GOD, OIL, AND POLITICS: HEBREW PROPHETIC TEXTS
AND THE DYNAMICS OF REGIONAL ECONOMY IN THE SOUTHERN LEVANT
DURING THE 8TH AND 7TH CENTURIES B.C.E.

A Dissertation in
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by
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ABSTRACT
During the 8th and 7th centuries B.C.E. the Eastern Mediterranean underwent significant political and economic changes as the ever-expanding Neo-Assyrian Empire overtook small Levantine states such as Israel and Judah. Contemporaneous with Assyria's westward expansion was a revitalization of the international economy that reshaped local economies in the Levant. It was in the context of these rapidly changing political and economic circumstances that a portion of the prophetic literature of the Hebrew Bible was composed. The current study examines this rapid and dramatic restructuring of the economy as an avenue to better understand the composition of the prophetical texts of the 8th and 7th centuries B.C.E. Critical in this evaluation are the archaeological remains of the olive oil industry of the late Iron Age, which indicate a massive centralization and intensification of production following Assyrian hegemony in the region. The move toward large-scale production is situated in the context of a move toward royal estate farming that was conducted in order to meet the tribute demands imposed by the Neo-Assyrian Empire. Moving from archaeological reconstruction to historical application, this dissertation uses case studies from Micah and Zephaniah to place economic rhetoric in the context of the rapidly changing regional economy of the late Iron Age. This analysis demonstrates a concern for the implications of ancient industrialization and its effects on the people and their land.
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<td>A.R.</td>
<td>Apollonius Rhodius</td>
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<tr>
<td>BHS</td>
<td>Biblia hebraica stuttgартensia</td>
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<tr>
<td>Com. Adesp.</td>
<td>Comica Adespota</td>
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<tr>
<td>de agr.</td>
<td>Cato, De Agri Cultura</td>
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<td>E.</td>
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<td>HF</td>
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It is fitting that this work has reached a milestone in its completion in the very place it started. As a child in Kansas, I regularly witnessed farmers calling out to God for rain on their fields. Their livelihood was at stake and, on Sunday mornings, their agricultural needs became their spiritual needs. In a significant way, my upbringing in Kansas exposed me to life in an agricultural setting and the complex ways in which people intertwine aspects of their daily lives with their religious beliefs. Reflecting on this study at its current stage of completion, I would like to take the time to acknowledge the many people who have contributed to the development of these ideas.

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Eric Welch
Lawrence, KS
There comes a time in every rightly-constructed boy's life
when he has a raging desire to go somewhere and dig for hidden treasure.

—The Adventures of Tom Sawyer

For my father, David Lee Welch,
who made sure I was rightly-constructed,
understood the peculiar nature of my hidden treasure,
and did everything in his power to see my dreams fulfilled.
CHAPTER ONE

THE CASE FOR ECONOMIC HISTORY

*Let me tell you something that we Israelis have against Moses. He took us 40 years through the desert in order to bring us to the one spot in the Middle East that has no oil!*

—GOLDA MEIR'

INTRODUCTION

Golda Meir famously claimed that Moses brought the Israelites to the one place in the Middle East lacking oil. While Israel can claim relative poverty in petroleum resources compared to its neighbors, the Land of Israel is home to another oil that has contributed to the shaping of history and economy in the Levant for over 5000 years. As a food and fuel, olive oil occupied a privileged place as one of the main commodities in antiquity. In the agrarian economy of the biblical world, the importance of this commodity cannot be overlooked. In the cultic realm it functioned as both symbol and sacrifice. In the royal realm it was a provision that was taxed. For the people of ancient Israel and Judah it was a basic component of the diet and source of fuel. In the chapters that follow, the importance of olive oil production and its impact on the religion and politics of the Iron Age will be explicated.

The study that follows is a socio-economic study of the olive oil industry of the Southern Levant in the Iron Age IIB (8th–7th centuries B.C.E.). This study will demonstrate the dramatic change in olive oil production in the late Iron Age. It will then explore this shift in two realms: the religious realm as reflected in the formation of biblical texts, and the political realm, the international stage on which kings and empires acted and interacted. The aim of this non-traditional study is to

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1. On the occasion of a state dinner during the visit of German chancellor, Willy Brandt; “Golda’s grudge: Moses led the way—but not to oil,” Chicago Tribune (June 11, 1973, page 5).
2. Unless otherwise noted as C.E., all dates in this work refer to centuries and years B.C.E.
assess how the dynamics of regional economy in the late Iron Age influenced the production of biblical texts.

This study is not one that fits solely into the category of “biblical studies,” nor does it qualify as strictly archaeological or economic history. This study takes the following stance. The archaeological record shows a significant shift in the production of olive oil. What are the underlying political factors in this shift, and does this shift influence the production of biblical texts? This dissertation seeks to study the impacts of a single resource in a defined range.

The desire to understand the economic circumstances surrounding biblical texts is neither something new, nor is it something that has been neglected by biblical scholarship. The literature includes discussions of resources, systems of exchange, and economic classifications. Rather than studying components of the economy, such as taxes or resources, this study attempts to part ways by focusing instead on a specific period of change in Judah’s economy—the upheaval of the olive oil industry witnessed between the 8th and 7th centuries B.C.E. The goal then is to understand the economic change and its implications for the production of biblical texts. In this regard, changing social and environmental factors are prioritized for understanding their role in the shaping of biblical text. For a book largely attributed to religious and political elites, the focus on the mundane rather than the institution represents a change.

**Previous Approaches to the Economies of the Ancient Levant**

The study of biblical texts begins with an understanding of the context of the texts. Immediately, this means the historical context. In the case of a narrative, how does the individual pericope relate to a large whole? How does it fit with the history of the time it purports to describe? In the case of the historical books, one might ask about the chronology of various rulers. In some cases studies involving the historicity of political relations have been undertaken. While all of these approaches are worthwhile and have revolutionized the ways in which biblical texts are interpreted, they yet fail to grasp the entire picture. If historical circumstances are the message, the social factors making up that history are the medium. By describing history alone we are measuring peaks in the wave, rather than the volume of the medium. It is with these social factors in mind that this study approaches changes in the economy of the Levant during the late Iron Age.
Biblical and Archaeological Discussions of the Economies of the Biblical World

The economy of the biblical world has been examined within the fields of biblical and ancient Near Eastern studies. Biblical treatments that mine the biblical text for data on the form and function of the economy, such as those produced by Silver and Elat, are often problematic because of the complexity of the textual traditions that produced the biblical corpus. Other treatments written from the field of Biblical Studies deal with economic issues in a topical format for either the bible as a whole or in an isolated book. Over the last few decades, individual articles have shown—with varying degrees of success—the potential of “biblical studies” that utilize social and archaeological data to elucidate texts with economic implications.

Because archaeologists seek to understand the ancient world through the study of material remains, the form and function of economy is a natural topic of focus. To date, studies of Levantine economy have focused on domestic trade and the origin of particular resources. The field has also generated studies on individual topics closely related to the economy such the structure of the family unit, weights and measurements, and agriculture. Most recently, Master has attempted to advance the state of economic discussion by outlining the different contexts of economic exchange in the Iron Age

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4 Leslie J. Hoppe, There Shall be No Poor Among You: Poverty in the Bible (Nashville: Abingdon, 2004); Roger S. Nam, Portrayals of Economic Exchange in the Book of Kings (Leiden: Brill, 2012).


Levant (Monarchy, Market, Trade Route). While these focused studies have made great contributions to our understanding of isolated components of the ancient economy, their impact on our broader understanding of the ancient economic world is limited.

Bridging these approaches are the handbooks which examine either a particular resource or an entire segment of the social world of ancient Israel. These handbooks, while excellent in depth studies on cooking, farming, and viticulture, speak only obliquely to the form and structure of the economy. More broadly, a second class takes on the basics of the social world of the Bible by using archaeological knowledge to shed light on the elements of daily life in ancient Judah and Israel. Generally speaking, these books take on the style of social analysis combined with textual analysis in the tradition of Stager’s work. While they are immensely useful resources for understanding the social world, they offer very little in the way of nuanced economic discussion.

