronology is clear. Strata marked by the appearance of massive amounts of PMP lie directly over strata with imported Mycenaean and Cypriote pottery datable to the end of the thirteenth century (M. Dothan 1979:127–28; T. Dothan 1998a:151–52). Although the absolute chronological evidence is more plentiful at sites outside of Philistia (*i.e.*, Lachish, Tel Sera', Megiddo, Beth Shean), it should not supersede the clear chronological picture of the Philistine settlement based on excavations at Philistine sites.

Also significant is the almost complete absence of Twentieth Dynasty finds from Philistine Pentapolis sites prior to and during the Philistine settlement (Weinstein 1992:145; Bietak 1993:299–300).[5] Under Ramesses III, a reinvigorated Egypt attempted to regain control of southern Canaan (Weinstein 1981:22; 1992:143–46; Singer 1988b:4–6; 1994:286–94; Bietak 1991). This effort is reflected in the numerous Egyptian finds

[5] For a discussion of the Ramesses III scarab found in Stratum XII at Ashdod, see p. 231 below. Also, a possible Ramesses IV scarab was found at Tell eṣ-Ṣafi (= Gath?) in an uncertain context (Uehlinger 1988:21, n. 63).

that date to the Twentieth Dynasty found at sites in Israel, but *outside of Philistia* (Bietak 1993:294, figs. 2–3). This apparent lack of Egyptian activity during the Twentieth Dynasty in Philistia is no mere coincidence; they were not in Philistia during this period because a people hostile to Egypt — namely, the Philistines — was there in their place.

The weight of the evidence from Philistine Pentapolis sites is considerable, and the pattern that emerges cannot be dismissed due to the vagaries of archaeological discovery. It reflects a historical development that offers a more reasonable explanation of the archaeological data than the chronological revision suggested by Finkelstein.

During the Late Bronze Age, Tel Miqne had contracted in size to 2.50 ha and was confined to the northeast corner of the tell (= Field I) (Gittlen 1992). On a surface (= locus 5057) that dates to the end of the Late Bronze Age (= Stratum VIIIa), the excavators found some sherds of Anatolian gray burnished ware, an import rarely seen in Israel (Killebrew 1996a:26, Pl. 8:1; 1998a:383, fig. 4.1). "Anatolian Grey Ware" has been found in large quantities at Troy in Levels VIh and VIIa, which span the late fourteenth to the early twelfth centuries (Allen 1994:39). In the Levant it is always found along with imported Mycenaean and Cypriote pottery in contexts that date to from 1315 to 1200 (1990:170).[6] On two nearby contemporary surfaces (= loci 5053 and 5054) a restorable Cypriote vessel, probably a White Painted Wheelmade III bowl, was found

[6] Tell Abu Hawam has produced not only the largest amount of "Grey Ware," but also has the largest quantities of imported Cypriote and Mycenaean pottery in Israel. Balensi, in her reevaluation of the earlier excavations, dated all of the "Grey Ware" to the end of Stratum V or VIb (= 1315–1200; 1980:290). Of the "Grey Ware" found at Lachish, most was found in Stratum VI, and probably belongs in the thirteenth century based on the imported Mycenaean pottery from the same locus (Tufnell 1958:213–14; see now also Na'aman 2000). Two sherds were found at Tell Keisan in an unstratified balk and are reported to be no later in date than the Iron I Period (Allen 1990:179). "Anatolian Grey Ware" is found in twelfth-century contexts on Cyprus at Kition, Enkomi, and Hala Sultan Tekke (Allen 1991).

(Killebrew 1996a:26, Pl. 8:2; 1998a:383, fig. 4.2).[7] These surfaces (= loci 5053, 5054, and 5057) were sealed by an approximately 0.50-m "thick layer of crushed orange-colored mudbrick" (= loci 5031 and 5033) that covered the entire area and served as a pre-construction level for Stratum VII (Killebrew 1996a, INE5 south section; T. Dothan 1998a:151).[8] Founded directly on top of this fill, Stratum VII is dated to the early twelfth century and contained large amounts of PMP (Killebrew 1996a:16, 69).

Although the stratigraphic chronological picture is less clear at Ashdod, it still reflects that which is outlined above for Tel Miqne. In three excavation areas, namely, A, H, and G, a continuous LB to EI I sequence was uncovered; whereas in Area B, occupation only lasted until the end of the LB (M. Dothan 1971:15; Dothan and Porath 1993:15). In Area B in the center of the tell, local stratum 1 (= general Stratum XIV)[9] ended in a thorough destruction dated to the end of the thirteenth century (Dothan and Freedman 1967:81). The pottery is characterized by transitional LB/EI I forms and includes Cypriote and Mycenaean imports (Dothan and Freedman 1967:81–83; M.

[7] For the dating of White Painted Wheelmade pottery to the LH IIC and IIIA Periods, see Kling 1984, p. 35, 1989, pp. 64–68; Sherratt 1991, pp. 186–87.

[8] It is apparently this layer that Finkelstein refers to as "post-Mycenaean IIIB/pre-Monochrome" (1995:223; 1998b:144); however, based on the preliminary reports he has cited (Killebrew 1984:8–9, 25, section INE5, west subsidiary; T. Dothan 1989a:2), it is difficult to understand how this could be construed as an intermediate stratum. Sherratt conceives of these loci in a similar fashion, seeing in them a "considerable interval" between the last Mycenaean and Cypriote imports and the construction of the Stratum VII city (1998:293, n. 3; see also Redford 1992:290, n. 29). In that it was a leveling fill for an Early Iron I construction phase, it should not be surprising that the pottery appeared mixed with both LB forms and some PMP (T. Dothan 1998a:151; Killebrew 1998a:383, n. 6). In the expanded Field I excavations, the LB/EI I transition was clearly without such an intervening phase, thereby effectively dispelling this "phantom" stratum (S. Gitin, pers. comm.). More recently, Finkelstein seems to have softened his earlier stance regarding the existence of a "post-Mycenaean IIIB/pre-Monochrome" stratum: "At Ashdod and Tel Miqne the Monochrome stratum was built over the destroyed 20th-Dynasty city" (Finkelstein and Miller 1998:1).

[9] Local strata 14 (Area A), 1 (Area B), and 7 (Area H) correspond to general Stratum XIV, the period of the final Canaanite settlement. For this period, Area G was excavated according to the general Stratum sequence. For the local strata corresponding to the initial Philistine settlement, see Chapter 3, p. 79, n. 4.

Dothan 1979:126).[10] The floors and pits of stratum 1 contained a number of Mycenaean sherds that correspond to Furumark types (1941) assigned to the LH IIIB (Dothan and Freedman 1967:fig. 24; Leonard 1994:203).[11]

Farther upslope from Area B is Area A where the LB to EI I sequence was preserved in a small exposure. Stratum XIV (= stratum 14 in Area A), which consisted of a 0.85-m thick destruction layer, contained two White Slip II milk bowl sherds and a fragment of a Mycenaean fiddle (= *phi*) figurine (M. Dothan 1971:25, fig. 1.3, Pl. 8:3) of LH IIIA–B type (Leonard 1994:137). Above this destruction was a 0.80-m thick debris layer, which contained predominantly LB pottery with some Mycenaean and Cypriote imports, as well as two possibly intrusive Philistine sherds (= local stratum 13, general stratum unassigned). Above this layer, in stratum 12 (= general Stratum XIII), there was a 0.10- to 0.50-m thick layer with what appear to be fragments of PMP kraters and bowls (M. Dothan 1971:26–27, fig. 1), but no imports. Unfortunately, there were no architectural remains in any of these strata, thus frustrating efforts to form a coherent stratigraphical picture. The earliest structures associated with Philistine pottery in Area G appear in strata 11–9 (= general Strata XII–XI) (27–31).

On the western slope of the acropolis, Area H has an almost continuous sequence from the LB II to Iron II Period. The end of the LB is represented by the ephemeral local stratum 7 (= general Stratum XIV) which produced imported Cypriote and Mycenaean

[10] Gittlen has argued that the importation of Cypriote pottery into the Levant ended before the close of the Late Bronze Age (Gittlen 1977:354, 522; 1981:51–52), which would render such imports less sensitive chronological indicators than Mycenaean pottery when found at Levantine sites. Cf., however, A. Mazar, who feels that Cypriote imports only *decreased* (italics mine) during the thirteenth century (1990:293, n. 26).

[11] Warren and Hankey date LH IIIB from 1340/1330 to 1185/1180, which corresponds to from the end of Horemheb's reign to at least the reign of Tausert (1989:169, Table 3.1; Hankey 1987:50–51). Mountjoy gives absolute dates of from 1300 to 1190 for LH IIIB (1986:8), and follows French in dividing the period/style into IIIB1 and IIIB2 (1967a; 1967b; 1969).

sherds (M. Dothan 1971:155, Pl. 75:5, 7). The two Mycenaean sherds correspond to types common in the LH IIIB and IIIC (Leonard 1994:120). Local stratum 6 (= general Stratum XIII), which is considered to be transitional LB/EI in date, contained one fragment of imported Cypriote pottery (M. Dothan 1971:156, fig. 82.5). Stratum 6 was partly destroyed and partly reused in Stratum 5, the latter of which "marks the beginning of a new stage in occupation of Area H" (159). A substantial building with parts of four rooms was found, inside of which was PBP (fig. 84, Pl. 77). No clear PMP phase appears in Area H.

On the northern side of the acropolis, Area G produced a continuous sequence of LB II to Iron I strata. Stratum XIV, which represents the final LB stratum, contained a few imported Cypriote and Mycenaean sherds, the latter datable to LH IIIB (Dothan and Porath 1993:48–49, fig. 12, Pl. 34; M. Dothan 1979:127). Stratum XIV "ended in an intense destruction" with ashy deposits as thick as 1.00 m in places, while elsewhere "there was no evidence of destruction during the transition from XIV and XIII" (Dothan and Porath 1993:53). Sealing Stratum XIV was floor 4106, on which were found 27 intact, Philistine monochrome bowls and an installation (= locus 4182) that may have been a kiln (54–55, fig. 14; M. Dothan 1979:128; 1988:296). In the rest of Area G, the full range of PMP types was found in Stratum XIIIb (Dothan and Porath 1993:56–58, figs. 15–17).

The best sequence at Ashdod for the Late Bronze to Early Iron Age transition, then, can be found in Area G: at a time when the LB II city was still receiving Mycenaean imports, it was destroyed and then sealed by floors on which were found large amounts of PMP. The sequence is not as clear in Areas A/B and H, but the

evidence does not contradict the discoveries made in Area G. It is important to note that this is the same sequence that was excavated in Field I at Tel Miqne and which, thus far, appears also to be the case at Ashkelon.

Even more damaging for the "Low Chronology" of Finkelstein *et al*. are the Egyptian finds from Tel Ashdod. A number of scarabs, scaraboids, and scarab impressions were found at the site, most of which date to the Hyksos Period or the Eighteenth and Nineteenth Dynasties (Brandl 1993). Many of these were found in Stratum XIII or later Iron Age deposits, but belong in date to Stratum XIV or earlier (nos. 6–7, pp. 133–38), thus attesting to strong Egyptian connections during the Late Bronze Age. There is one scarab, however, which, if from a contemporaneous context, would render Finkelstein's chronology very unlikely. Found in a secure Stratum XII context,[12] it bears the royal prenomen of Ramesses III (*Wsr-M3`t-R` mri-Imn*),[13] and may indicate that PBP, or more likely PMP, was being produced during this pharaoh's reign (no. 13, pp. 138–39; see also M. Dothan 1988:297, n. 7; Dothan and Dothan 1992:152; Bietak 1991:37, n. 19, 43, Ill. 2).

[12] The scarab was found in locus 4012, a fill used "to strengthen and broaden the base of the city wall" (W4103 and 4017) (Dothan and Porath 1993:71). The fill (= locus 4012) in between the walls "was laid down in layers and contained a considerable number of sherds from Strata XIIIb and XIIIa," and "the upper part of the fill between W4103 and W4017 included sherds typical of both Strata XIIIa and XII, with a preponderance of Stratum XII material" (70) (for Philistine pottery from this locus, see figs. 26.5, 9; 27.4; 28.2–3; 29.4; 30.1, 5–6; 32.3; for Mycenaean imported pottery, see figs. 26.8, 12). Therefore, it is possible that the scarab's original context was in Stratum XIII. In Stratum XI this area between the walls and above locus 4012 became an alleyway (87).

[13] Scarabs with the same prenomen have been found at Tell el-Far'ah (S) from Cemetery 900 in Tomb 984, which also contained scarabs from the reigns of Thutmose III to Ramesses VIII (Starkey and Harding 1932:26, Pl. 57:374), and from Tell el-Yahudiyeh (Griffith 1890:Pl. 11:22; Petrie 1917:Pl. 45:6–10).

The dearth of Twentieth Dynasty finds from the southern coastal plain is of great significance for the chronology of the Philistine settlement.[14] The strategic location of Philistia along the coastal route would have been of the utmost importance for any Egyptian ruler attempting to regain control of the larger region (Weinstein 1992:148; Bietak 1993:298; Stager 1995:335). Egypt's apparent absence in Philistia at this time requires an explanation, especially when compared to the preceding period of Egyptian activity in southern coastal Canaan during the Eighteenth and Nineteenth Dynasties.

Egyptian interest and activity in southern coastal Canaan during the Late Bronze Age is manifest: according to the Amarna texts (EA 289, 296) and the Taanach tablets (Albright 1944), Gaza functioned as an Egyptian administrative center in the fifteenth century. During the Nineteenth Dynasty, it was often referred to as "the town of Canaan," or simply as "the Canaan," thus indicating its importance to Egypt at this time (Katzenstein 1982:112). Gaza appears in texts as "the Canaan" as late as Ramesses III, who reports in Papyrus Harris I:

> I built for thee (= Amon) a mysterious house in the land of Djahi . . . (named) 'the House of Ramses-Ruler-of-Heliopolis' — life, prosperity, health! — in the Canaan . . . The foreigners of Retenu come to it, bearing their tribute before it, according as it is divine. (J.A. Wilson in ANET 260–61)

Unfortunately, there has been very little excavation of the tell of Gaza, as noted earlier (see Chapter 3, p. 85), mostly because of its location beneath the modern city;

[14] Most scholars exclude this region from the areas of direct Egyptian control during the first half of the twelfth century. They either place this region in the hands of the Philistines as enemies (Stadelmann 1968; Helck 1979:141f; Weinstein 1992:46, 48; Bietak 1993:298–302; Stager 1995:340–44), or, following the report of P. Harris I and adhering to the "Albright/Alt" paradigm, as garrisoned settlers (*e.g.*, Singer 1988b:6). Those endorsing the "Low Chronology" naturally contend that there was no Philistine settlement at all during this period (Ussishkin 1985:222–23; Finkelstein 1995:216).

however, what has been discovered is not inconsistent with what is known from ancient texts (Garstang 1920; Phythian-Adams 1923a; 1923b; see Chapter 3, pp. 85–86).[15]

Ashkelon also fell within Egypt's sphere of influence during the Late Bronze Age: in the Amarna Period, Yidya, ruler of Ashkelon, adopts the customary obsequious tone in his correspondence with Pharaoh (EA 320, 322). During the Nineteenth Dynasty, in the fifth year of his reign (= 1207), Merneptah laid waste to Ashkelon as part of his punitive campaign in southern Canaan, which is recorded in the famous "Israel Stela":

> The princes are prostrate, saying "Peace!" Not one is raising his head among the Nine Bows. Now that Tehenu (Libya) has come to ruin, Hatti is pacified; The Canaan has been plundered into every sort of woe: Ashkelon has been overcome; Gezer has been captured; Yano'am is made non-existent. Israel is laid waste and his seed is not; Hurru is become a widow because of Egypt. (translation taken from E.F. Wente Jr. *apud* Stager 1985a:56)

Finally, the name Ashkelon appears on an ivory plaque found at Megiddo in Stratum VIIA (Loud 1939:12, Pl. 63:379–82). As the plaque apparently indicates, a songstress by the name of Kerker performed in the temple of Ptah at Ashkelon ("the Singer of Ptah, South-of-His-Wall, Lord of the Life of the Two Lands, and Great Prince of Ashkelon, Kerker"; J.A. Wilson 1939:13–14; ANET 263).[16] The hoard that contained this inscription dates from the mid-thirteenth to the mid-twelfth century, the lower

[15] Also, two architectural fragments bearing the cartouche of Ramesses II were found south of Gaza during road construction work (Giveon 1975:247–48).