Sociological Approaches to the Economies of the Biblical Period
One of the most influential studies of the economies of the Levant is the work of David Hopkins from the 1980s. These studies represent one of the earliest attempts to use the results of mature Near Eastern archaeology in conjunction with the biblical text. In many ways Hopkins was ahead of his time in the way he incorporated data from text and a number of archaeological sources with the expressed goal of achieving a better understanding of ancient Israel economic status. These studies are among the most cited economic studies to date that concern the biblical world, especially the late Iron Age, for which Hopkins was one of the first to suggest from a material standpoint a trend toward

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intensification in the 8th century. Because of this, Hopkins' work has taken on an important place in the literature describing the social world of the biblical prophets, especially that of Marvin Chaney. Together, these works are among the most widely cited literature on the social world of the 8th century prophets. The proliferation of this literature is due largely in part to their accessibility to biblical scholars throughout the 1990s. Only recently have biblical scholars become more adept at incorporating the results of current archaeological studies into their work.

The work of Chaney and his student, Premnath, are great economic interpretations of the biblical text, which propose a link with latifundialization. Working from the studies of Hopkins, these scholars identified a reaction among the 8th century prophets to a phenomenon they identify as latifundialization, or the creation of estate farms from smaller properties. Working from ethnographic sources they hypothesize that the crisis of the 8th century was one in which the growing Judean state utilized debt farming to coopt family lands in order to establish large, royal farms. Taking up this proposal, Matthew Coomber applied a theoretical foundation to this idea. Using corporate glolabilization theory, Coomber demonstrates how rapidly developing states follow a similar trajectory in which they assert control over traditional agricultural systems. With Tunisia as his primary background, Coomber shows that the concerns of the prophets in nascent Judah correspond to those of ostracized farmers in rapidly developing societies.

These studies represent an important step forward in the integration of material culture studies into biblical studies; however, their consistent shortcomings are that these scholars are not trained archaeologists. The material context they provide is primarily based on the syntheses produced by scholars such as Hopkins, who at times might be accused of lacking rigor with his treatment of the biblical text. While the majority of their conclusions are correct, the way in which they reached those conclusions was, at times, methodologically unsound. This dissertation will offer a corrective by using a material based approach to examine one sector of the economy.

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17 These issues are addressed in Chapter Five in which I examine texts studied by Chaney, Premnath, and Coomber.
Moving Forward: The Present Study

The goal of this work is to build on previous studies by integrating a nuanced view of the material culture of the late Iron Age. While previous attempts have worked from the text in an exegetical or theoretical way, this study will first examine the available archaeological evidence before moving on to its exegetical implications.

Figure 1.1: The Border of Judah and Philistia in the 8th Century B.C.E.

Research Methods: Dissertation Outline

This study builds on the previous body of scholarly work and takes advantage of the momentum of recent theory and evidence based model with the intended purpose of furthering the discussion of late Iron Age economy. It seeks to address a pathology instead of general symptoms of the economic shifts of the eighth-seventh centuries.

This dissertation unites the disciplines of biblical studies and Near Eastern archaeology through a diachronic study of a single commodity in order to see how the dramatic economic changes
of the late Iron Age are reflected in the writings of the Hebrew Prophets from the same time. Drawing on principles of economic anthropology, this dissertation will model the change in distribution and intensification in the olive oil industry between the 8th and 7th centuries B.C.E. Central to this examination are the remains at Tel Miqne-Ekron, where excavations have demonstrated the presence of an enormous olive oil industry, capable of producing 245,000 liters of oil per year. The resulting model of the economy will be used to reexamine prophetic texts of the Hebrew Bible from the 8th and 7th century B.C.E. that have been evaluated traditionally as literary productions rather than texts anchored in historical realia.

Chapter Two is a discussion of the Mediterranean context for olive oil production and consumption. This chapter introduces the basic elements of olive oil production in the ancient Near East, and the essential environmental factors that contribute to successful oleoculture. At the heart of the chapter is the way in which olive oil was consumed in the domestic and cultic spheres of ancient Israel and Judah. Following this, a more general examination of the eastern Mediterranean shows specialized facets of the oil industry and the way in which it was consumed. Most significant is the comparative data from the Roman agriculturalist Cato. The chapter concludes by discussing olive oil as the optimal commodity for interrogating the existing economic data for the Levant.

Chapter Three is a survey of the archaeological evidence for olive oil production in the 8th and 7th centuries B.C.E. Here I will demonstrate the general pattern of development in the ancient Levantine oil industry. Specifically, this survey shows a dynamic shift in the pattern of production between the 8th century and the 7th century. In the 8th century olive oil production is distributed across the region; however, following the widespread destruction of 701, all of these sites are destroyed and do not re-engage in production. Instead, excavation has demonstrated that the 7th century site of Tel Miqne, the biblical city of Ekron, emerged as the region's primary center for olive oil production.

Chapter Four takes up the phenomenon noted in Chapter 3—namely the centralization and intensification of olive oil production at Ekron—and explores the reasons for this shift. Here I

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introduce the concept of royal estate farming, which intensified in Judah in the 8th century. Pointing to widespread intensification in grain, wine, and pastoral activity, I situate the Ekron phenomenon in the context of a region-wide trend toward estate farming. Relying heavily on the model of Ramat Rahel and its economic administration of the Sorek and the Repha‘im valleys, I suggest that following the campaigns of Sennacherib in 701, Ekron emerged as a type of economic administrative center that oversaw the western Sorek, along with Timnah (Tel Batash).

Chapters Five and Six take the economic data from Chapters Three and Four and turns to prophetic material from the 8th and 7th centuries to reexamine passages dealing with economic injustice. In Micah, I draw attention to the way in which the text indicates the presence of estate farming, and further use it as a justification for the divine punishments which come in the form of land allocations at the hands of Sennacherib following 701. Later in Micah, I draw attention to Micah’s futility curse and identify its description of “labor without benefit” as an accurate depiction of the economic setting of Judah under estate farming. Chapter Six is a second case study drawn from the book of Zephaniah. It examines the introduction to the oracle against the Philistines as an authentic Iron Age sentiment against the “new” regional economic power after Judah’s lands were taken away.

Chapter Seven is a conclusion to the study that points toward a future direction for this research. In it, I describe how the sentiments of the 8th and 7th century serve as a type of template for framing the experience of the Exile. That is, how the concern over the loss of a portion of the land in 701 later manifests itself as a concern for the loss of the whole land in 586. Concerns based on unjust agricultural practices are transformed to concerns for fields that sit with crops rotting in the fields. Finally, the study points to the restoration language of the Persian Period, where texts such as Joel systematically restore the agricultural losses of Judah using language that originated in the 8th and 7th centuries B.C.E.

Research Objectives and Contributions

This study has as its goal the following objectives and intended contributions. First, this study will describe economic change in Judah based on the frequency and distribution of the material remains of olive oil production. Because of the durability of the remains of olive oil production facilities, this study offers the benefit of tracking changes in the material record in a tight chronological window before and after the events of 701. The presence and absence of remains at sites in such a small window offers significant insight into how the economy was changing in the late Iron Age.

Second, this study will rely on high resolution data to describe the economic changes between the 8th and 7th centuries B.C.E. The emerging portrait is then situated in the wider context of other
sectors of the agro-pastoral complex. The data for this synthesis is drawn from the most recent surveys and considers grain, wine, and faunal data as it relates to pastoral activity in order to define a trend toward centralization and intensification in the late Iron Age. Thus, the study marks an important step forward in discussing “the economy” of the late Iron Age, moving away from the broad brush strokes of past studies that featured the biblical text as a key element in reconstructing the element.

Third, the study uses the emerging portrait of Judah’s changing economy to evaluate economic language in the prophets of the 8th and 7th centuries. The prophetic texts are placed in the context of the estate farming, and their concerns are based in material reality rather than a prophetic ideal. The study suggests the presence of what might be described as an Iron Age sentiment concerned with the loss of land and agriculture production.