[16] Either "Kerker" was originally attached to the Temple of Ptah known as "South of His Wall" in Memphis, and later came into the services of the "Great Prince of Ashkelon" (Helck 1971:444), or there was a temple to Ptah at Ashkelon, and "Great Prince of Ashkelon" is a hitherto unattested epithet of the god (Giveon 1978a:23). Ahituv feels that the king of Ashkelon, who was already under Egypt's sway, had been deposed after which time Ptah became the symbolic ruler of the city (1978:95).

chronological limit provided by the cartouche of Ramesses III on a model pen case (Barnett 1982:26; Singer 1988/89:102).[17]

During the early British excavations at Ashkelon, fragments of Nineteenth Dynasty alabaster vessels and a basalt statue bearing a hieroglyphic inscription were found, along with imported Mycenaean and Cypriote pottery (Phythian-Adams 1921b:168; Stager 1993:107). In the modern excavations, an ivory inlay with Egyptian scene and a fragmentary alabaster jar were also found in the same context with imported Mycenaean and Cypriote pottery (Stager and Esse 1987:68). Although the recent excavations at Ashkelon have not yet achieved a broad exposure of LB II strata, the emerging picture is consistent with the rest of the evidence from Philistia: Egyptian presence up until the beginning of the Twentieth Dynasty followed by destruction levels, and then the appearance of the typical Philistine material culture without signs of Egyptian intervention (Bietak 1993:300).

As already noted (see p. 227 above), Tel Miqne was a small 2.50-ha site during the Late Bronze Age and, therefore, of lesser concern to New Kingdom pharaohs than the other, larger Pentapolis sites at this time. Tellingly, the site does not appear in Egyptian texts from any period.[18] Despite its backwater status, Tel Miqne still received Egyptian luxury items, falling as it did within the Nineteenth Dynasty's sphere of influence. In Field I, Stratum VIIb (= thirteenth century) the following items were found: a Nineteenth Dynasty seal and faience scarab, an Egyptian-style calcite "tazza"

[17] According to Singer, the Temple of Ptah at Ashkelon was built following the conquest of the site by Merneptah, therefore after 1207 (1988b:3). Prior to the re-dating of the Karnak relief to the reign of Merneptah (Yurco 1978:70), Alt reached a similar conclusion but was uncertain as to whether to date the temple's construction to after the conquest of Ashkelon by Ramesses II or to the reign of Merneptah (1953:225, n. 3).

[18] For the appearance of "Adon King of [Ekron . . .]" in a late seventh-century Aramaic text addressed to Pharaoh, see Porten 1981.

(= footed goblet), an Egyptian-style "beer bottle" and bowl, and a Hathor plaque (Killebrew 1996a:56, 249; Dothan and Gitin 1993:1052; 1994:10). In Field X (which lacks the Late Bronze Age sequence), a scarab with golden mount and ring, probably dating to the reign of Amenhotep III, was found in the construction of the massive, Stratum VIIb, mudbrick, wall fortification (Brandl 1998). No items that date to the Twentieth Dynasty have been found at the site.

As a coastal site along the Via Maris, Ashdod was undoubtedly of interest to New Kingdom Egypt, this despite the absence of the site's name in contemporary Egyptian records. Ashdod and Ashdodites figure prominently in the Ugaritic texts, thus indicating that Ashdod was active in Late Bronze Age maritime trade.[19] A large fortified building, which was in use throughout the Late Bronze Age (= Strata XVI–XIV), was excavated in Area G and identified as a "Governor's Residence" or palace (Dothan and Porath 1993:10, 39–49). According to the excavators, the plan of the building resembles known "Residences" from other Canaanite sites (cf. Oren 1984; James 1966:6), and the discovery of numerous Egyptian finds indicates an official Egyptian presence at Ashdod (Dothan and Porath 1993:10–11). Egyptian-type bowls (43), fragments of "flower pots" (46, fig. 11.24, Pl. 33:14), and alabaster vessels (49, fig. 12.15, Pl. 34:5,8), as well as a scarab of Thutmose III (132) were found in Area G.

A stone fragment, possibly from a doorjamb, bearing the inscription "Fanbearer on the Kings' Right Hand" (*t3i hw [hr] wnmy n nsw*), an honorific accorded only to high

[19] A merchant named Shukuna received various goods from Ashdod, including 2,000 shekels in weight of purple wool (RS 19.20). The gentilic *addd*[*y*] (= "Ashdodite") appears in alphabetic texts over 20 times at Ugarit attached to merchants or wholesalers, some of whom reside at the city (T. Dothan 1971:19). Cf., however, Na'aman who identifies "Ashdad" of the Ugaritic texts with Enkomi, and suggests that the name was transferred to Ashdod when inhabitants from Enkomi settled there during the twelfth century (1998:609–15).

officials in the pharaonic court, was found in a later context (= Stratum XIIB) in the same area. Nevertheless, it was dated to the Late Bronze Age and associated with the "Governor's Residence" (Kitchen 1993).[20] Other royal Egyptian finds include a cartouche of Ramesses II on an elongated glass inlay, perhaps belonging to a dagger hilt (Barag 1993), and part of a monumental statue with the same "Ramesses, Beloved of Amun" (Leclant 1971:259; Schulman 1993). Although both were found in secondary contexts (the latter from a survey between Tel Mor and Ashdod), they have been attributed to the period of the "Governor's Residence," when Egypt still played a dominant role in southern coastal Canaan.[21]

There are, then, three possible indications of Egyptian involvement at Philistine Pentapolis sites following the eighth year of Ramesses III's reign (1175), the date most commonly associated with the settlement of southern coastal Canaan by the Philistines. They are: 1) the scarab of Ramesses III found in Stratum XII (= Iron I) in Area G at Ashdod; 2) the report in Papyrus Harris I concerning the construction of a temple to Amun at Gaza(?) during the reign of Ramesses III; and 3) the reference to a temple of Ptah at Ashkelon on an inscribed ivory from Megiddo that comes from a hoard dated to from the mid-thirteenth to the mid-twelfth century.

The chronological significance of the discovery of a scarab bearing the cartouche of Ramesses III in a context associated with PBP has already been discussed (see p. 231

[20] The inscribed stone came from a fill layer (= locus 4319) in a stratum that had much reused building material from the destroyed Stratum XIVcity (Dothan and Porath 1993:80–81).

[21] Part of an Egyptian stele, as well as Egyptian scarabs, amulets, and figurines were found in the Area C dump at Tell eṣ-Ṣafi during the British excavations (Bliss 1899a:197; 1899b:330–31; Bliss and Macalister 1902:40). Singer suggests the possibility of an Egyptian garrison at Tell eṣ-Ṣafi based on the presence of the stele, a situation paralleled at other sites with a clear Egyptian presence (*i.e.*, Beth Shean, Megiddo, Tel Kinneret, Timna') (1988b:6). Two scarabs and three Egyptian amulets were found in Area A (Bliss 1899a:194), and a scarab of Thutmose III was found in Area B (Bliss 1900:20). All of these finds are from vague contexts and of uncertain date.

above); however, this find is also relevant to the question of Egypt's role in the settlement of the Philistines. With this scarab in mind and following the report of Ramesses III in Papyrus Harris I ("I settled them in strongholds, bound in my name"; see J.A. Wilson in ANET 262), Moshe Dothan tentatively attributed Stratum XII to the garrisoning activity of Ramesses III (1988:297, n. 1). This reconstruction is largely based on the formerly held notion that PMP and PBP (here represented by Ashdod Strata XIII and XII) reflected two waves of Sea Peoples and their subsequent settlements (M. Dothan 1979:131; Dothan and Porath 1993:12; see also Chapter 1, p. 11, n. 2). The gradual shift from PMP to PBP in tight stratigraphical sequence at all three excavated Pentapolis sites indicates stylistic change over time within a single population group, rather than two pottery types introduced by successive incoming groups (A. Mazar 1985b:102–7; Singer 1985:112; Stager 1985a:62). Viewed in this way, Stratum XII represents the second phase of the Philistine settlement (*i.e.*, Bichrome Phase) and, therefore, is too late to be connected with Ramesses III's settling "them in strongholds."

There is also the possibility that this scarab predates Philistine pottery, Bichrome and/or Monochrome. The fill in which it was found contained material from Stratum XIII, and perhaps even Stratum XIV, as witnessed by the imported Mycenaean sherds (see p. 231, n. 12 above). Even if the scarab is contemporaneous with the Philistine settlement, its solitary appearance can hardly be taken as a sign of direct Egyptian involvement at Ashdod during the Twentieth Dynasty.

Ramesses III's reported construction of a temple to Amun in Gaza is at first glance difficult to reconcile with the "Stadelmann/Bietak" theory (see Chapter 2, pp. 75–76) of a complete Philistine takeover of southern coastal Canaan. There are, however,

ways of accepting Ramesses' claim that do no damage to the Philistine settlement at the traditionally held date of *ca*. 1175. In recounting the glorious deeds of Ramesses' reign, Papyrus Harris I does not provide dates for many of his activities. Therefore, it is possible that the temple to Amun was built at the beginning of his reign, and thus prior to the encounter with the Sea Peoples in Year 8 (Bietak 1993:294).[22] It is also possible that, as the southernmost Pentapolis city, and the one with the strongest ties to Egypt, Gaza did not fall into Philistine hands until later in the reign of Ramesses III. Lastly, the location of the temple to Amun is, literally speaking, in "the Canaan" (p3 K'n-'), which, although it often clearly indicates "Gaza" in New Kingdom texts, sometimes may simply mean "Canaan" (Weinstein 2001b). In any event, until the site is properly excavated, the political status of Gaza during this crucial period will remain open to speculation.

The Megiddo ivories that refer to a temple of Ptah at Ashkelon (J.A. Wilson in ANET 263), although from a context that may be dated as late as 1150, stylistically belong in the Late Bronze Age (see pp. 233–34 above).[23] Viewed as a thirteenth-century (or earlier) reference to an Egyptian temple at Ashkelon, this state of affairs fits well with the Nineteenth Dynasty's involvement in southern Canaan.

When one looks at the evidence most relevant to the date of the Philistine settlement — the Philistine sites themselves — the chronological picture is clear. At all

[22] Bietak, following the lead of Stadelmann (1968), views the Year 8 "Land" and "Sea" battle reliefs at Medinet Habu as representing a single event in the Eastern Delta, and from this concludes that the Philistines had already established a beachhead in southern Canaan, probably as early as Year 5 (1993:293; see also Peden 1994:23). Although this reconstruction of events reduces the available timeframe for the construction of the Amun temple at Gaza, it is no more than chronological hair-splitting. Bietak also suggests that the temple was merely renovated by Ramesses III (Bietak 1993:294), and Uehlinger offers evidence for the continuation of the cult under the Philistines (1988:15–20).

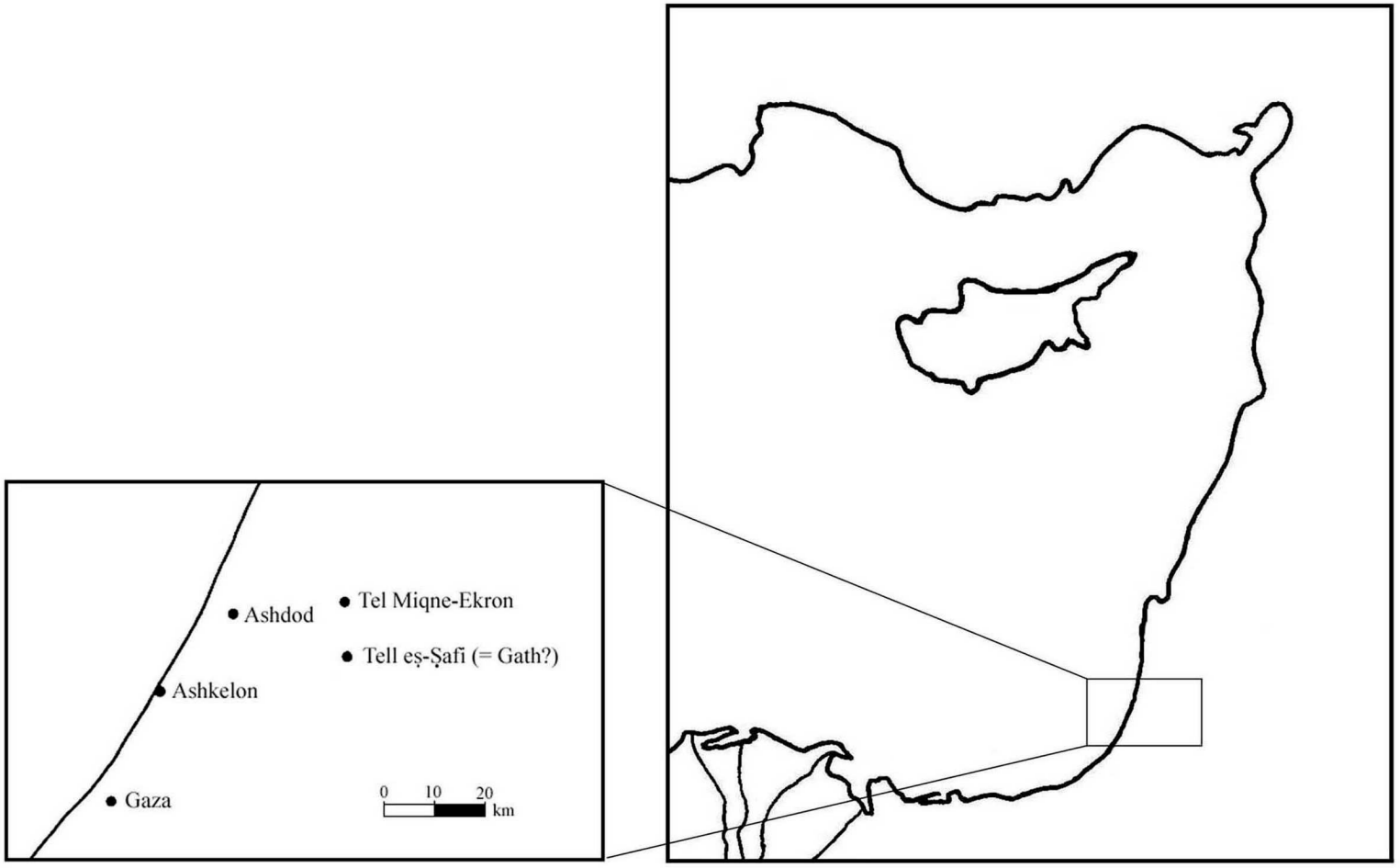
[23] Yadin, who later excavated at Megiddo, dated the ivory hoard and the building in which it was found to before the reign of Ramses III and, therefore, felt that most of the ivories belonged to the VIIB palace (1993:1013). Loud, who published the ivories, tentatively dated their manufacture to between 1350 and 1150 (1939:10).

three excavated sites (*i.e.*, Ashdod, Ashkelon, Tel Miqne) those strata with large amounts of PMP are directly above strata with imported Mycenaean and Cypriote pottery that can be dated to the end of the thirteenth/beginning of the twelfth century. The Egyptian evidence in twelfth-century Philistia, although silent, speaks even more loudly. The almost complete absence of Egyptian evidence datable to the Twentieth Dynasty at these same sites is incongruous with what is known about the attempts of Ramesses III to reassert Egypt's position in southern Canaan. Ramesside inscriptions are known from throughout Canaan in good twelfth-century contexts.[24] Because there is no gap at the Pentapolis sites between the Late Bronze and Early Iron Ages, the conclusion is inescapable that there was no Egyptian presence during the Twentieth Dynasty, for the simple reason that the Philistines were there instead.