Finally, the study points to the experience of Judah in the late Iron Age as a formative event for the people and their texts. The loss of land and production to estate farming and then the allocations of 701 functioned as a type of “experiential Vorlänge,” through which Judah filtered later experiences in the Exilic and Post-Exilic periods. The themes or sentiments that emerge out of 701 form the foundation of some exilic curses and are a highlight of post-exilic restoration language.

**God, Oil, and Politics**

The foundation of biblical studies is the contextual examination of the text. This is in many cases a multifaceted pursuit that draws on history, philology, anthropology, and sociology. Ethnographic and comparative studies are introduced to understand the ways of life, and the ways in which people render account of themselves to one another. This study embraces elements of all of these disciplines to understand how shifting cultural currents in the late Iron Age influenced the creation of biblical literature.

Many of the commonly cited shaping influences on scripture exist at the institutional level; that is, those things that have affected the shape of the text are “top down” with agency resting in some elite body, centralization and reformation chief among them. We attribute these things to key monarchs in the historical realm, and to editors or classes of “literati” in the realm of textual production. The history of biblical studies has made it very clear that the religious and political environments are deeply and inseparably intertwined. This work sets out to modify that paradigm by taking into account the agrarian economy of the Iron Age communities responsible for textual production. In this way, the critical lens is momentarily redirected from a top-down perspective to focus on the potential “grass roots” motives, or those social currents that shaped the experiences of the daily lives of average citizens.
While a book on “God, oil, and politics” might very well concern modern dynamics of life in the Middle East, the reality is that these three dimensions have been complexly interrelated for millennia. The shaping influences of religion, economy, and politics are undeniable. Each has a unique relationship with the other. This study uses as its starting point the production of olive oil as an indicator of Judean economy in the late Iron Age. Shifts in the production of oil will be explored in relation to changing domestic and international political policy. Finally, these elements will be incorporated into the study of Iron Age texts. The goal of this study is to consider the relationships between economic, religious, and political factors in order to better understand their influence on the composition of components of the prophetic corpus of the Hebrew Bible.
CHAPTER TWO

THE MEDITERRANEAN CONTEXT OF OLIVE OIL PRODUCTION AND CONSUMPTION

And the olive tree said to them, “Should I leave my abundance, by which gods and men are honored, and go and hold sway over the trees?”

—JUDGES 9:9

The olive tree enjoys a privileged place among the indigenous flora of the Mediterranean. In the story of Abimelech in Judges, Jotham cites a parable concerning kingship (9:7-15). The story is that one day the trees decided among themselves to anoint a king. They first went to the olive tree and said, “Reign over us.” The olive tree refuses them, so they approach another tree, the fig (תאנה). When the fig rebuffs their request, the trees approach the vine (גפן), and ultimately the thorn tree (אטד), who accepts their offer. The progression descends through the hierarchy of Levantine fruit bearers, with the bramble representing the lowest level in this case. In stark contrast to this is the view that the olive tree was chief among the trees and the logical tree to become king.

This single parable encapsulates an idea that is prevalent through the Mediterranean, that the olive is a product of extreme cultural importance. This chapter explores this idea by introducing the basics of olive oil production by surveying different aspects of ancient consumption patterns. After

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1 The thorn tree (אטד) responds to the trees, “Come take refuge in my shade” (9:15). That the tree implies he has shade to offer rules out the other brambles and thistles common to Israel. This may point to the tree being the Christ Thorn, Ziziphus spina-christi, which does indeed bear fruit, albeit not anything as important as olives, figs, or grapes. The Christ Thorn can grow up to 10m tall and bears yellow fleshy fruit, similar in size to a cherry; Michael Zohary, Plants of the Bible: A Complete Handbook to All the Plants with 200 Full-Color Plates Taken in the Natural Habitat (London: Cambridge University Press, 1982), 154-55.
reviewing the history of the olive I will make the case for olive oil production as an economic indicator.

**Basic Oleoculture**

The olive tree, *Olea europaea*, is a resilient plant known for its long lifespan. It is not uncommon for trees to exceed 500 years, with some examples of living trees around 2,000 years old. At maturity some olive trees grow to 15 m. The olive first appears as a domesticated product in the archaeological records in the Chalcolithic period. Originally found in the Levant, the olive is thought to have spread westward via Phoenician trade. Today the olive can be found throughout the Mediterranean, where the climate is well suited to growth.

Climate plays a critical role in the vitality of the olive tree, which requires full sun as well as cooler periods in order to bear fruit. Typically, the olive requires 6-11 weeks below 9° C for vernalization, the process by which the tree gains the ability to flower and thus bear fruit. Following this period of vernalization, the olive requires a season of temperatures in the range of 18-22° C for actual shoot growth and flowering to take place.

While the olive tree can grow in a variety of soils, extremes in water levels, salinity, or alkalinity have negative effects on the tree's growth. In general "deep, well drained, light textured soils" are most productive for fruit bearing, whereas rich, fertile soils are more conducive to vegetative growth rather than fruit production. The optimum rainfall is 500-800mm during the growth phase, although the olive can grow with much less as the tree is fairly drought resistant.

A tree begins to bear fruit after five years, although "productive" trees are typically closer to 20 years old. The olive tree bears fruit in the form of a drupe, a product in which a fleshy outer part surrounds a hard seed, or pit. Common drupes include cherries, peaches, and plums. This fleshy mesocarp contains the fruit's oil; this is different from other oil crops, such as the soybean, where the oil resides within the seed. By contrast, the olive stone contains only 3-4% of the fruit's oil.

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3ibid.

4ibid.

5ibid.

6It should be noted that almost all modern growth operations take advantage of irrigation techniques to maximize the fruit bearing potential of the olive tree.
The land of Israel is well-suited to olive tree growth. The slopes of the Shephelah and the Judean highlands offer the right combination of sunlight, temperatures, and well-draining soils required for fruit bearing olive trees. In an average season the Shephelah receives adequate rain for a healthy olive harvest (Table 2.1).

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>83.4</td>
<td>77.6</td>
<td>44.9</td>
<td>15.3</td>
<td>7.5</td>
<td>0</td>
<td>9.5</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>26.8</td>
<td>71.2</td>
</tr>
</tbody>
</table>

**TABLE 2.1: AVERAGE RAINFALL IN BETH SHEMESH, 2000-2012**

The harvest of the olive takes place in the autumn, typically in a seven week period that falls between September and November (Table 2.2). In the Gezer Calendar, the agricultural calendar begins with a season of ingathering of fruits, most often identified with the olive harvest. The timing of this season places it as the final harvested crop for the year.

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rain</td>
<td>Rain</td>
<td>Rain</td>
<td>Budding</td>
<td>Flowering</td>
<td>Fruiting</td>
<td>Ripening</td>
<td>Ripening</td>
<td>Ripening</td>
<td>Harvest</td>
<td>Harvest</td>
<td>Rain</td>
</tr>
</tbody>
</table>

**TABLE 2.2: SEASONS OF OLIVE PRODUCTION BY MONTH**

**Olive Oil Production: Methods and Means**
The process of olive oil production has remained largely unchanged since antiquity, though today pieces of the equipment have been modernized to facilitate more efficient production. Following the

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7 Averages via WeatherWorldOnline.com, as reported by the Israel Meteorological Service.
harvest, olives are first crushed. This crushing process ruptures the mesocarp of the fruit and frees the olive pits. The resultant mash is then placed in a container and squeezed to drain the liquid. This liquid, which contains both oil and wastewater, is allowed to settle in order to facilitate skimming the oil or draining the wastewater.

The relatively simple process of olive oil production lends itself to a natural evolution of techniques and machinery. The most basic facilities date to prehistoric times and are simple cutouts in exposed scarps of bedrock. These cup-like features functioned as mortars in which olives were ground and then the oil skimmed. More familiar to the student of antiquity are the apparatuses of the Roman period. During the days of the villa, the equipment was scaled toward industrial production. Crushing took place in a trapetum, a large hemispherical grinder powered by ass. Pressing took place in dedicated rooms in which screw or winch-driven presses extracted oil with a high degree of mechanical efficiency.

In the center of this mechanical spectrum is the beam press of the Iron Age. The beam press can be found inside or outside of buildings. When built outside, the parts of the press—especially crushing basins and depressions for collection—are typically cut into the bedrock. In many instances these presses take advantage of a vertical scarp of bedrock in which the pressing beam is anchored. When pressing installations are located inside a building, the various components of the press are cut from free standing rock and are located on or set into the floor. Let us examine the components of a typical Iron Age pressing installation.

For the crushing phase of production, the Iron Age workers relied on shallow stone basins. The olives were crushed using a large stone roller, which was likely attached to a large stick that allowed the operator to roll the crusher across the basin. Essentially this crushing tool looked like a large paint roller that was pushed and pulled over the raw olives.
In a traditional setup such as that at Ekron, the crushing basin was flanked by two pressing vats (Fig. 2.1). These large vats, either square or round, had a large flat surface with a centered hole. In some cases, the surface was inscribed with a shallow channel around the perimeter of the surface to redirect and collect any oil that drained away from central collection hole. On the surface of the vat, stacks of woven baskets filled with the olive mash were placed under a large wooden beam (Fig. 2.2). This beam, whose pivot point was situated in the wall, applied force to the stack of baskets, as the distal end of the beam was weighted with perforated limestone weights. As the beam pressed against the stack of baskets, the liquid ran onto the press bed and into the central collection vat.
At this point the liquid was either left in the vat or moved to secondary containers in order to allow the oil and waste water to separate and to allow any particulates to settle. Many times these secondary containers took the form of large open vessels such as kraters. In some instances, the kraters are perforated with a single hole at the bottom of the vessel, which could be unplugged in order to drain the wastewater.¹⁹

Olive Oil in Israel and Judah
There can be little doubt regarding the importance of olive oil in ancient Israel, both as a daily provision and important social and spiritual symbol. When the Promised Land is introduced to the Israelites, olive oil is highlighted amongst its agricultural products.¹⁰ The land is said to be a ארץ־זית (a land of olive oil), a feature which is meant as a blessing (Deut 8:8). The land is full of agricultural products that required no labor on the part of the Israelites. The land is a gift and comes complete with established cities and agricultural systems in place. As a corresponding curse, Deut

¹⁹Our basic knowledge of the vessels associated with olive oil production comes from those contexts preserving olive oil production facilities such as Tel Miqne-Ekron. The vessels found in association with production facilities are discussed briefly in Chapter Three; Appendix C is dedicated to a brief discussion of vessel function by type.

¹⁰Deut 6:11; 8:8; Josh 24:13.
28:39-40 offers a reversal of the fate, noting that if the Israelites do not obey the commands they will have olives throughout their territory, but not take advantage of the oil.⁹ That olive oil would be so highly regarded amongst the agricultural products of the Land speaks to its value in an Iron Age context. Beyond the biblical text, archaeological and epigraphic remains offer some insights into the ubiquity and importance of olive oil for life in ancient Israel.

**Daily Use**

In the Levant olive oil was used in multiple contexts on a daily basis. First, olive oil served as a basic component of the Levantine diet. It could be served as a condiment on bread, as in the Priestly ritual in Exod 29, or as an ingredient for making bread or cakes.⁸ While the textual evidence is very slim, the concept of frying in oil seems to present in Lev 6:13-14. As a part of the so-called “Mediterranean Triad,” olive oil functioned as the basic source of fat in the Levantine diet. While olives can be consumed as a fruit, they must undergo a process of salting and brining in order to remove their bitterness. Because this process did not exist until Roman times, olive oil was the only way to incorporate this fat into one’s diet in the ancient Near East. To this end we might observe that within the Hebrew Bible, it was the olive oil, not the olive itself, that was the Israelite’s blessing.³³

While dietary consumption represented a significant portion of the demand for olive oil in antiquity, its use as a fuel is equally important. As the primary fuel source for interior illumination, olive oil was an extremely common product for lighting domestic and public spaces. The earliest evidence for oil lamps begins in the Chalcolithic period when simple bowls are found with soot marks on the rim, indicating their use as lamps. In the MBIV, the four spouted lamp was common, although it was later replaced by the more efficient one-spout lamp in the MB II. From the MB through the late Iron Age, the dominant lamp is a simple round bowl with folded ends that create a spout-like protrusion on one side of a shallow bowl.

Olive oil is an excellent fuel source because its temperature of ignition—or flash point—is relatively high at 550°F. This high flash point diminishes the volatility of the liquid, making it a safer fuel for domestic lighting. Compared to other plant oils, olive oil burns cleaner, creating less smoke

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⁹This is fitting when one considers the 7th century reversal of Judah’s fate. See chapter 4 on the development of the blessing and curses as a possible product of the economic upheaval of the 7th century.

³³The story of Elijah and the widow found in 1 Kgs 17:8-16 centers around the miraculous provision of oil for a basic bread made using flour and oil.

⁸See Deut 8:8.
and leaving behind less soot. Olive oil is an odorless fuel and the quality of olive oil has little bearing on its use as a fuel. Lower quality oil or oil that has gone rancid still burns well and is relatively odor free. The significance of this is that in the event that oil designated for consumption became unpleasant for cooking or eating, it could be repurposed as lamp fuel rather than being discarded. On the whole however, olive oil has a long shelf life under optimal storage conditions.

Finally, oil was used as a part of basic hygiene. As a natural moisturizer it was probably commonly applied to the skin to refresh it (Ruth 3:3; Ps 104:15; 2 Sam 14:2; Ezek 16:9). In medicinal contexts, it was used to treat wounds, keeping them supple (Isa 1:6). Even certain objects, such as leather shields, were rubbed with oil to keep them supple and fit for battle (Isa 21:5). The many uses of olive oil are barely mentioned in the Hebrew Bible, but even the few uses identified here demonstrate how common the product must have been in daily life.

Cultic

Olive oil also played an instrumental role in the cultic sphere of the Hebrew Bible. Many of these uses mirror their more common daily applications, but their function within the cultic domain sets them apart. The lamps of the tabernacle were fueled by שמן קדש (Exod 25:6; 35:14; 39:37; Num 4:16). This oil was likely śemen katit, or the finest oil that comes from the first crushing of the olives. In addition to illumination, olive oil took on a more direct cultic function as one of two ingredients in the minḥāh offering (Num 28:4-5; Exod 29:40). Prior to the formal installation of the cult, traditions include oil as a libation poured out on stone pillars (Gen 28:18; 35:14).

A direct example of the cultic connection with olive oil can be seen at the high place at Tel Dan where excavators uncovered an unusual installation of sunken basins, which they interpreted as a type of station for water libations. Stager and Wolf offered a different interpretation by correctly

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14This is an important consideration in the domestic economy of the ancient world.

15As an organic compound containing lipids, there are a number of factors that contribute to how quickly olive oil turns bad. The time of the harvest could affect this because the additional time ripening affects the ratios of the chemicals in the oil. The largest, and perhaps most manageable variable, is the way in which olive oil is stored. Out of light, in a cooler environment, and sealed tightly, olive oil could last well into the next year’s production cycle in antiquity.


noting the setup of sunken basins conformed to the examples of other olive oil production facilities identified in the Levant.\textsuperscript{18} They concluded that this on-site pressing installation could produce the pure oil necessary for lighting the temple, with the more practical benefit of being able to guarantee the purity so as to avoid adding extra soot to the ceilings and walls.\textsuperscript{19} The presence of on-site production also provided an “approved” product for preparing burnt offerings.