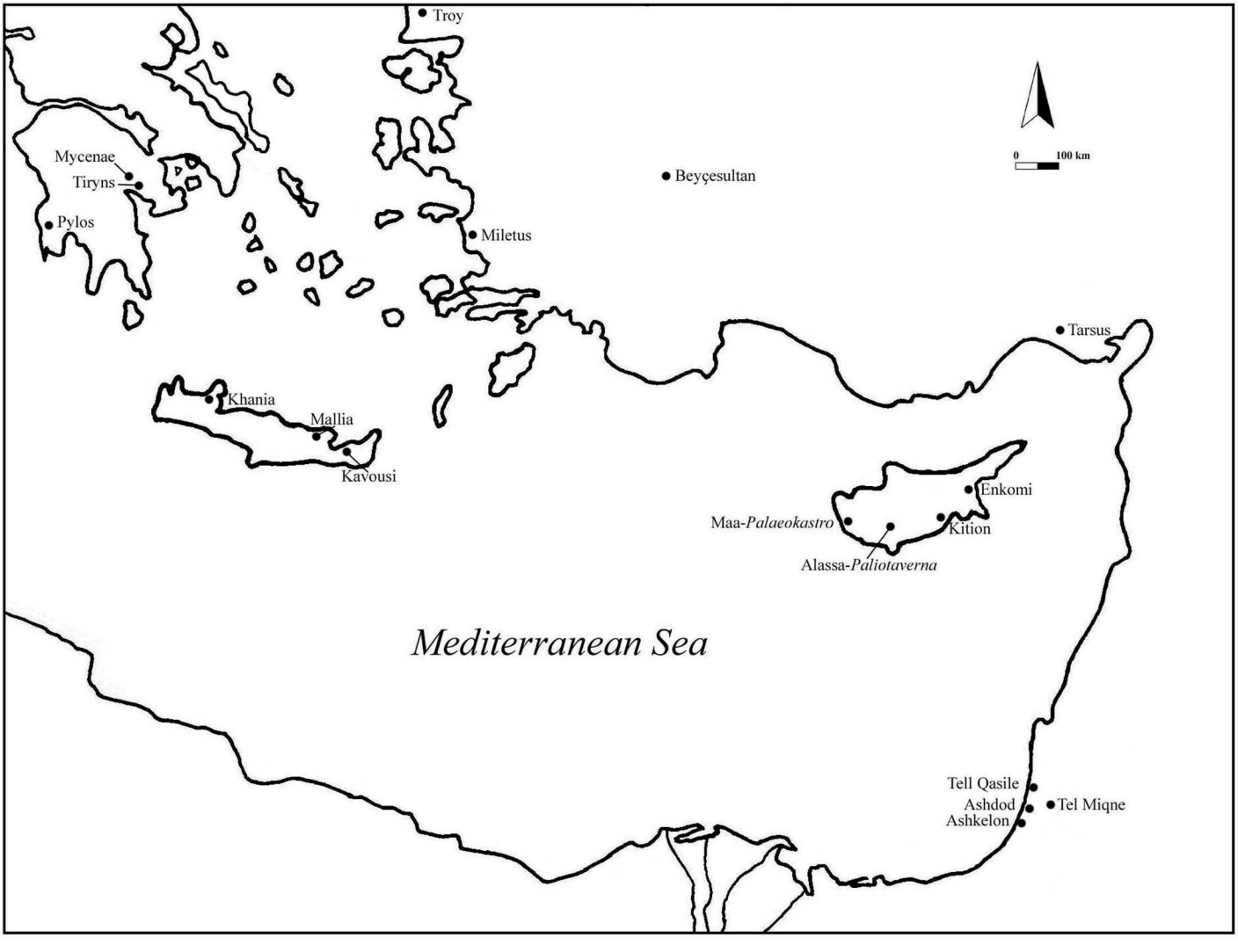
To argue, based on stratigraphical evidence from outside of the Pentapolis, that the Philistine settlement occurred some 50 years later is unnecessary, disingenuous, and, ultimately, wrong. There is, after all, a much less complicated explanation for the absence of Philistine Monochrome pottery at sites such as Lachish and Tel Sera': the maintenance of strong social, economic, political, and, most importantly, material culture boundaries between the Philistine heartland and the rest of southern Canaan still under Egyptian control (Stager 1995:340–44). Ample comparative data exists to support the reconstruction of such material culture boundaries (for references, see p. 226 above), and, by such an exercise, the traditional chronology of the Philistine settlement, which is founded on an abundance of archaeological evidence, remains intact.

[24] The two most important sites are those that figure most prominently in Finkelstein's arguments: Lachish Stratum VI and Tel Sera' Stratum IX, both of which produced finds from the reign of Ramesses III (1995:218–19). For the rest of the sites in Canaan with Twentieth Dynasty material, see Bietak 1991; 1993, fig. 3.

Appendix B. Maps, Tables, Charts, and Illustrations

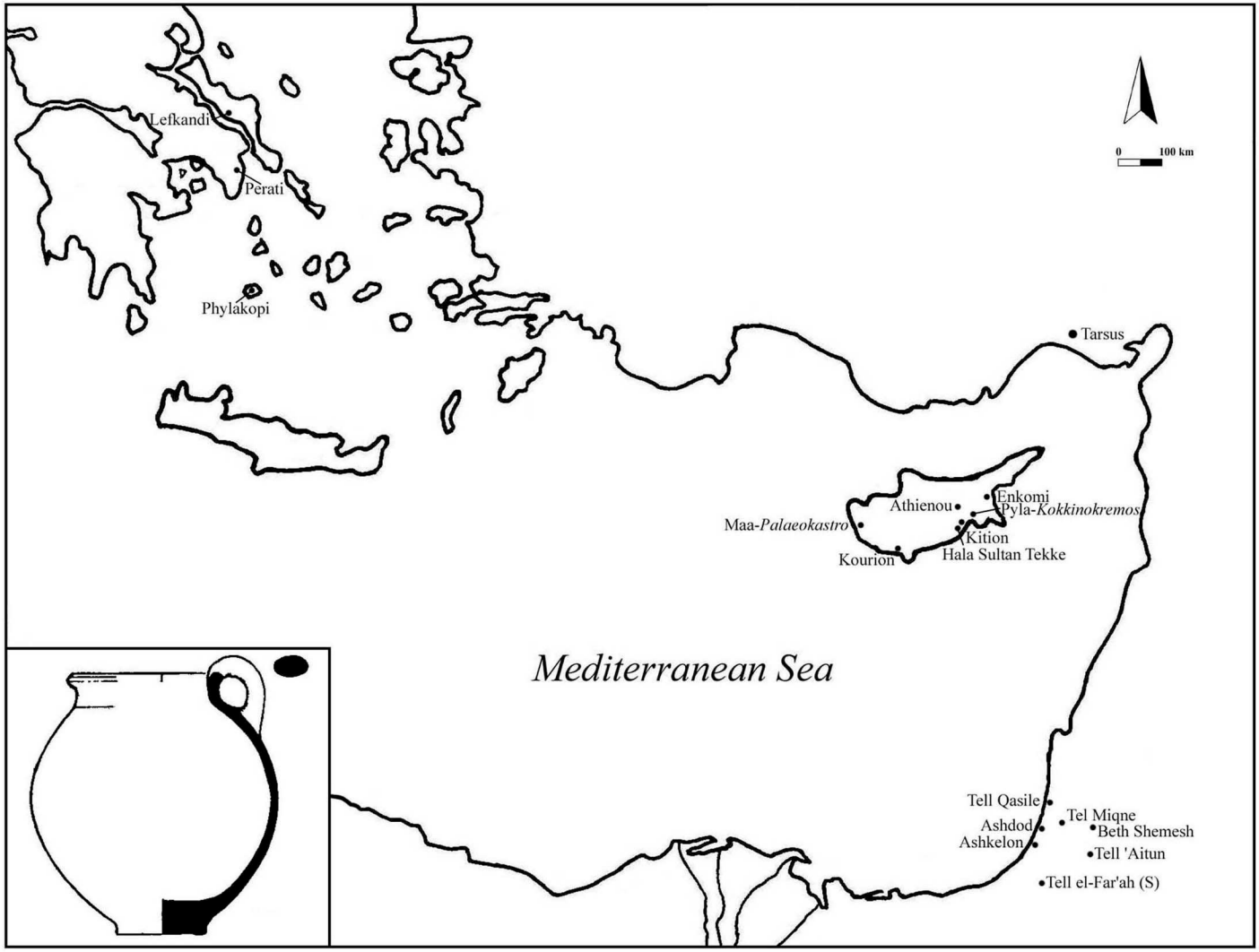


Map 1. The Philistine Pentapolis



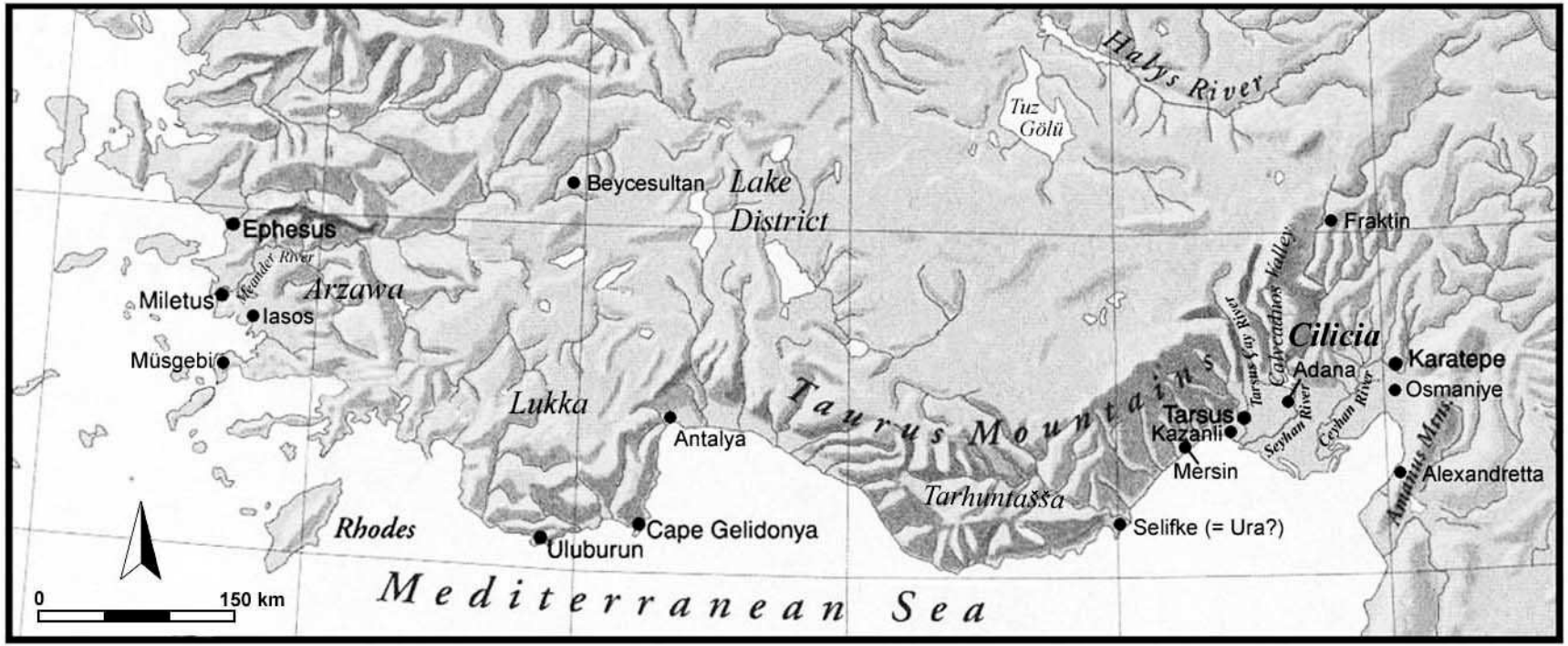
Map 2. Built Hearths in the Eastern Mediterranean during the Bronze and Early Iron Ages

Map 3. Unperforated, Unbaked, Cylindrical Loomweights in the Eastern Mediterranean

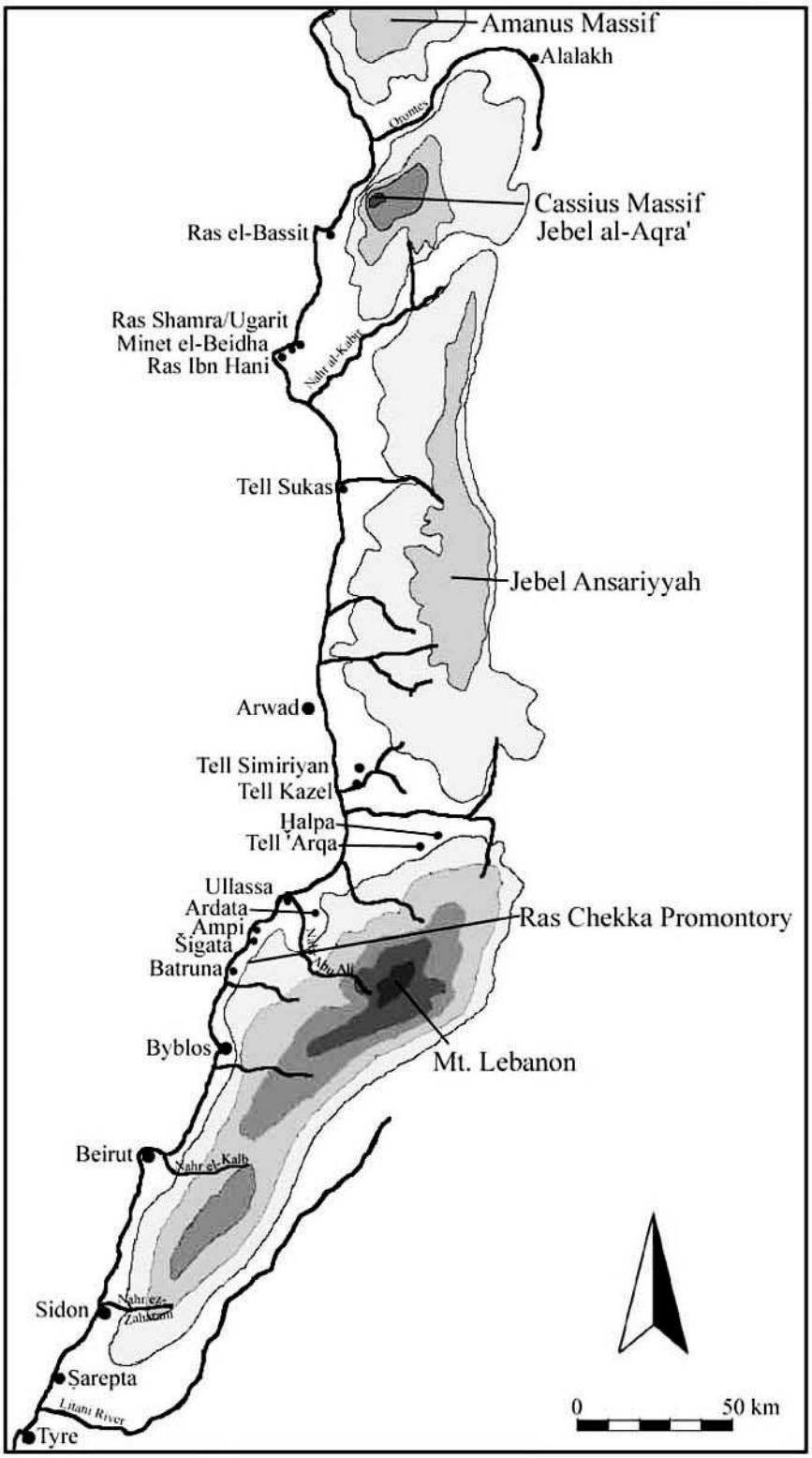


Map 4. "Aegean"-style Cooking Jugs in the Eastern Mediterranean

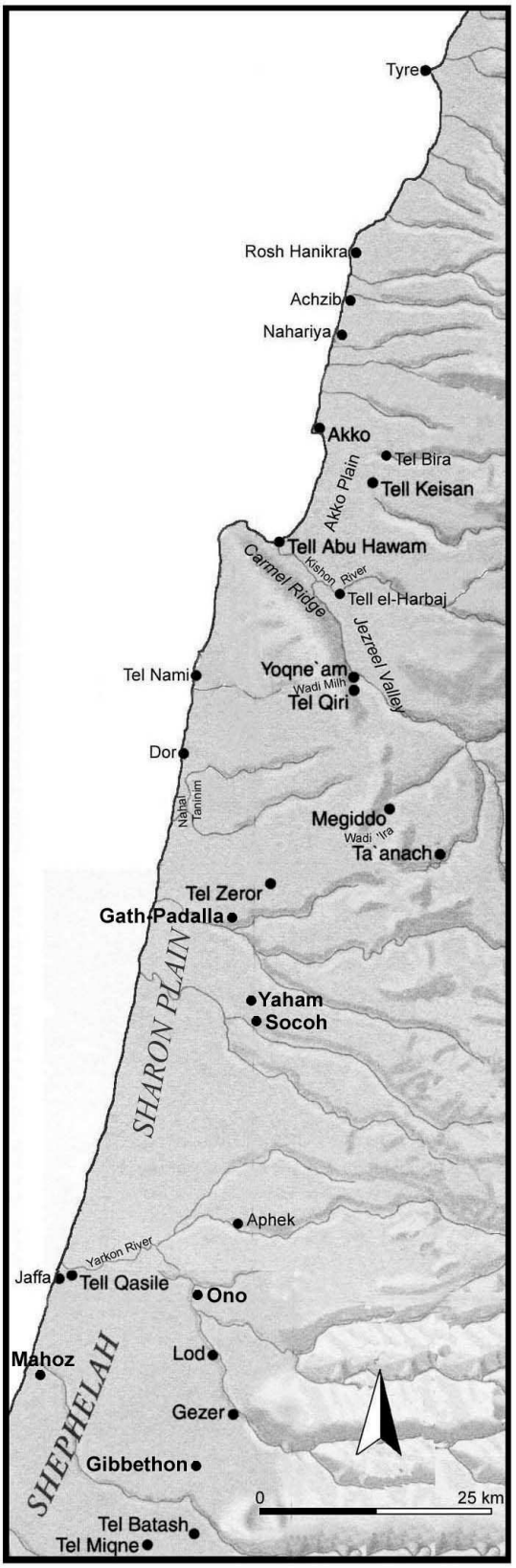
Map 5. Proposed Philistine Homelands in Relation to Southern Coastal Canaan



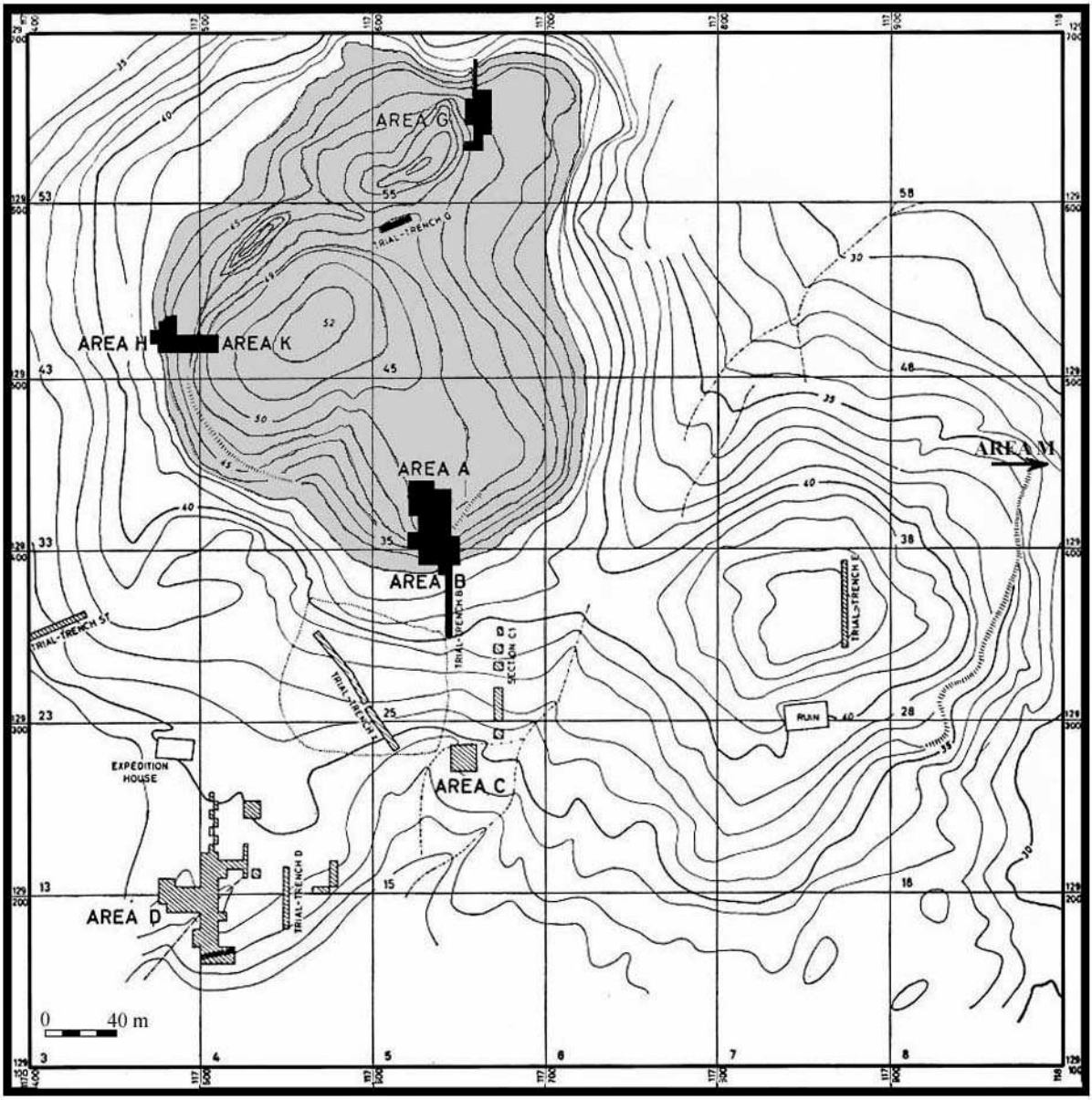
Map 6. Coastal Asia Minor and Cilicia at the End of the Late Bronze Age



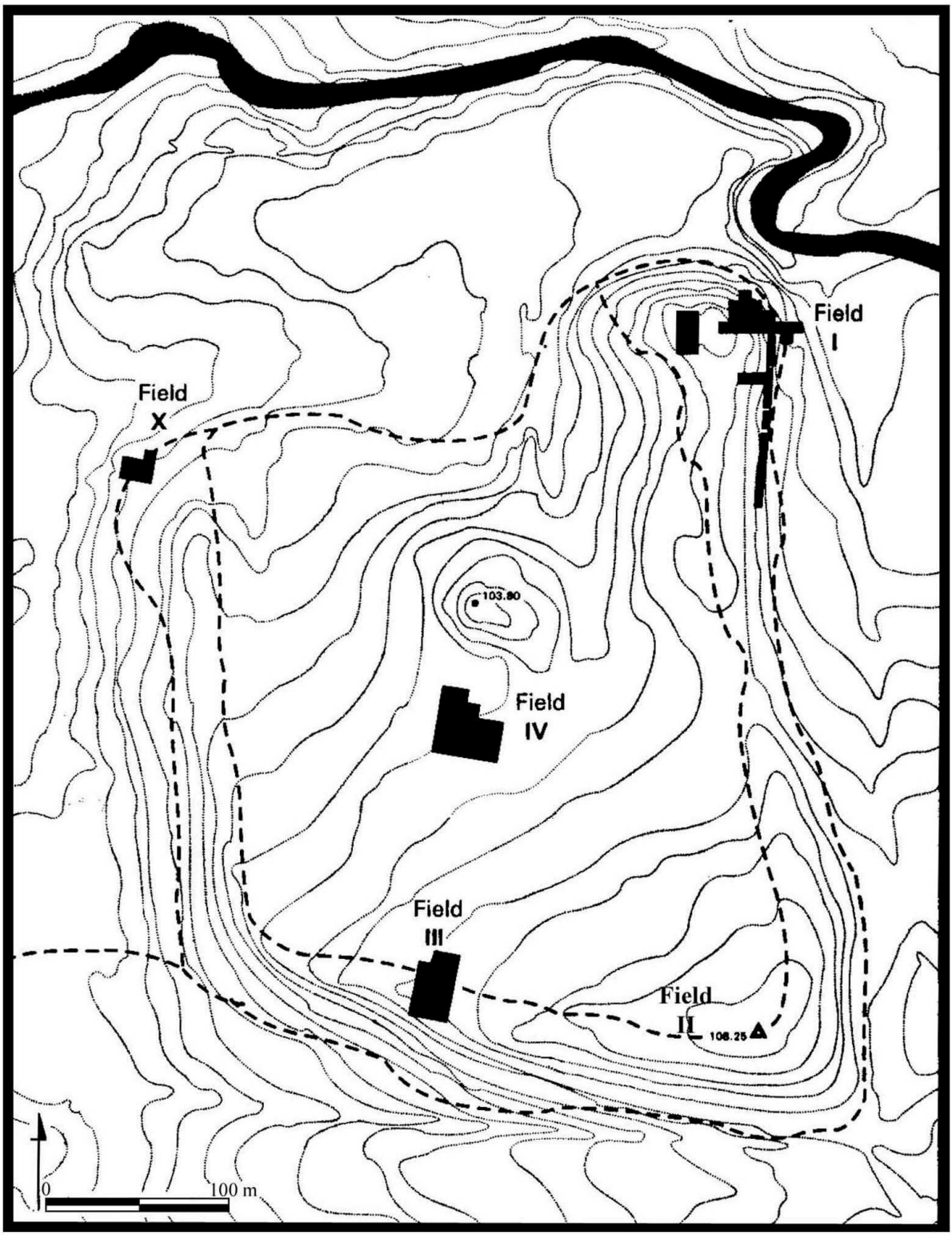
Map 7. The Coast of Syria and Lebanon
at the End of the Late Bronze Age



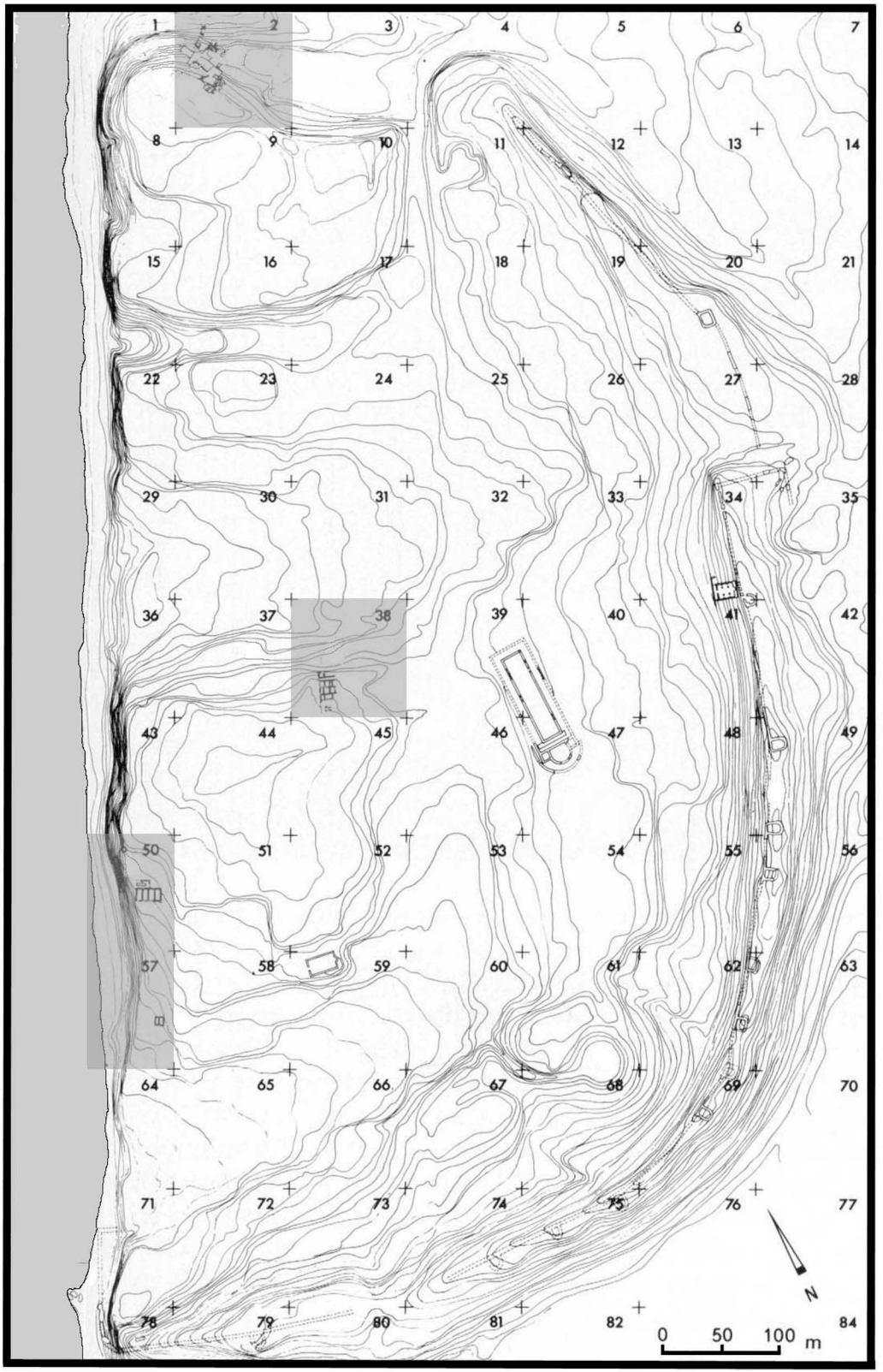
Map 8. The Coast of Israel at the End of the Late Bronze Age



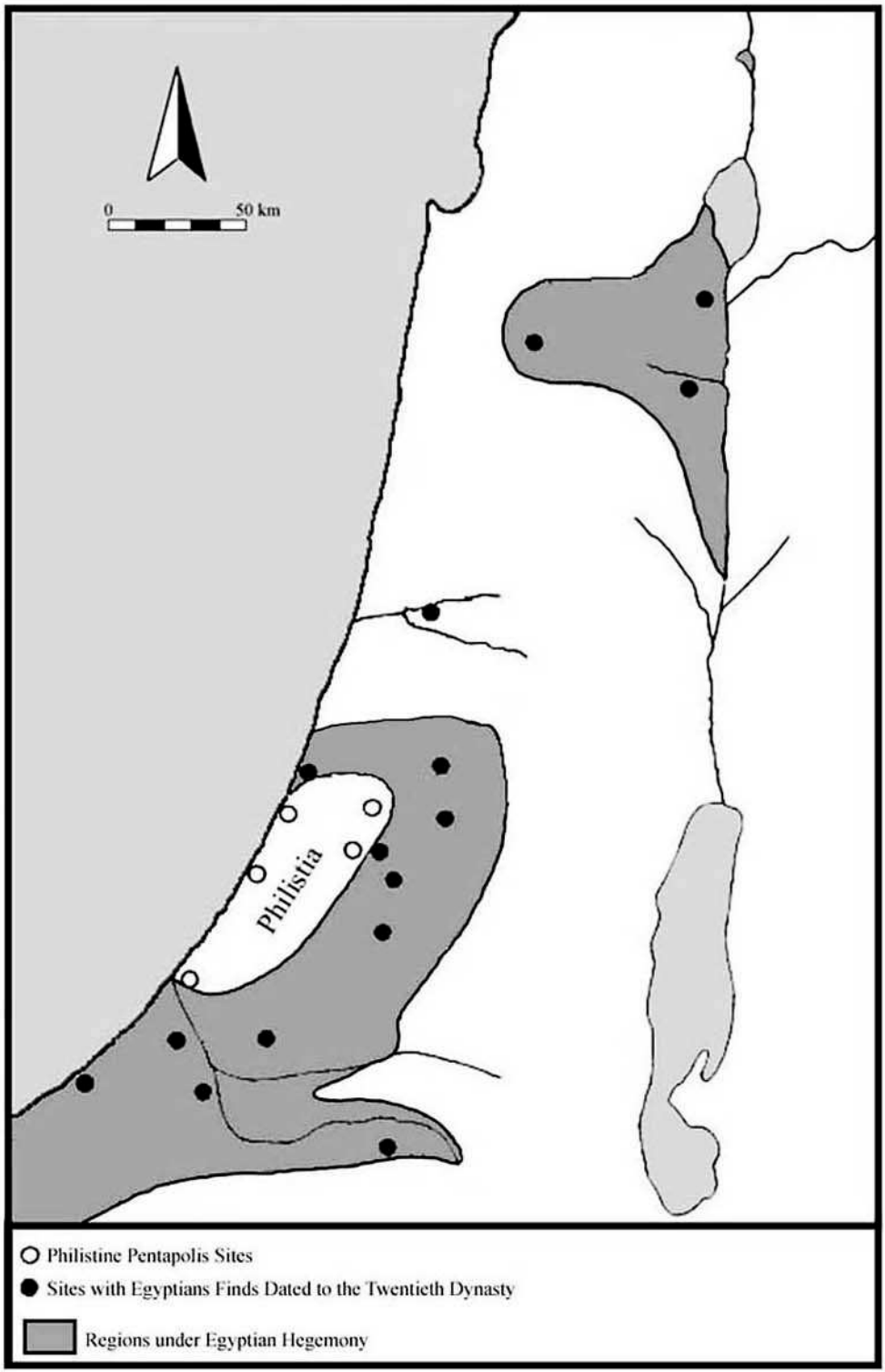
Map 9. Tel Ashdod (with Area of Initial Philistine Settlement Shaded)