While anointing oneself with olive oil was probably a standard component of good hygiene, it came to take on a highly symbolic value, especially in the context of designating a new spiritual leader for Israel, whether king, priest, or prophet. Numerous examples within the Deuteronomistic History point to a notion that anointing functions as indication of Yahweh’s election for a new king, and subsequently that leader’s installment as ruler of the kingdom.\textsuperscript{20} In the P source it is anointing that marks installation into the priestly office, such as in the case of Aaron (Exod 29:7; Lev 8:12). Although the evidence is less abundant, it seems that anointing was a significant symbol for those functioning as prophets. In the context of anointing Jehu and Hazael, Elijah is also instructed by Yhwh to anoint Elisha as his successor. In Isa 6:11 the author claims to have been anointed by Yahweh. Because of its apparent symbolic function in the installation of those with spiritual authority, olive oil and the concept of anointing develop a strong theological connotation.\textsuperscript{21}

The applications of olive oil in cultic practice seem to mirror and reinforce the modes of consumption in daily life. In both cases, it functions as a food, fuel, and hygiene product, but in the case of the cultic, the consumption is set apart; for the cultic sphere, the quality of the oil is higher, and the act of applying oil to one’s body takes on extreme significance.

\textit{Epigraphic}

Mentions of olive oil in the epigraphic record of the Iron Age Levant are limited, owing to the fact that much of Israel and Judah’s writing in the Iron Age took place on perishable mediums. This leaves one major inscription and a small number of ostraca as the primary written sources. Despite the relative dearth of epigraphic material concerned with olive oil, the little extant evidence offers key insights

\begin{itemize}
\item \textsuperscript{18}Stager and Wolff, “Production and Commerce in Temple Courtyards,” 95-102.
\item \textsuperscript{19}ibid, 97.
\item \textsuperscript{20}For example, Saul (1 Sam 9:16 and 10:1); David is designated as a future king at a young age (1 Sam 16:3-13), but then officially installed with two separate anointing ceremonies (2 Sam 2:1-4; 5:1-5). In 1 Kgs 9:15-16, Elijah annoints Hazael as a future king of Damascus, and Jehu as a king in Israel.
\item \textsuperscript{21}The development of this theology is beyond the scope of the present study.
\end{itemize}
into the place of olive oil in the ancient world, both as a cultural anchor, an economic product, and as a highly valued luxury used to reinforce social patterns.

**Gezer Calendar**

If the corpus of Israelite epigraphy were personified to include a set of patriarchs, the Gezer Calendar would certainly be included among them. Discovered in 1908, the Gezer Calendar is a small limestone tablet bearing a seven line inscription and represents a necessary point of any discussion of ancient Israelite epigraphic activity. This inscription names a series of “seasons” of agricultural work, making it less of a calendar and more of a chore list. These chores begin with the ingathering of the fruit, and proceed with the planting and sowing of other crops. While the olive is not explicitly named, scholars are in general agreement that the first line, ṣmr ʾsp, refers to the olive harvest. As mentioned previously, this harvest would correspond to September or October, a date which sets the rest of the seasons mentioned in the calendar in correct alignment.

The significance of the Gezer Calendar, aside from its implications for the literacy of the population of 10th century Gezer, is in the place of the harvest season. For the author of the Gezer Calendar, the season of the olive harvest was listed first. We can also see that the time of the olive harvest was seen as its own time, distinct from times for other agricultural activities.

**Samaria Ostraca**

The Samaria Ostraca are a series of 113 sherds bearing records of economic transaction in the Northern Kingdom of Israel. Specifically, this corpus is concerned with the transfer of small quantities of šmn ṙḥṣ and yn yšn (aged wine) to certain individuals in Samaria. This corpus of economic texts offers insight into one type of olive oil quality and its use in antiquity.

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23 Borowski, *Agriculture in Iron Age Israel*, 32, has gone so far as to rename the tablet the Gezer Manual.


The exact meaning of the term, šmn ṭḥṣ, has been the subject of much scholarly discussion. Of particular debate is the vocalization of ṭḥṣ. Many treat the word as an abstract noun, roḥas, that describes its application, namely, some act of washing. Drawing on more historically and ethnographically sound evidence, Stager identified ṭḥṣ as a qal passive participle which modifies šmn, and thus refers to the methods of producing the oil. Citing ethnographic observations, Stager concludes that the act of washing associated with šmn ṭḥṣ can be linked with the practice of cracking the olives and placing them in water. This passive method allows the cracked olives to drain their oils into the water, and then to separate to the top. The oil settled at the top was skimmed off and the rest of the cracked olives where then packaged in baskets and pressed to collect the remaining oil. As the first product of the production process, the volume of šmn ṭḥṣ was significantly smaller than the amounts produced by pressing. This small volume and less efficient mode of production made šmn ṭḥṣ the finest quality oil.

Roger Nam has linked the quality and quantity of the šmn ṭḥṣ to power structures in the Northern kingdom of Israel. The washed oil draws its value as a prestige good from its inefficient production method and high quality. Nam observes that when goods are given in a nbl measure in the Hebrew Bible, it is in the context of socially embedded exchange, wherein the giver seeks to form a reciprocal relationship. These exchanges are small, local transfers, not a large scale redistributive effort. Drawing from ethnographic and comparative ancient Near Eastern accounts, Nam underscores the importance of fine wine and oil in political feasting. Because the destinations of the prestige goods fall within a close proximity of Samaria—between 7 and 12 km—he concludes that the Samaria Ostraca may indicate a system of gift exchange oriented toward securing the lands around Samaria through powerful relationships with local clan leaders.


30Nam, “Power Relations,” 157–58. He offers as examples Hannah (1 Sam 1:24), who brings a nbl of wine and other gifts to the Shiloh temple with the intent that her son, Samuel, will be offered an internship. Likewise, Samuel later sends Saul to receive gifts, including a nbl of wine, at at Tabor (1 Sam 10:3).

31Nam, “Power Relations,” 161.
OTHER ECONOMIC TEXTS

In addition to the Samaria Ostraca, excavations in Iron Age contexts in Israel have yielded a number of other economic texts which mention an exchange of olive oil. A hallmark of these economic texts are their brevity; they are receipts in their simplest form. For example, an ostraca from Tell Qasileh reads, \textit{lmlk 'lp šmn wm'h ḫyw}, or “to the king, one thousand and one hundred (measures) of oil, [A]hiyahu.”\textsuperscript{32} This complete inscription is still incredibly brief and records a shipment of 100 measures of oil sent to the king, and also records the giver’s name. The volume of exchange in this instance is notably larger than the small scale prestige gifts seen in the records of the Samaria Ostraca. The eight total ostraca from Arad\textsuperscript{33} and two from Kenyon’s excavation in Jerusalem\textsuperscript{34} are just as brief as Qasileh, or represent incomplete fragments in which the word $šmn$ is preserved. This genre of text offers very little by way of actual information on the exchange of oil other than that it was exchanged—and sometimes in large quantities.

Summary

The epigraphic evidence from Israel offers insight into olive oil’s place in society, both as an anchor in the social structure of the year, as well as the social mechanisms underlying society. The olive harvest marked a significant point in the agricultural calendar, actually starting the year in the case of the Gezer Calendar. The Iron Age ostraca indicate the economic transfer of olive oil on different levels and for different purposes. While much of the epigraphic evidence records small economic transfers in the form of receipts, inscriptions like those from Tel Qasileh and the Samaria Ostraca provide insight into the social mechanisms associated with the exchange of olive oil. At Samaria, local elites appear to have been engaged in a system of socially-embedded gift exchange in order to secure clan allegiance in the vicinity of Samaria. In the case of Qasileh, we see oil sent in a large volume, as a tax or payment. In the case of Samaria, the inscriptions offer insight into the gradation of olive oils in the Iron Age. Here, $šmn$ $rḥs$ is added to the lexicon of olive oil types.

\textsuperscript{32}Benjamin Mazar [Maisler], “Two Hebrew Ostraca from Tell Qasile.” \textit{JNES} 10.4 (1951): 265-267.

\textsuperscript{33}Y. Aharoni, \textit{Arad Inscriptions.} (Judean Desert Studies; Jerusalem: Israel Exploration Society, 1981), nos. 19, 15, 22, 24, 26, 27, 28, 32.