Map 10. Tel Miqne-Ekron

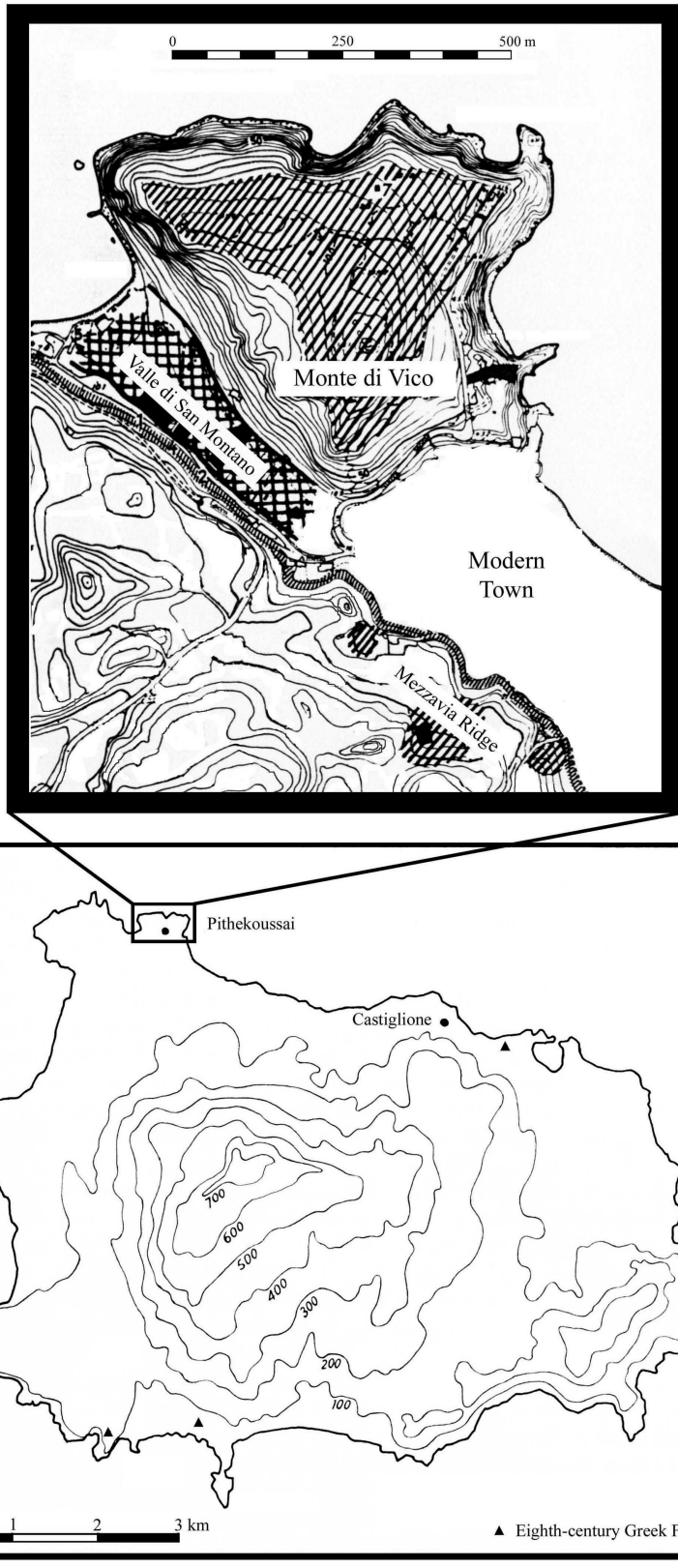


Map 11. Tel Ashkelon (with Areas Mentioned in the Text Shaded)



Map 12. Egyptian Presence in Canaan during the Twentieth Dynasty

Map 13. Early Greek Settlement in Magna Graecia and Sicily



Map 14. Pithekoussai

Table 1. Mycenaean IIIC Pottery Found at Sites in Syria-Palestine

Site	*Stratum/Date*	*Quantity*	*Reference*
Akko	End of thirteenth century	Parts of skyphos/bell-shaped bowl; several other fragments from bowls, stirrup jars, and a krater (seven fragments drawn)	M. Dothan 1989:60; Warren and Hankey 1989:163
Beth Shean	Stratum VI (UPenn excavations); Lower Stratum VI (Stratum S-3)/20th dynasty = Iron Age IA (Hebrew U. excavations)	Parts of two stirrup jars (UPenn); half of stirrup jar and some sherds (Hebrew U.)	Hankey 1966:169–71, Pl. 45; Warren and Hankey 1989:164–65; A. Mazar 1993a:216; 1998:45
Tell ʻAitun	Thirteenth century (Bunimovitz and Zimhoni); Iron Age/twelfth to eighth century (Dothan)	Two sherds and one bowl	Bunimovitz and Zimhoni 1993:111–12, n. 2; T. Dothan 1982a:44
Tel Haror	Stratum B-3/early twelfth century	Over 25% of the pottery in pits from this stratum is Philistine (both PMP and PBP)	Oren 1993a:582; Oren *et al.* 1989/90:70; Oren *et al.* 1991:12
Tel Haruvit	Destruction of Phase II	One bell-shaped bowl	Oren 1987:96
Tell el-Hesi (?)	Stratum VIII (Petrie)	One bowl	T. Dothan 1982a:88; Matthers 1989:62, fig. 13; Gibson and Rajak 1990:117; Petrie 1891:Pl. 8:128
Tell el-Jarisheh	Not given	Not given	Z. Herzog pers. comm. cited in Finkelstein 1995:222
Tell Keisan	Level 13 (post-1200 wave of destructions) (Balensi); group of pottery with LB IIB and Iron I (Warren and Hankey)	One stirrup jar	Balensi 1981; Warren and Hankey 1989:163–64; Humbert 1993:864
Megiddo (?)	Stratum VIIa = first half of twelfth century; sherd from tomb is part of an early Iron I assemblage	Large quantity reported by T. Dothan, many of which are unpublished; all those from tomb may be from same vessel (Guy)	T. Dothan 1982a:70–76; Raban 1991:18; Warren and Hankey 1989:164; Guy 1938:24, Pls. 8:1, 87:2
Tel Rehov	Stratum D3	Small sherd of bowl	Wolff 1998:776; Mullins 1999:7

Table 2. Built Hearths in the Eastern Mediterranean during the Bronze and Early Iron Ages

	Date/Stratum	*Shape/Construction*	*References*
Greece			
Mycenae	End of LH IIIB or IIIC	Circular (diameter = 3.70 m) with ring of stones enclosing a clay center; plastered with paint on sides; surrounded by four columns	Wace 1949:77, fig. 96a–c; Mylonas 1966:60–63, figs. 14–16
Pylos	End of LH IIIB	Circular (diameter = 4.00 m); clay construction covered by painted plaster; two-stepped, modeled edge and a broad flat curb/rim; surrounded by four fluted columns	Blegen and Rawson 1966:85–87, figs. 22, 66, 73, 404
Tiryns			
(Upper City)	End of LH IIIB or IIIC		Mylonas 1966:47, figs. 12, 51-55
(Lower City)	LH IIIB	Semicircular (diameter = 0.70 m); plastered clay construction	Kilian 1982:402, 405, figs. 12, 16
Asia Minor			
Beycesultan			
LB Megara	Late Bronze Age (= Level II)	Circular (diameter = 1.40 m); plastered and surrounded by a curb/rim; stone foundation	Lloyd 1972:11–13, fig. 3; Macqueen 1986:83, fig. 56
MB Megara	Middle Bronze Age (= Levels IVA and B)	Square (4.00 m x 3.50 m); surrounded by a curb/rim; embedded wooden post and plinth	Lloyd and Mellaart 1965:56, fig. A.24
EB Megara	Levels IX-VIII (Megaron A); Levels X–IX (Megaron B) = end of EB (third phase)	Oval and surrounded by a clay curb/rim (Megaron A); circular (diameter = 1.60 m), surrounded by clay curb/rim, with a rubble foundation and a plastered surface (Megaron B)	Lloyd and Mellaart 1962:59–61, fig. 22
Miletus	LH IIIA:2 to LH IIIB:1 (= Second Building Period)	Circular; clay construction	Niemeier 1998:30–31, figs. 8–9, photo 2
Tarsus	LB IIA	Rectangular (0.64 m x 0.80 m); 0.09 m-high rim with depressed center	Goldman 1956:54, fig. 193, plan 23
Troy	Early Bronze Age (= Phase IIC)	Circular (reconstructed diameter = 4.00 m); clay construction; 0.07m-high preserved platform	Blegen 1963:66, fig. 15 (for megaron)

Table 2 (continued)

Cyprus			
Alassa-*Paliotaverna*	LC IIIA	Square; set in middle of thin parapet wall; flanked by pilasters	Hadjisavvas 1994:108, 113, fig. 2, Pl. 15:1; Karageorghis 1998:279, fig. 3
Maa-*Palaeokastro*			
Room 75, Building IV	LC IIC (= Floor II)	U-shaped (external dimensions = 1.70 m x 0.85 m); foundation of pithos sherds; plastered mudbrick construction	Karageorghis and Demas 1988:41, Pl. 30:1–3, plan 7
Room 61, Building II	LC IIC (= Floor II)	Eliptical (1.50 m x 1.50 m); sherd foundation below plaster and burnt mudbrick construction	Karageorghis and Demas 1988:20, Pl. 26:6–7, plan 7
Enkomi			
"Megaron"	LC IIIA (= Level IIIA)	Square (1.20 m x 1.20 m); lower layer of red mud mortar, middle layer of broken pottery and upper layer of concrete; heavily burnt surface; traces of three surrounding posts	Dikaios 1969:175–76, Pl. 34:1, plans 273–74
Room 45	LC IIIA (= Level IIIA)	Rectangular (1.25 m x 0.90 m); red-brown mortar construction; upper surface covered with a mud, burnt, and covered with ashes; plastered sides	Dikaios 1969:183, plans 273–74
Room 46	LC IIIA (= Level IIIA)	Low platform with lower layer of sherds covered by hard plaster; traces of fire	Dikaios 1969:186, Pl. 33:5, plans 273–74
Room 77	LC IIIA (= Level IIIA)	Rectangular (diameter = 1.75 m x 0.50 m); paved with sandstone slabs; covered by thin layer of red mud mortar	Dikaios 1969:106, plan 254; Karageorghis 1998:277, fig. 1
Room 89A	LC IIIA (= Level IIIA)	Semicircular; hard plaster construction	Dikaios 1969:112–13, Pls. 19:4; 20:1, plan 254; Karageorghis 1998:277, fig. 1
Kition	LC IIIA:1 (= Floor IIIA)	Circular (diameter = 1.85 m); small pebble bedding with hard plaster surface; evidence of burning all around	Karageorghis and Demas 1985:64, Pls. 42:2, 70:2, plan 1
Crete			
Kavousi	Late Geometric	Apsidal; stone construction with stand at southern end and column base at northern end; orange-red clay inside	Gesell, Day, and Coulson 1995:109–11, figs. 18–19; Karageorghis 1998:277
Mallia	LM III	U-shaped	Pariente 1993:789; Driessen 1994:78
Khania	LM IIIC	Circular (diameter = 0.75 m); bedding comprised of 2 layers of sherds	Hallager and Tzedakis 1988:45, fig. 25

Table 2 (continued)

Israel			
Ashdod	Twelfth century (= Stratum XIII)	Square; plastered; located near two pillars in a central hall	A. Mazar 1991:97, n. 9; M. Dothan 1972:7
Ashkelon			
Grid 38L	Iron I/eleventh century	U-shaped (2.10 m x 1.30 m); mudbrick construction, possibly sealed by plaster; perhaps flanked by columns	Stager and Esse 1987:68; Bloch-Smith 1987; Karageorghis 1998:280
Grid 38U	Twelfth century (= local Phase 18)	Keyhole-shaped; stone-lined chamber filled with ash; mudbrick bin with traces of burning; built up against stone wall; stone pavement directly south of hearth	Bloch-Smith 1998
Tel Miqne-Ekron			
Stratum VIB	Twelfth century	Circular (diameter = 2.50 m); broad, flat, modeled rim; plaster coating	T. Dothan 1995:42, fig. 3.1–3
Stratum VII	Twelfth century	Rectangular; mudbrick construction; pebbled surface; attached to western wall of room and flanked by two pillars (first phase); paved with large sherds, located in center of room, and flanked by adjacent pillars (perhaps four in all) (second phase)	T. Dothan 1992a:96–97; 1998a:155–56, figs. 7–8; Gitin and Dothan 1987:203, 205
Stratum V	Eleventh century	Circular (diameter = 1.20 m); two superimposed, pebbled surfaces; plastered edges	T. Dothan 1998a:155–56, figs. 7, 9; Gitin and Dothan 1990:29–35
Tell Qasile	*ca.* 1150–1100 (= Stratum XII)	Keyhole-shaped (maximum diameter = 1.60 m); central, circular depression (diameter = 0.30 m) with white ash inside; narrower part of platform paved with storage jar fragments	A. Mazar 1986:3–6, figs. 2–3; Karageorghis 1998:279

Table 3. Unperforated, Unbaked, Cylindrical Loomweights in the Eastern Mediterranean

Site	*Date/Stratum*	*Quantity*	*Reference*
Asia Minor			
Troy	Twelfth century (Level VIIb2)	2	Blegen *et al.* 1958:152, 208, figs. 256.37-172-73
Greece			
Mycenae	n/a	n/a	Stager 1991:15
Tiryns	Second Settlement	1	Schliemann 1886:146, no. 70
Pylos	n/a	n/a	Stager 1991:15
Lefkandi	LH IIIC	Six shown, "many" reported	Popham and Sackett 1968:13, fig. 16
Thera	n/a	n/a	Christos Doumas, pers. comm. cited in Stager 1995:346
Cyclades	n/a	n/a	Christos Doumas, pers. comm. cited in Stager 1995:346
Cyprus			
Enkomi	n/a	n/a	Stager 1991:15
Kition	LC IIIA and Cypro-Geometric I (= 1050–1000)	Approximately 15	Karageorghis and Demas 1985:Pls. 20:1087; 34:1020, 1024; 57:1020, 1024; 117:5150–56; 195:5149–56; 201:5055a, 5060, 5088, 5102, 5106
Israel			
Ashkelon	Twelfth and eleventh centuries	150+	Lass 1994:32–33; Stager 1991:14–15, photo p. 15; Stager 1995:346, fig. 6
Miqne	Twelfth century	n/a	T. Dothan 1995:46–47
Ashdod	Early twelfth century (Stratum XIIIa)	3	Dothan and Porath 1993:64, fig. 24:3–5, Pl. 39:4
Megiddo	*ca.* 1150–1100 (Stratum VIa)	1	Loud 1948:Pl. 170:26

Table 4 (continued)

Table 4. "Aegean"-style Cooking Jugs in the Eastern Mediterranean

Site	*Date/Level*	*Context*	*Amounts*	*Reference*
Asia Minor				
Tarsus	LB II	Not given	Two shown	Goldman 1956:217, Pl. 324:1220–21, fig. 389.1220–21
Greece				
Perati	1165/60–1100 (= Period II, second phase)			Iakovikis 1969: Pl. 62:720
Lefkandi	LC IIIC (= Phase 1)	Not given	One, possibly two, shown	Popham and Milburn 1971:336, fig. 2.5 (and 2.6?, Pl. 52:2?)
Phylakopi	LH IIIB–C	Debris	Two shown	Mountjoy 1985:196, fig. 5.22.379, 207, fig. 5.29.543
Cyprus				
Athienou	Twelfth century (= Stratum II)	Courtyard pit with associated LH IIIC pottery	Described as "typical Stratum II cooking pots"	Dothan and Ben-Tor 1983:111–12, fig. 50:7–8
Enkomi	1220–1190 (= Level IIIA)	Area I, Floor II in room 12 of "Ashlar Building"	One shown	Dikaios 1969:Pl. 106:3
Kition	1050–1000	Area I, Floor I on floor of a room from domestic unit	One shown	Karageorghis and Demas 1985:23, Pl. 33:318
Maa-*Palaeokastro*	LC IIC:2–LC IIIA:1 (= Floors I and II)	Building III, Room 79D	Three shown; described as a "type that was in frequent use" (p. 226)	Karageorghis and Demas 1988:Pls. 60:692, 183:692, 60:578; 183:578; 109:387, 211:387
Pyla-*Kokkinokremos*	LC IIC:2	Not given	Two shown; described as "not uncommon" and "ordinary" (p. 52)	Karageorghis and Demas 1984:Pls. 20:102, 36:102, 20:104, 36:104
Hala Sultan Tekke	LC IIC/IIIA	Tomb (Chamber Tomb 22)	One	Åström 1983:152, fig. 409
Kourion	LH IIIA	Tombs	Five shown	Daniel 1937:70, Pls. 2:10, 20, 3:96, 5:8, 31

Broshi and Gophna 1984; Finkelstein 1988:331; Broshi and Finkelstein 1992; Broshi 1993a	250	Iron Age Palestine	Modern ethnographic study of Palestine, Yemen, and Khuzistan
Acre 1962	281	Modern Akko within Crusader and Turkish Period walls	Based on only residential space; factored out 110 dunams (out of 250 dunams, or 44.1% of total area) of open public space; average family size used = 4.4
Van Beek 1982	286 and 302	Modern village in Yemen	Five inhabitants per household for 2.5-ha abandoned village
Renfrew 1972	300	Aegean Bronze Age in general	Modifies R.M. Adams' estimate of 400 persons/ha for Sumerian cities and applies to less densely settled Aegean sites
Wilkinson 1974:50	370–1,114	Jerusalem from Jebusite to modern period	Based on water supply
Frankfort and Delougaz 1950	400	Modern Aleppo and Damascus	Modern census data
Packer 1967	400	Ostia	Average family size of four combined with 2/3 of city excavated (problem: Roman houses with undetermined number of storeys; as many as four possible)
Shiloh 1980	400–500	Iron Age Palestine	Eight inhabitants per household multiplied by the number of dwelling units at sites with wide exposures (*e.g.* ,Tell Beit Mirsim)
Zorn 1994	450	Tell en-Nasbeh, Stratum 3	Average family size of 4.5 multiplied by estimated number of buildings (= 200)
Frankfort 1948	480–800	Early Dynastic Ur and Eshnunna; Khafajeh *ca.* 1900	Twenty houses/acre, 200 sq. m/house, and 6–10 persons/house
Gulick 1967	500	Modern Tripoli	Multi-storied apartment buildings and six persons/household; 180,000 people living in 1.5 sq. m area.
Braidwood and Reed 1957	500	Mid-third-millennium Sumerian cities	Modern town of Erbil with 6,000 persons
Byatt 1973	1,000	Roman Period Jerusalem	Mostly Josephus' accounts with some modern ethnographic data