Olive Oil in Antiquity

The biblical and Hebrew epigraphic mentions of olive oil offer some insight into the common uses for olive oil; however, they represent a very limited scope. These texts describe some basic aspects of olive oil use as a fuel or dietary component, but offer little information in the way of specialized use or the process of olive oil production itself. Here, the texts and archaeology of the surrounding regions offer valuable insights into some of the specialized applications of olive oil in the ancient Near East. The following section surveys unique consumption practices of olive oil in the Near East and then looks to the Classical World as an avenue for better understanding the practices surrounding the cultivation of olives. By expanding the chronological and regional breadth of this survey beyond Israel and Judah, we obtain a unique view into the specialized production of luxury oils, specialized technical use, as well as important comparative data on the cultivation of olive orchards.

The appearance of the olive in Egypt is typically dated to the Middle Kingdom. It is doubtful however, that olives were cultivated in Egypt until perhaps the New Kingdom, though any cultivation would have been in an extremely limited capacity. Give oil's early production in the Levant, it stands to reason that olive oil may have been one of ancient Egypt's earliest imported commodities. The Egyptian lexicon for oils and fats is murky, given the overlap of these products in appearance and use. Further contributing to this problem is that olive oil was not a product native to Egypt, and thus was described in terms of products already generally known and used in Egyptian society. A generic word mrh is used interchangeably for any vegetable oil or animal fat; others words like nwd, sggn are also used generically of oils. It is interesting that, despite the foreign origin of olive oil and the lack of precise language, no Semitic loanword was adopted into Egyptian.

As in other parts of the Mediterranean, olive oil in Egypt is attached to the cult. A particular class of workers, the “oil boilers,” are found in texts describing temple activities. While no presses or

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35 Notably absent from the list is Mesopotamia. Because the olive did not grow naturally in Mesopotamia, the extensive textual records of the region offer little in the way of evidence for usage. As a luxury import from the west, its use was likely limited to consumption in the form of food and perfumes or ointments. It seems unlikely that the product was transported overland for use as a fuel. Because its use and consumption did not differ from the surrounding regions it has been set aside for this manuscript.


37 ibid., 584.

38 At Amarna, both oils and fats are prepared by the ps sggn, or “oil boiler.” J.D.S. Pendlebury, City of Akhenaten III (London: EES, 1951), xxiv, 258.
other material remains related to production have been found, it is presumed that these officers were responsible for crushing, boiling, skimming, and the mixing the oils with the appropriate scents. There is also evidence for wages being paid from the Temple in the form of oils.\textsuperscript{39}

The uniqueness of Egypt’s consumption of oils, which most likely extended to olive oil, was in the creation of complex perfumes. Given the arid climate of Egypt, personal hygiene including frequent washing—especially for cultic personnel—was a necessary habit. Because soap was unavailable, the common method of cleansing involved scrubs derived from abrasive compounds suspended either in oil or another viscous liquid. Because this method of washing was so effective, it was necessary to moisturize the skin following the cleansing by using scented oils. Egypt’s reputation for creating these scented oils through the addition of various ingredients became widely known throughout the ancient world.\textsuperscript{40}

While Egypt provides insight into the specialized consumption of olive oil as a moisturizer, Ebla provides insight into a specialized application as a fuel. At Ebla a group of 69 olive stones were recovered from the Gold Smith’s shop in building P4.\textsuperscript{41} In addition to its more mundane use as a source of light, olive oil burns as a hot and stable flame suitable for metalwork. Gold melts at 1064°C, copper at 1084°C, silver at 961°C, and bronze alloys between 800-1100°C. Wood, without the use of bellows or forced oxygenation, burns at 600°C, and charcoal at 800°C. An oil flame burns in the range of 1200-1400°C. The high level temperature of the flame, its stability (less flickering), and ability to be focused in a small area for longer periods of time, made the flame from olive oil ideal for intricate tasks, such as metal work.

\textit{The Classical World: Cato}

As in other cultures, olive oil was a fuel and a significant part of the diet in the classical world. By the time of the Roman Empire, olive oil consumption was ubiquitous; it was an important part of daily life and a cornerstone of the Mediterranean economic system. Because the place of olive oil in the

\begin{flushleft}
\textsuperscript{40}Pliny, for example, states that Egypt was the best suited to making perfumes (\textit{Nat. Hist.} XIII: 26), Athenaeus describes the superlative quality of Egyptian oils (I:66, III:24, XII: 533), and Theophrastus comments on the quality and long shelf-life of Egyptian perfume by indicating that even after eight years, Egyptian perfume is better than something freshly made (\textit{Concerning Odors} VI: 28-31; IX: 38).
\end{flushleft}
classical world is so firmly established, this section will examine the classical world for its contributions to understanding the production of olive oil. This is made possible the emergence of the genre of technical treatise writing in the Roman world—specifically those relating to the finer points of agriculture.

Agriculture was a common literary topic in ancient Rome, beginning with Cato in the second century B.C.E. and continuing through Palladius in the mid-fifth century C.E. The concept of agriculture was broadly conceived by the authors who typically wrote on topics including everything from grain farming to livestock. The concerns of these agriculturalists are not far removed from those of farmers today. In their ancient handbooks they address practical topics such as land selection, types of crops, and practices to ensure maximum profitability. While many of these texts offer insights into Roman agricultural practices, Cato stands out as providing valuable insight into the world of production, especially that production that is centrally organized and oriented toward the generation of massive surplus.

Marcus Porcius Cato (234-139 B.C.E.) was a Roman politician and author of the second century B.C.E. The first great author of significant Latin prose, Cato is known for his work De Agri Cultura, a handbook focused on agricultural practices. In De Agri Cultura he focuses on the profitability of the mixed farming villa. In his writings Cato describes a number of best practices to ensure the profitability of large villas.

Cato’s work was a major contribution, both in terms of Roman literary development and as a collection of agricultural information. Almost 100 years later, the Roman scholar Varro wrote his own systematic treatment of agriculture, De Re Rustica. Separated by advances in technology and economic conditions, Varro interacts with Cato’s work consistently, even if disagreeing at times. One

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42 In the West, the first example of farming literature is in Hesiod. It is very likely something pre-dated Hesiod in the east, but unfortunately it has not been preserved. Cato represents the first technical treatise on farming, and as such, represents a suitable source of comparative data.

43 For example, Aristotle (384 – 322 BCE) relates the tale of Thales of Miletus, who through use of astronomical knowledge predicted a favorable olive harvest in the coming year (Politics, 1259a). Armed with this knowledge, he purchased all of the available presses in two cities for the coming season at severely discounted rates. When the olive harvest came around and was more bountiful than the growers had expected, Thales already held a monopoly on the production facilities. By renting out his olive presses he amassed a considerable profit.

44 Marcus Terentius Varro (116-27 BCE) holds rank among the greatest of Roman scholars. His numerous writings address nearly every topic of study; history, music, medicine, and religion were just a fragment of Varro’s scholarly breadth. Of these numerous works, only two survive, including “De Re Rustica,” a three book treatise addressing both general agriculture and the raising of livestock. See further, “Varro” in The Oxford Classical Dictionary (eds. Simon Hornblower and Antony Spawforth; Oxford: Oxford University Press, 1996).
such example pertinent to this discussion is Cato's prescriptions for labor. Varro does not critique Cato's figures, but rather his lack of proportion (I.1.18). Cato is not alone in this rant, however; in the same section Varro also criticizes Saserna—who reduced the entire system of labor into a series of calculations—for not taking into account the possible variability of the terrain being worked. Despite these minor objections, the work of Cato remained an important voice in the conversation of Roman agriculture for his immediate successor, Varro, and further into the works of Columella (C.E. 60-65).

Cato's prescriptions in De Agri Cultura represent a specific type of farming. It is not a traditional rural model centered on a small farm producing for sustenance of an individual family. Rather, it is large-scale investment farming constructed with the singular goal of generating profits. Because of this circumstance Cato's prescriptions involve a number of cost saving measures focused on sustainability. There was considerable benefit to save money by producing as many of the necessary supplies, such as foods and construction materials on the land of the villa. As a function of the investment nature, the majority of the labor is slave or contract labor.