Table 5. Modern Methods of Estimating Population in the Ancient World

Reference	*Estimate (per ha)*	*Period/Site*	*Source*
Kenyon 1979	49	PPNA Jericho	Not given
Kenyon 1979	74	PPNB Jericho	Not given
Adams and Nissen 1972	100	Uruk Period Mesopotamia	Modern ethnographic study (unspecified)
R.M. Adams 1981	125	Early to Middle Uruk Period sites	For 360 ha of settlement; basis of estimate not given.
Kramer 1979	106.8	Modern villages in Kangavar area	Census of 30 modern villages
Kramer 1979	139	Modern village of Shahabad (pseudonym)	Modern census
Sumner 1979	147	Modern villages in Kur River Valley, Iran	For 110 modern villages (average size = 2.1 ha); observation that density decreased as size increased
Stager 1975	150–200	Small- to medium-sized towns in Iron Age Palestine	Refers to maximum for densely inhabited ancient cities (*i.e.* , Augustan Rome, Herodion Jerusalem), which are no larger than 200–300 ha in size
Finkelstein 1990	200	113 villages in the Land of Ephraim Survey	Based mostly on censuses from end of the nineteenth and first half of twentieth centuries CE; uses 4.5 persons per house
J. Russell 1958	190	Fourth-century CE Rome	Architectural remains
Biger and Grossman 1993	190 and 250–260	Modern Palestinian villages	Density varied based on settlement sizes and settlement regions; mean density significantly higher for villages in Shephelah and southern coastal plain (281 and 275 respectively)
R.M. Adams 1965	200	Diyala Plain in Early Dynastic Period	384 ha of recorded town and village settlement; 1.4 ha of cultivable land/person
Finkelstein 1996b	200	Late Bronze and Iron Age Philistia	Ethnohistorical and archaeological data
Marfoe 1980	200–250	Early Bronze II Arad	Based on estimate of number of houses (= 16), and roofed floor space per person (1 person/6 sq. m); also accounts for public spaces
Gremliza 1962	208	Modern census of the Dez pilot area in Khuzistan	Modern census
Watson 1979	240	Modern study of western Iran	Modern census

Table 5 (continued)

Broshi and Gophna 1984; Finkelstein 1988:331; Broshi and Finkelstein 1992; Broshi 1993a	250	Iron Age Palestine	Modern ethnographic study of Palestine, Yemen, and Khuzistan
Acre 1962	281	Modern Akko within Crusader and Turkish Period walls	Based on only residential space; factored out 110 dunams (out of 250 dunams, or 44.1% of total area) of open public space; average family size used = 4.4
Van Beek 1982	286 and 302	Modern village in Yemen	Five inhabitants per household for 2.5-ha abandoned village
Renfrew 1972	300	Aegean Bronze Age in general	Modifies R.M. Adams' estimate of 400 persons/ha for Sumerian cities and applies to less densely settled Aegean sites
Wilkinson 1974:50	370–1,114	Jerusalem from Jebusite to modern period	Based on water supply
Frankfort and Delougaz 1950	400	Modern Aleppo and Damascus	Modern census data
Packer 1967	400	Ostia	Average family size of four combined with 2/3 of city excavated (problem: Roman houses with undetermined number of storeys; as many as four possible)
Shiloh 1980	400–500	Iron Age Palestine	Eight inhabitants per household multiplied by the number of dwelling units at sites with wide exposures (*e.g.* ,Tell Beit Mirsim)
Zorn 1994	450	Tell en-Nasbeh, Stratum 3	Average family size of 4.5 multiplied by estimated number of buildings (= 200)
Frankfort 1948	480–800	Early Dynastic Ur and Eshnunna; Khafajeh *ca.* 1900	Twenty houses/acre, 200 sq. m/house, and 6–10 persons/house
Gulick 1967	500	Modern Tripoli	Multi-storied apartment buildings and six persons/household; 180,000 people living in 1.5 sq. m area.
Braidwood and Reed 1957	500	Mid-third-millennium Sumerian cities	Modern town of Erbil with 6,000 persons
Byatt 1973	1,000	Roman Period Jerusalem	Mostly Josephus' accounts with some modern ethnographic data

Table 6. Pig Consumption in the Eastern Mediterranean during the Late Bronze and Early Iron Ages

	Date/Stratum	*Percentage*	*References*
Greek Mainland			
Tiryns	LH IIIB2–IIIC	21.50%	von den Driesch and Boessneck 1990:93, 97, 104
Nichoria	LH IIIB2 to "Dark Age II"	23.00%	Sloan and Duncan 1978:67–68
Pylos	Late Helladic	31.78%	Nobis 1991:70
Lerna	LH III	38.00%	Gejvall 1969:Table 3
Greek Islands			
Akrotiri, Thera	Bronze Age	19.00%	Gamble 1978:747, Table 2
Phylakopi, Melos	Level IV (= *ca.* 1400–1100)	20%	Gamble 1982:168, Table 13.9
Aghia Irini, Keos	Bronze Age	40.00%	Coy 1973:241
Crete			
Kastro (Kavousi)	LM IIIC to Subminoan	8.80%	Klippel and Snyder 1991:180
Vronda (Kavousi)	LM IIIC to Subminoan	15.90%	Klippel and Snyder 1991:180
Knossos ("Unexplored Mansion")	LM IIIA2	23.60%	Bedwin 1984
Kommos	LM III	28.40%	Reese 1995:179, D32Table 5.3
Cyprus			
Phlamoudhi-Melissa	LC II	0%	Hesse, Ogilvy, and Wapnish 1975
Kalopsidha	Late Bronze Age	0%	Gejvall 1966
Kouklia, Paphos	Late Bronze Age	0%	Halstead 1977
Hala Sultan Tekke	Late Bronze Age	4% (Ekman), 7.6% (Jonsson)	Ekman 1977:168; Jonsson 1983:222–23
Israel			
Tel Miqne	Iron I	18% (Hesse), 13% (Lev-Tov)	Hesse 1986:21–22, Table 4; Lev-Tov 2000:131, Table 7
Ashkelon	Twelfth century	19%	Hesse 1986:23, Table 4; Hesse and Wapnish 1997:248

Table 7. Ship Cargo Capacities in the Ancient Eastern Mediterranean

Ship	*Date*	*Weight of cargo*	*Source of Data*	*References*
Elissa and Tanit	*ca.* 725	10 tons	Amphora cargo	Gore 2001:91–93
Uluburun	*ca.* 1315	15 tons	Preserved cargo	Pulak 1991:8
Kyrenia	*ca.* 310–300	25–30 tons	Estimate based on hull remains and preserved cargo	Steffy 1985:100; Katzev 1989:4
Alonnesos	*ca.* 400–380	120 metric tons	Amphora cargo	Hadjidaki 1997:132
Cargo ships in general	1550–1200	200 tons	Weight of anchor	Frost 1985:292
Ship requested in RS 20.212	*ca.* 1190	225 or 450 tons	Ugaritic text RS 20.212	Nougayrol 1960:165
Obelisk barge from reign of Hatshepsut	1473–1458	4,800 tons	Weight of obelisks	Habachi 1957:99; Landström 1970:129

Table 8. Ship Dimensions in the Ancient Eastern Mediterranean

Ship	*Date*	*Dimensions*	*Source of Data*	*References*
Cape Gelidonya	*ca.* 1200	10 m long	Distribution of cargo on seabed	Bass 1967:45
Kyrenia	*ca.* 310–300	14 m long, 4.66 wide	Hull remains	Steffy 1985:100; 1994:fig. 3-38
Uluburun	*ca.* 1315	15 m long	Distribution of cargo on seabed	Pulak and Bass 1997:266
Sahure	2458–2446	17.50 m long	Number of rowers	Landström 1970:65
Elissa and Tanit	*ca.* 725	18 m long	Amphora distribution	Gore 2001:91–93
Cargo ships in general	1550–1200	20 m long	Weight of anchor	Frost 1969:434–35; 1985:292
Expedition to Punt	1473–1458	23 m long	Number of rowers	Wachsmann 1995:22; 1998:24
Alonnesos	400–380	25 m long, 10 m wide	Amphora distribution	Hadjidaki 1997:125, fig. 2
Late Bronze Age galleys	1550–1200	30 m long	Number of rowers	*interscalmium* -based calculation
Cheops I	2551–2528	37.50 m long, 7.00 m deep	Actual dimensions of Southern, "North-South," Solar-Boat	S.B. Hassan 1946:64
Geometric Period pentekontors	1050–750	38 m long, 4 m wide	Ship proportions in contemporary vase paintings and models	Casson 1991:54–55
Snefru	2575–2551	45 or 52.50 m long (= 100 cubits)	Textual reference	ARE I §146–47
Tale of the Shipwrecked Sailor	2040–1991 (Dynasty 11)	54 or 65 m long (120 cubits; 18 or 21 m wide (40 cubits)	Textual reference	Erman 1906; Simpson 1973:51, 53
Obelisk barge	1473–1458	95 m	Length of obelisks (57 m each)	Landström 1970:129

Table 9. Crew Sizes in Ancient Eastern Mediterranean

Ship	*Date*	*Size of Crew*	*Source of Data*	*References*
Syrian merchantman	1427–1401	6	Wall painting from Tomb of Nebanum	Norman de G. Davies 1923:Pl. 31; Säve-Söderbergh 1957:Pl. 23
Syrian merchantman	1391–1353	11	Wall painting from Tomb of Kenamun	Davies and Faulkner 1947:Pl. 8
Ugaritian ships	*ca.* 1190	18	Ugaritic tablet KTU 4.40	Hoftijzer and van Soldt 1998:337
Egyptian warships	*ca.* 1175	20–30	"Naval Battle" scene from Medinet Habu	Nelson 1930:Pl. 37
Pylian ship (triaconter?)	*ca.* 1200	30	Linear B tablet An 1	Chadwick 1987:79; Palaima 1991:285; Wachsmann in press:492
Nile River ship	1290–1224	26–40	Papyrus Leiden I 350	Janssen 1961
Aegean penteconters (in general)	1300–1050	50 (rowing crew)	Depictions of ships; Homer	Alexiou 1972:fig. 1; Korrés 1989; Dakoronia 1990:fig. 2; *Il.* II.718–20, XVI.169–70; *Od.* X.203–9, VII.34–36, 48
Boeotian ships	*ca.* 1200 (Trojan War), *ca.* 700 (Age of Homer)	120	"Catalogue of Ships" from the *Iliad*	*Il.* II.509–10
Middle Kingdom ship	2040–1991 (Dynasty 11)	120	Tale of the Shipwrecked Sailor	Erman 1906; Simpson 1973:51, 53
Ship of Amenophis II	1427–1401	200	Stela text	S.B. Hassan 1937:132–33

Table 10. Fleet Sizes in the Ancient Eastern Mediterranean

Location	*Date*	*Size of Fleet*	*Source of Data*	*References*
Ugarit	*ca.* 1190	7 enemy ships	RS 20.238	Hoftijzer and van Soldt 1998:344
From Egypt to Khenty-she (= Lebanese coast) and back	Reign of Amenemhet II 1929–1892	10 troopers	Inscription from Saqqara	Farag 1980
From Dor to Byblos	*ca.* 1100	11 *br*-vessels	Tale of Wenamun	ARE IV §588
Ugarit	Late Bronze Age	13 decomissioned ships	RS 34.147	Hoftijzer and van Soldt 1998:342–43
Ugarit	*ca.* 1190	15 t*kt*-vessels	KTU 4.366	Hoftijzer and van Soldt 1998:338
Ugarit	*ca.* 1380	17 ships (13 *br*-vessels and 4 *tkt*-vessels)	KTU 4.81	Hoftijzer and van Soldt 1998:337
Pylos	*ca.* 1200	12 pentekontors, 20 triakontors, or 30 biakontors	An 1, An 610, and An 724	Chadwick 1987:79; Wachsmann 1995:24
Cyprus	*ca.* 1190	20 enemy ships	RS 20.18	Hoftijzer and van Soldt 1998:343
Nile River	Reign of Amenemhet I (1991–1962)	20 cedar ships	Inscription of Khnumhotep I	ARE I §465
Ugarit	Late Bronze Age	30 ships	RS 20.141B	Nougayrol *et al.* 1968:107
From Lebanon to Egypt	Reign of Snefru (2575–2551)	40 ships laden with cedar	Palermo Stone Inscription	ARE I §147
Byblos and Sidon	1100	70 ships (20 *mnš* at Byblos and 50 *br* at Sidon) belonging to Zakar-Baal	Tale of Wenamun	ARE IV §574; Wente 1973:147
Pylos	*ca.* 1200 (Trojan War), *ca.* 700 (Age of Homer)	90 ships	Homer	*Il.* II.591–602
From Ugarit(?) to Cilicia	*ca.* 1215	100 ships	KBo 2810	Klengel 1974:171–74
Mycenae	*ca.* 1200 (Trojan War), *ca.* 700 (Age of Homer)	100+ ships	Homer	*Il.* II.569–80, 612–14
Ugarit	*ca.* 1190	150 ships	KTU 2.47	Hoftijzer and van Soldt 1998:336–37

Table 11A. Travel Times and Sailing Speeds in the Ancient Eastern Mediterranean

Voyage	*Date*	*Distance*	*Time*	*Rate of Travel*	*References*
Kastelorizo to Cyprus	*ca.* 310–300	192 NM	less than 4 days	> 48 NM/day; > 2 knots	Katzev 1990:251
Lesbos to Argos	*ca.* 1200 (Trojan War), *ca.* 700 (Age of Homer)	211 NM	3 1/2 days	60.29 NM/day; 2.51 knots	Homer, *Od.* III.185–90
Alexandria to Cyprus	Mid-2nd century CE	250 NM	6 1/2 days	38.46 NM/day; 1.60 nots	Lucian, *Navigium* 7
Cyprus to Rhodes	*ca.* 310–300	300 NM	4 days	75 NM/day; 3.13 knots	Katzev 1990:251
Cape Samonium to Egypt	Second half of 1st century	305 NM	3 or 4 days	102 or 76.25 NM/day; 4.24 or 3.18 knots	Str. 10.4.5
Crete to Nile Delta	*ca.* 1200 (Trojan War), *ca.* 700 (Age of Homer)	305 NM	5 days	61 NM/day; 2.54 knots	Homer, *Od.* XIV.245–60
Rhodes to Alexandria	Mid-1st century	325 NM	3 days	108.33 NM/day; 4.51 knots	Appian, *Bellum Civile* 2.89
Rhodes to Alexandria	Mid-1st century	325 NM	3 1/2 days	92.86 NM/day; 3.87 knots	Diodorus Siculus 3.34.7
Rhodes to Tyre	Mid-2nd century CE	400 NM	4 days	100 NM/day; 4.17 knots	Xenophon of Ephesus, *Ephesiaca* 1.12.3, 13.4–5, 14.6
Sidon to Chelidonian Islands	Mid-2nd century CE	465 NM	9 days	51.67 NM/day; 2.15 knots	Lucian, *Navigium* 7
Troy to Alexandria	Mid-1st century	550 NM	7 days	78.57 NM/day; 3.27 knots	Lucan 9.1004–5
Piraeus to Paphos	*ca.* 310–300	595.5 NM	25 days (15 under sail)	39.7 NM/day; 1.65 knots	Katzev 1990:250–51
Paphos to Piraeus	*ca.* 310–300	657.6 NM	19 days (12 under sail)	54.8 NM/day; 2.28 knots	Katzev 1990:255
Thessalonica to Ascalon	*ca.* 400 CE	800 NM	12 days	66.67 NM/day; 2.78 knots	Marcus Diaconus, *Vita Porphyri* 6
Ascalon to Thessalonica	*ca.* 400 CE	800 NM	13 days	61.54 NM/day; 2.56 knots	Marcus Diaconus, *Vita Porphyri* 6
Byzantium to Gaza	*ca.* 400 CE	855 NM	10 days	85.5 NM/day; 3.56 knots	Marcus Diaconus, *Vita Porphyri* 27

Table 11B. Experimental Voyages of Kyrenia II

Voyage	*Distance/Time*	*Time at sea*	*Time in port*	*Distance under sail*	*Average speed*	*Distance towed*
Piraeus to Paphos	595.5 NM/25 days	15 days (60%)	10 days (40%)	414.5 NM (69.6%)	2.95 knots	167 NM (28%)
Paphos to Piraeus	657.6 NM/19 days	12 days (63%)	7 days (37%)	482.3 NM (73%)	2.85 knots	172.5 NM (26.2%)
Kastelorizo to Paphos	192 NM/<4 days	n/a	n/a	178 NM (92.7%)	2.7 knots	9 NM (4.6%)
Paphos to Rhodes	300 NM/4 days	n/a	n/a	281 NM (93.7%)	3.0 knots	18 NM (6.0%)