As with any ancient source, an appropriate degree of caution and careful criticism is critical in determining Cato's reliability for historical reconstruction. For Cato, one must ask if his writings reflect the practices of the day, or if they are merely an author's opinions on how things ought to be. Ancient sources are often subject to questions of authenticity, authorship, and authority—De Agri Cultura is no exception. Indeed, the text of De Agri Cultura has fallen under suspicion due to its haphazard organization in certain sections. Explanations abound for why the text is preserved as is, but it would be an extreme position for one to reject the idea that the text represents the author's opinions. Furthermore, the largely imperative tone of the piece seems to invite questions regarding Cato's authority on the subject of agriculture. How much could he know? And by what means could he acquire this detailed knowledge?

First, it should be noted that Cato's tone is typical of Greco-Roman technical treatises. Second, we are fortunate to have the archaeological record as a witness to the types of villas typical of the

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45 Saserna is known solely from literary references that indicate the one-time existence of a book or treatise written by father and son (Varro RR 1.2.22&28; Pliny HN 17.199; Columella 1.12). It seems that Varro's criticism of Saserna may have been a symptom of a larger problem. Varro draws attention to the number of oxen needed to till olive orchards (in olivetis). Cato 10.1 specified 3 yokes of oxen per 240 iugera; Saserna (according to Varro) recommended 2 yokes per 200 iugera. These figures may suggest that Saserna was even more frugal than Cato (Paul Harvey, In Conversation).

46 However, Cato's advice should not lead us to think that the traditional model was made obsolete by the "new" farming; K. D. White, Roman Farming (Ithaca: Cornell University Press, 1970), 19.

47 ibid.
Roman world. Modern excavations have confirmed the nature of press described by Cato and also the large investment villas written about by the early agricultural writers Varro and Columella. Both architectural layouts as well as the technology of the presses themselves are described in these early accounts. Additionally, their advice regarding olive tree densities and planting distances conform to those traditionally found in modern Italy, ancient and modern Greece, as well as the modern Levant. As the first recorded agriculturalist, Cato demonstrates what should be considered a realistic knowledge of the basics of large-scale investment farming.

Figure 2.3: A Catonian Trapetum and lever press. (After K. D. White, 1970, 228, fig. 57; 230, fig. 60.)

Cato’s Olive Villa

Cato’s discussion focuses primarily on two sizes of farms: an oliveyard of 240 iugera (Cato 10) and a vineyard of 100 iugera (Cato 11). For the purposes of this analysis the larger olive-producing farm is considered. Cato’s writings are especially helpful because of his matter-of-fact tone, which is largely imperative, as well as the abundance of details he supplies. For example, In De Agri Cultura, he specifies a list of items required to run a villa. The list begins with personnel, moves to the various pieces of production equipment and tools, and concludes with the suggestion of the use of certain household goods. This shrewd attention to detail adds to thebelievability of Cato’s knowledge of farming.

A governing principle of Cato’s prescriptions is the profitability of the farm. Because of this, self-sufficiency is seen as a necessity. For a farm to be profitable it should be capable of producing the basic supplies it needs to run so as to prevent spending money and decreasing profits. This required the presence of a house garden, land set aside for timber, and land for grazing. Taking these needs into account, K.D. White has estimated that approximately 200 iugera (520 Dunams) would have been free

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for olive cultivation.\textsuperscript{49} If this remaining land were planted with trees 30 feet apart as Cato suggests (6.1) then the large olive villa would have had approximately 6,000 trees.

On a farm of this size, Cato describes a permanent staff of 13 people with additional labor contracted during the peak agricultural seasons. This contracted labor force must have been a significant part of the process as Cato devotes special attention to the contracts (144ff). Cato notes that the contractors (\textit{conductores}) should furnish as many pickers (\textit{strictores}) and gatherers (\textit{leguli}) as needed, but goes on a few sentences later to suggest the contractor should furnish fifty active workmen, two-thirds of whom are to be pickers (144).\textsuperscript{50}

\textbf{Olive Oil Production as an Economic Indicator}

The level of detail in a discussion of economic activity in an ancient period is directly related to the level of detail present in the available source material. Put another way, the type of data dictates the level of details with which scholars can reconstruct the economic structure and activities of a certain period. For example, during the Ur III period in Mesopotamia, the evidence consists of thousands of receipts, allowing a fairly detailed reconstruction of the types of transactions which occurred. At Ugarit, the preserved textual evidence is such that the royal economy can be described. In both of these examples, the evidence is textual. The primary source for reconstructing the economic activity in these realms comes in the form of clay tablets inscribed in cuneiform. The durability of these texts contributes to their preservation and consequently, our ability to utilize them in reconstructing economic relationships.

Not all economic studies are so privileged. In areas where receipts or other forms of economic texts are not available, scholars look to the transference of regional products to posit trade relations. This simple form of economic observation is typical of prehistorical periods, such as the Neolithic and Chalcolithic, where scholars assume trade relations based on the presence of foreign goods such as metals or precious stones. In other periods, diagnostic pottery forms may represent inter-regional trade. While these methods work for the analysis of trade in periods lacking documentation, they are less useful for exploring production of specific resources.

\textsuperscript{49} Of the 2,440 iugera, White reserves 13 for grain for feeding the staff, 15 for fodder for the 19 prescribed work animals, and 12 for timber for building materials and firewood; \textit{Roman Farming}, 390-91.

\textsuperscript{50}This description is well within the scope of typical contract practices in which \textit{conductores} hire \textit{operarrii conducti}, hired laborers. On the model contracts in \textit{Cato} 146 and following, see P.W. de Neeve, \textit{Colonus} (Amsterdam: Gieben, 1984), 5-6, with n.19, and 47-53.
The most significant problem for analyzing the economic activity of the Iron Age Levant is the lack of textual source material. Some things may be extrapolated from artifacts such as the Samaria Ostraca, but by and large, the region is devoid of explicit economic texts during this period. For this reason, the “data” one might consider for economic work is lacking.

As a possible solution to the weak evidence for economic change in the Iron Age, this study will look to olive oil production. This is for two reasons, the ubiquity of olive oil and the durability of production facilities in the archaeological record. As demonstrated in the previous sections, olive oil was a part of daily life in all Eastern Mediterranean and Middle Eastern regions from early on. As the primary fat of the diet and the primary source for lamp fuel, the demand for olive oil was steady. Accompanying the ubiquity of olive oil is the nature of the archaeological remains of the production facilities.

One might suggest that other commodities would be equally useful. For example, grain and wine formed the other two components of the so-called Mediterranean triad, the core elements of the common diet in Mediterranean cultures. Unfortunately, the production of grain is difficult to reconstruct. While we might extrapolate volume based on arable land or city size, this type of calculation is purely subjective. Furthermore, as an agricultural product, grain requires no secondary processing beyond threshing, a process difficult to track in the archaeological record. Conversely, wine does require processing, though typically, the discovery of wine presses in excavations is not common enough to model widespread regional production volumes.\(^5\) Thus, olive oil makes for a perfect commodity to model production. It was not a luxury, but a product consumed on a daily basis by all classes. Its production was common in all periods, and facilities have been excavated in a number of contexts that span a number of chronological horizons.

The archaeological remains of olive oil production are persistent in the archaeological record. Because Iron Age facilities used monolithic stone vats and crushing basins, they are often recovered in situ or in very close proximity to their original context in a secondary usage. The simple fact is that Iron Age production used very large stones and those stones are not easy to move to another location.

Also contributing to the strength of olive oil as an economic indicator is the relative completeness of the archaeological record. A significant amount of olive oil production took place in the Shephelah, the fertile, hilly region between the coastal plain and the high hills of Judah. With

\(^{5}\) As will be demonstrated in Chapter Four, advancements in reconstructing these sectors have been made in the Sorek and Repha‘îm valleys, where excavations and surveys have demonstrated the intensification of grain storage and viticulture during the 7th century B.C.E. Even with the increased understanding for these isolated valley systems, grain and wine remain difficult commodities to model in a large region, or over an extended period of time.
major destructions taking place in this region in 701 B.C.E. and 604 B.C.E., two snapshots of olive oil production emerge, one each for the 8th and 7th centuries B.C.E. In most sites in the Shephelah where olive oil production facilities have been recovered, the remains are very close to the present day surface, if not visible on it. This makes it quite easy to identify the remains, and attribute a date to either the 8th or 7th century B.C.E.