Table 12. Sailing Speed of Fleets in the Classical World

Voyage	*Date*	*Distance*	*Time*	*Rate of Travel*	*Ships/Personnel*	*References*
Parion to Proconnesus	End of fifth century (Alcibiades)	27 NM	18 hours	36 NM/day; 1.5 knots	86 ships	Xenophon, *Hellenica* 1.1.13
Catana to Syracuse	End of fifth century	31.26 NM	overnight	93.78 NM/day; 3.91 knots	Athenian fleet (triremes and transports)	Th. 6.65
Lilybaeum to Cape Bon	End of third century (Scipio Africanus)	65 NM	1 days	65 NM/day; 2.71 knots	400 transports, 40 warships carrying 10,000 infantry and 2,200 cavalry, or, 16,000 infantry and 1,600 cavalry, or, 35,000 infantry and cavalry	Livy 29.25.1–3, 26.3, 27.6–8
Lilybaeum to Africa	Mid-first century (Caesar)	85 NM	3 1/2 days	24.29 NM/day; 1.01 knots	6 legions aboard warships and 2,000 cavalry on transports (leaving Lilybaeum); 3,000 infantry and 150 cavalry (landing with Caesar in Africa)	Caesar, *Bellum Africum* 2
Lilybaeum to Ruspina	Mid-first century (Caesar)	140 NM	3 1/2 days	40 NM/day; 1.67 knots	2 legions, 800 cavalry, and 1,000 slingers and archers aboard transports	Caesar, *Bellum Africum* 34
Sason to Cephallenia	End of third century (Philip V)	160 NM	1 3/4 days	91.43 NM/day; 3.81 knots	100 galleys (*lembi*)	Polybius 5.109.1–3, 110.5
Carales to African Coast	First quarter of sixth century CE (Justinian)	200 NM	2 1/2 days	80 NM/day; 3.33 knots	30,000 soldiers in 500 transports, 2,000 soldiers in 92 warships (*dromones*)	Procopius, *Bellum Vandalicum* 1.11.13–16, 25.21
Syracuse to Hermaeum promontory	End of fourth century (Agathocles)	264 NM	6 days	44 NM/day; 1.83 knots	60 triremes	Diodorus Siculus 20.5.6
Greater Syrtes to Heraclea Minoa	Mid-fourth century (Dion)	475 NM	4 1/2 days	105.55 NM/day; 4.40 knots	2 merchant ships, 1 small transport, and 2 32-oar galleys; < 800 soldiers (?)	Plutarch, *Dion* 22.5, 25.4–5

Table 13A. Buried Population at Pithekoussai

	Number of Graves	x *% of Total*	*Overall Projected Total*	*minus 2/3 pre-adult*	*minus 1/2 native bride*
Excavated	1,300	x 10	13,000		
Published	723				
LG date	493	x 40 (@2.5%)	19,720	6,573	
		x 20 (@5.0%)	9,860	3,287	
LG I date	125	x 40 (@2.5%)	5,000	1,667	834
		x 20 (@5.0%)	2,500	833	417
LG II date	368	x 40 (@2.5%)	14,720	4,907	
		x 20 (@5.0%)	7,360	2,453	

Table 13B. Burying Population at Pithekoussai

Date	*p = 1,000/30 x 50/max - e*	*p = 1,000/30 x 50/min - e*	*p = 1,000/40 x 50/max*	*p = 1,000/40 x 50/min*
LG				
overall	9,597	4,800	9,860	4,930
minus 1/2 native women	4,800	2,400	4,930	2,465
LG I				
overall	4,867	2,434	5,000	2,500
minus 1/2 native women	2,434	1,217	2,500	1,250
LG II				
overall	14,327	7,164	14,720	7,360
minus 1/2 native women	7,164	3,582	7,360	3,680

p = population
e = *enchytrismoi* burials

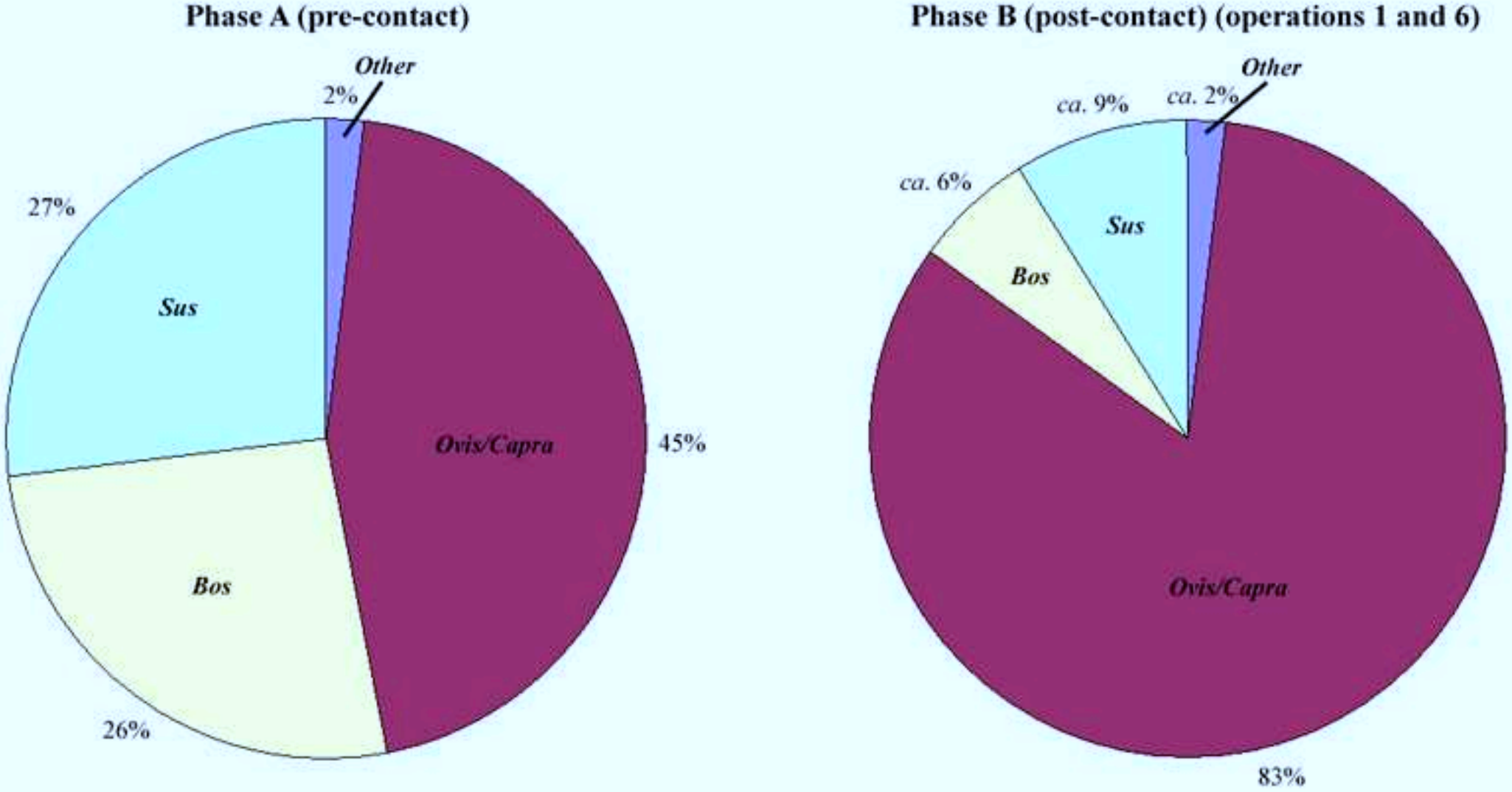


Chart 1. Faunal Assemblages at Hacınebi Contrasted

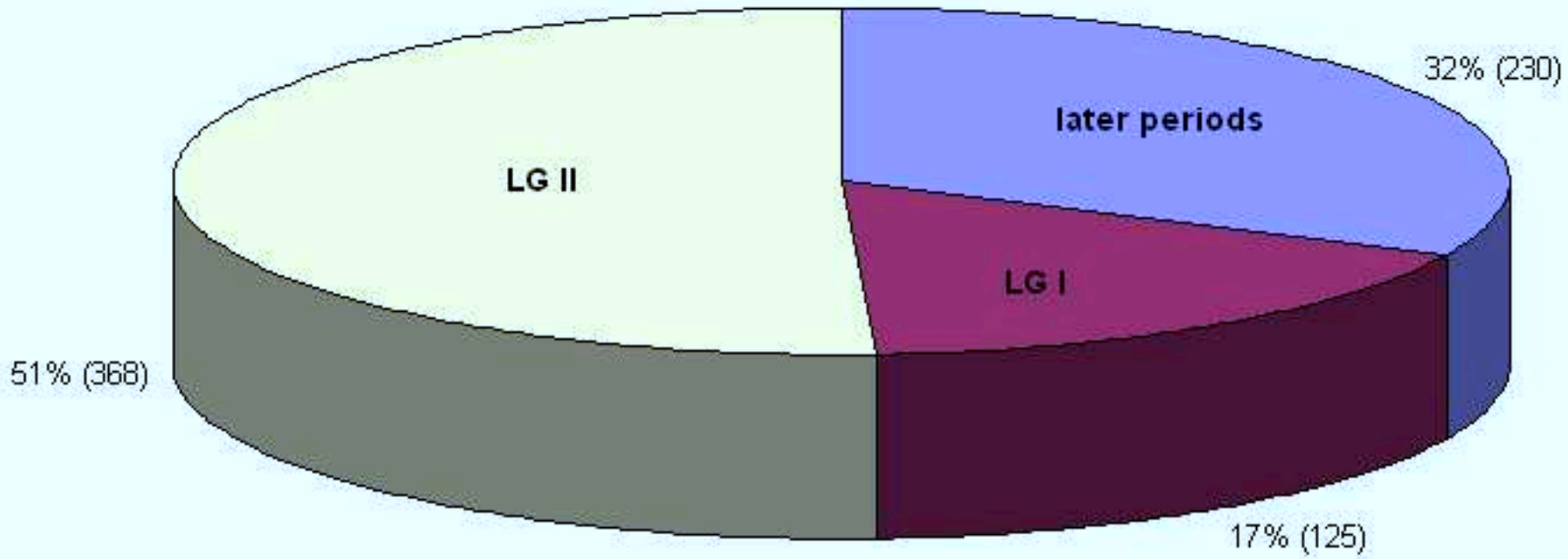


Chart 2. Burials at Pithekoussai According to Period

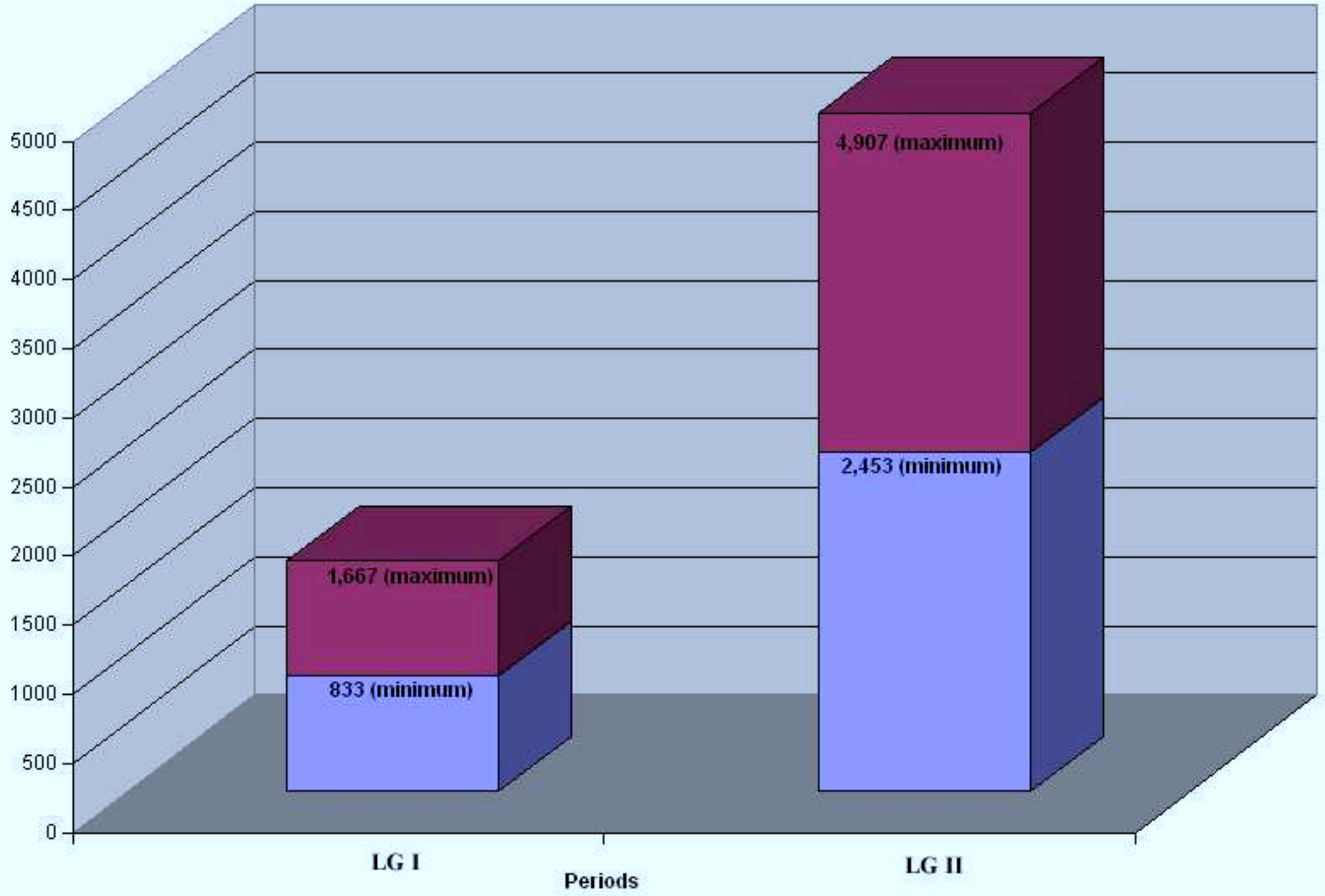


Chart 3. LG I Versus LG II, Adult, Buried Population at Pithekoussai

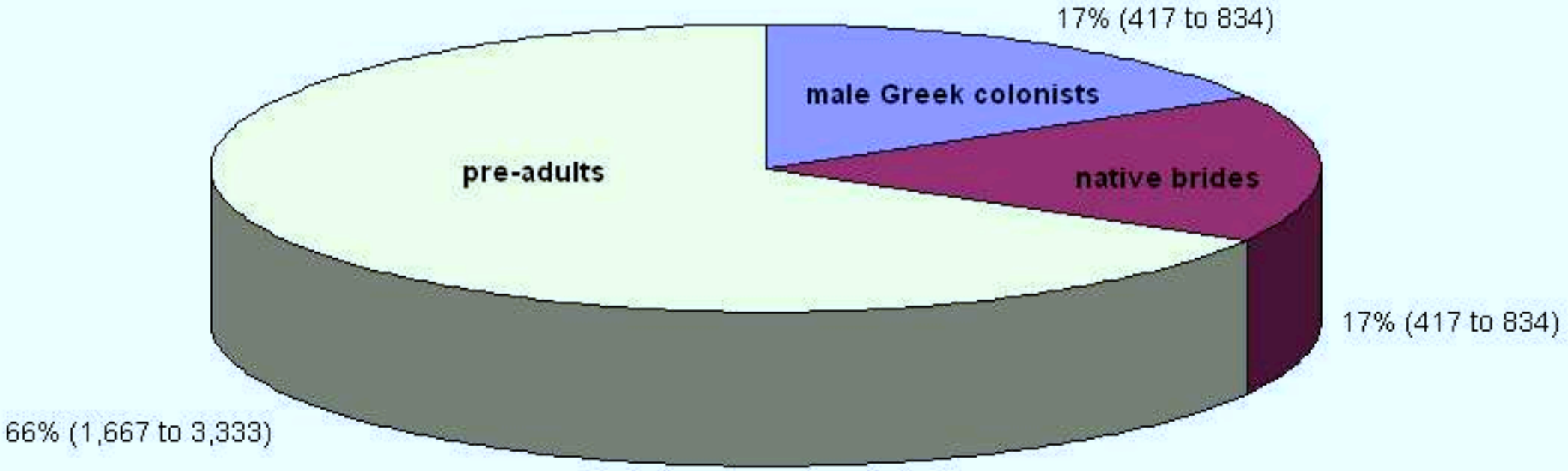


Chart 4. Proposed Age and Sex Profile of Buried Population at LG I Pithekoussai

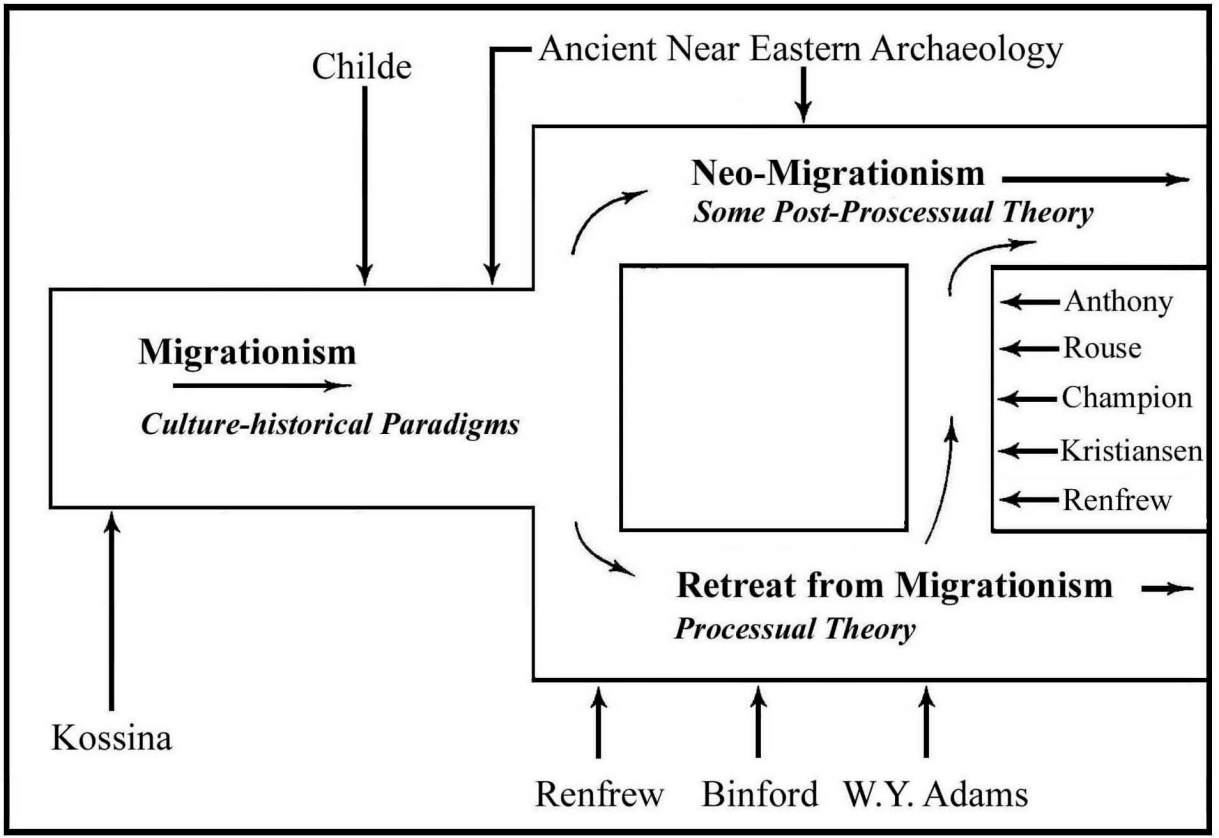


Chart 5. Theoretical Trends Relating to the Use of Migration as an Explanation for Culture Change

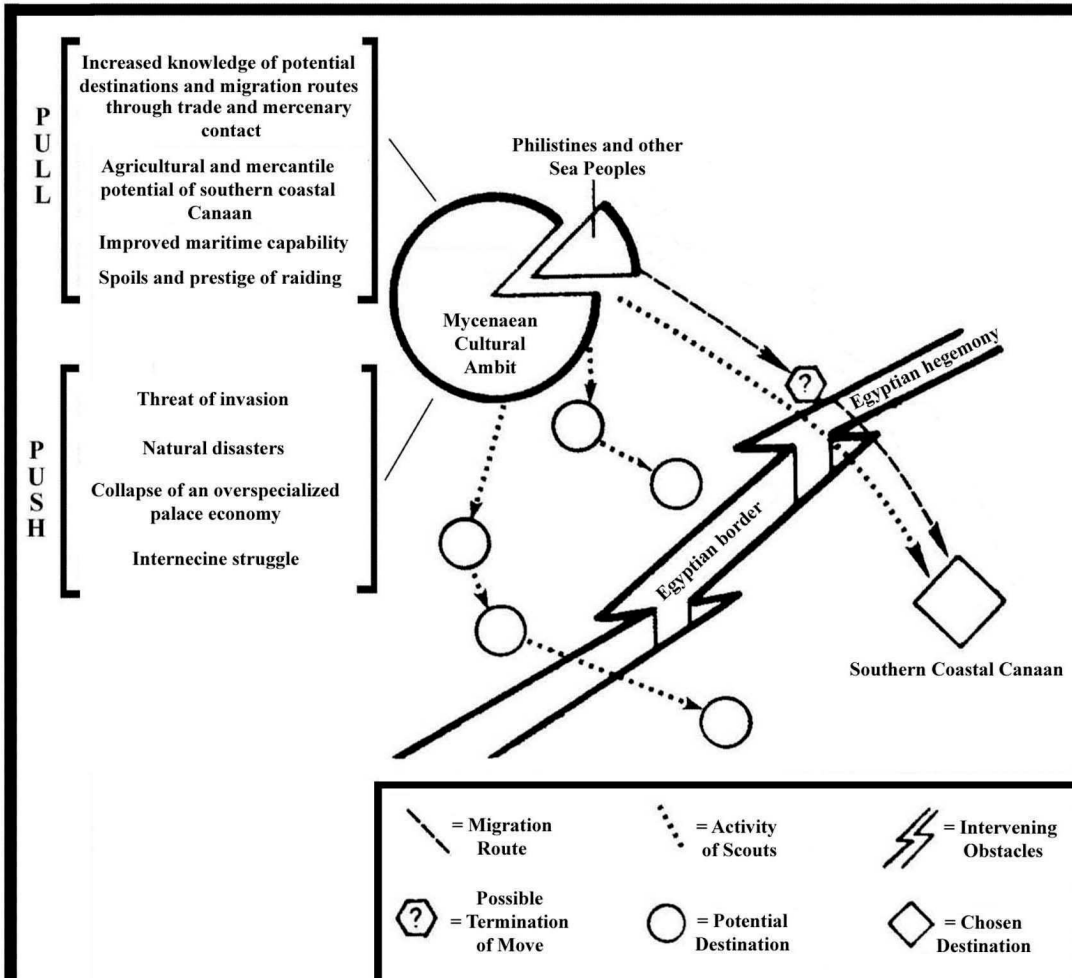


Chart 5. Diagram of the Migration Process

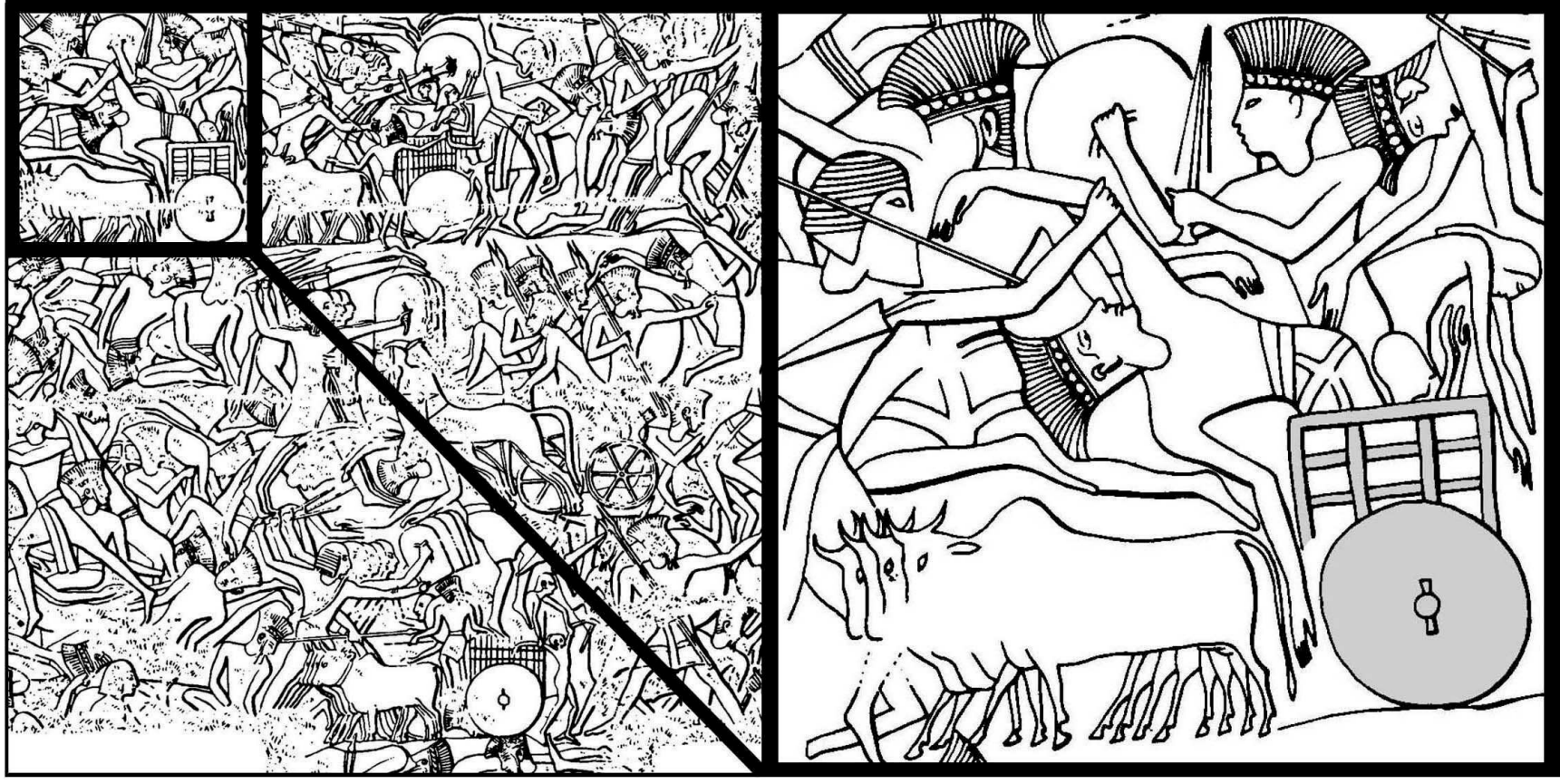


Illustration 1. Philistine Men, Women, and Children in Oxcarts as Depicted at Medinet Habu

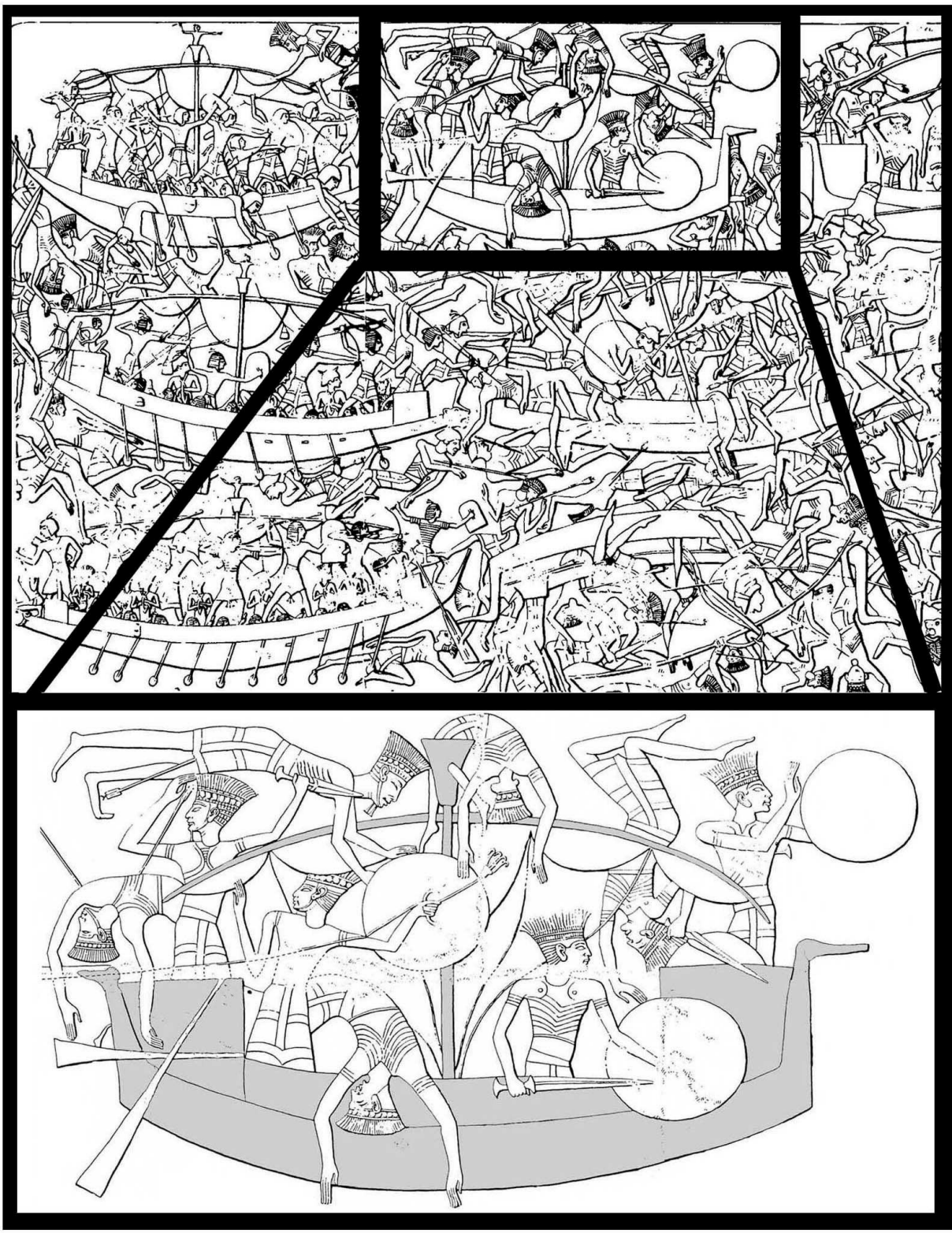
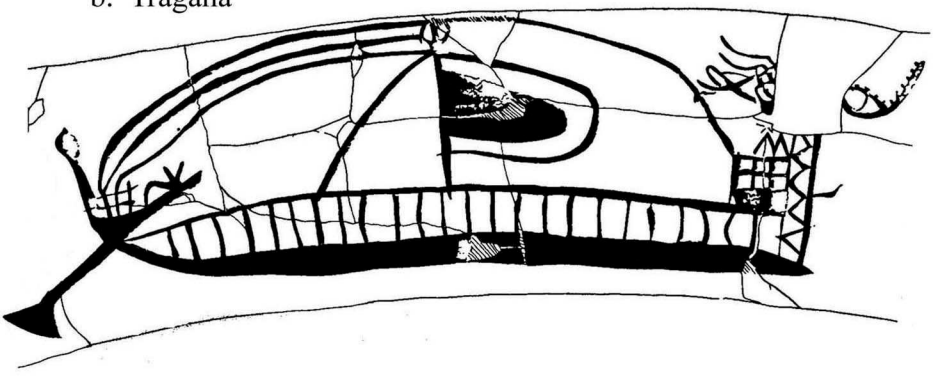


Illustration 2. Philistine Ship as Depicted at Medinet Habu

a. Gazi

b. Tragana



c. Pyrgos Livanaton

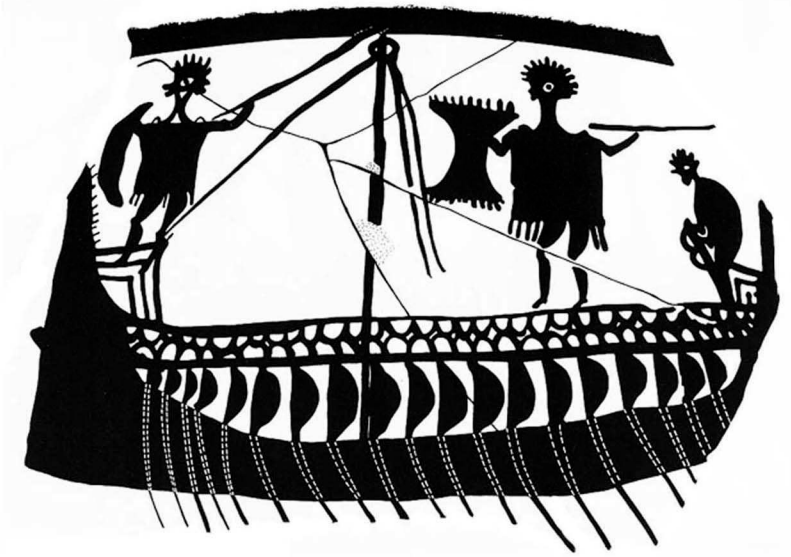


Illustration 3. Depictions of Pentakontors on LH III Pottery

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