When one considers the ubiquity of olive oil in daily life, the durability of the archaeological remains of olive oil production, as well as the preservation of remains due the political history of the Shephelah, olive oil emerges as a prime candidate for a representative dataset for the complicated economy of the Iron Age. By charting the frequency and distribution of olive oil production facilities over time, we gain a valuable window into the fluctuations in the olive oil industry. In the chapter that follows this study will review the archaeological evidence for olive oil production in the Iron Age Levant. I will review the evidence for the known remains in the 8th and 7th centuries B.C.E.

SUMMARY
This chapter has demonstrated that the olive was a vital part of Mediterranean culture in antiquity. From its earliest detection in the archaeological record, it has served as an important component of the region's diet, an important source of fat. A brief survey of ancient texts reveals that olive oil was widely used as a food and cosmetic. It took on significant status as a symbol in a number of cultures.

This chapter also described the basic ecological needs of the olive and described the process and equipment necessary for olive oil production. The remains of olive oil production facilities are large and durable, which makes them well preserved in the archaeological record. The durability of these remains, along with the ubiquity of olive oil in daily life make olive oil an optimal data source for considering the economic fluctuations of the Iron Age Levant.
CHAPTER THREE

MATERIAL EVIDENCE FOR ECONOMIC CHANGE: SHIFTS IN OLIVE OIL PRODUCTION IN THE IRON AGE II

The olive tree says to its master: “Care for me and I will nourish you. Water me and I will make you rich.”

—MEDITERRANEAN PROVERB

INTRODUCTION

The production of olive oil requires specialized equipment, typically in the form of a multi-stage crushing and pressing installation. These installations are either cut into bedrock or built from large, free-standing stone components. Because of the durable nature of these large stones, the archaeological detection and identification of olive oil production facilities is not uncommon. At sites which engaged in olive oil production, it is common to identify monolithic stone vats, rectangular crushing basins, or sets of large, perforated weights. At sites where production took place outdoors, leveled bedrock scarps with channels and cup marks, sunken basins, and vertical walls with cut niches for beams are indicative of oil production.

This chapter presents the material evidence for olive oil production in the Iron Age II. This presentation proceeds along chronological and geographical lines in order to quantify the frequency and distribution of facilities dedicated to olive oil production in the late Iron Age. As with any archaeological dataset, the evidence for olive oil production is incomplete yet always increasing and further developing our understanding of these historical processes. At many sites, only a few presses were excavated due to the limited scope of the excavations. When considering remains from the late Iron Age, the remains' proximity to the surface makes them subject to a number of post-depositional processes, such as reuse in later construction, or removal for the purposes of creating a stone-free
Because the dataset for olive oil production is constantly changing, the materials presented in this chapter are intended to be a representative survey of the distribution of presses temporally and geographically, as well as the nature of their contexts (domestic or industrial).

Figure 3.1: Olive Oil Production in the 8th century B.C.E. The most intensive production in the 8th century B.C.E. took place in the immediate vicinity of Samaria. Large 8th century production centers in Judah were excavated at Beth Shemesh and Tel Beit Mirsim.

Dating Olive Oil Installations

Because this study is concerned with the changes in frequency and distribution in production sites over time, it is important to discuss the issues involved in the process of dating olive presses. In many

1The site of Tel Miqne-Ekron is an example of the removal of archaeological remains to optimize agricultural land. Following the excavation of Temple Complex 650, many of the major components were removed and piled to the side or taken to the nearby Kibbutz Revadim in order to make use of the top of the tell for agriculture.

2Map adapted from Avraham Faust, “The Interests of the Assyrian Empire in the West: Olive Oil Production as a Test Case,” *JESHO* 54 (2011): 62-86; 79, Fig. 2.
cases, such as those in Judah, the presses are confined to buildings with strong stratigraphic identities. In these, ceramic evidence points strongly to an 8th century date of final use. In exterior production sites, such as those in the Samarian hills, dating can be more difficult. If the installations are associated with a village, it may be reasonably hypothesized as to when the presses ceased to function. However, if the relationship to a village or settlement is not clear, dating a rockcut installation can be more difficult. Because they are exposed rock faces there is rarely sufficient accumulation to ascribe dates on ceramic grounds. Instead, dates must be ascertained from pottery at the nearest surveyable location.

**Material Evidence for Eighth Century Olive Oil Production**

*Israel*

**The Hills of Samaria**

Surveys conducted by David Eitam in 1975-76 recorded 40 rock-cut installations identified as olive oil presses. These were found in the Samarian Hills at the sites of Kh. Banat-bar (17 presses), Kla' (15 presses), and Kh. Kudesh (5 presses), with 3 additional installations distributed among three sites.3

The location of the presses dictates their form.4 Because of the prevalence of naturally occurring bedrock outcroppings, the presses of the Samarian Hills are open-air, rock-cut installations along cliff faces. For an efficient operation, the press required a flat surface (tread), in which vats could be cut, and a vertical wall (riser), in which the pressing beam could be anchored. As perfect natural terraces are rare, the treads of the pressing area were roughly leveled. Eitam characterizes the presses as having a small bowl of 0.25-0.30 m. in depth and diameter, encircled by a small channel (ca. 0.02-0.03 m.) 0.15 m from the rim of the vat.5 To facilitate drainage, this channel was then connected by a hole or second, radial channel to facilitate drainage. This, of course, was varied as the pressing

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4 The rock-cut central collection press, typical of the hills surrounding Samaria, are categorized by Frankel as Type Ts26–2. For further discussion of the type, its variations, and distribution, see Rafael Frankel, *Wine and Oil Production in Antiquity in Israel and Other Mediterranean Countries* (Sheffield: Sheffield Academic Press, 1999), 62-63.

surface could be higher, or the channel wider. Furthermore, the collection varied between a central vat with pour-over, and a flat press with lateral collection.  

Cut out niches are present in the riser of the terrace in all of the pressing installations. A niche typically occurs 0.30-0.40 m above the tread; it is 0.20-0.30 m across and 0.10-0.15 m deep. The consistent appearance of the cut niche above the presses is what led Eitam to interpret these installations as olive presses.  

At Banat-bar the installations are found in two discrete areas. Some are located at the pinnacle of settlement, on top of the cliffs, while others are distributed along the terraces between the houses. This distribution led Eitam to posit that some of the industry was privatized, while the ruling municipality owned the other portion. Conversely, Kla' possessed a single industrial area just outside of the city walls. Here, the industrial presses were closest to the roads that led from the olive groves. Eitam sees this type of planning as indicative of a centralized authority that has directed the operation toward marketability and efficiency of labor. This may also be reflected in the scale of the operation—according to Eitam the city was capable of producing a minimum annual yield of 14,000 lt.  

The industrial zone of Kla' is divided into two sections. The major industrial area contained 14 presses along with crushing basins, and secondary separation vats, and rock-cut cup marks for stationing jars as they were filled. A second industrial area with 7 presses was located on the western part of the site. Here there were also two large water reservoirs, and two large courtyards (one of which was surround by buildings built on a high base). Near the gate, the surveyors identified longer rooms likely associated with storage. A wall surrounded the entire settlement, with a substantial gate possessing towers on either side. According to Eitam, these features speak to a conscious attempt at central organization.

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6 ibid.
7 ibid., Pl. 231-2.
9 ibid.
10 ibid.
11 ibid., 60.
12 ibid., 59-60.
In addition to Eitam’s surveys, a number of villages have yielded presses in the course of survey and excavation. At Kurnet Bir et-Tel, surveyors identified a concentration of ten rock-cut olive presses, where the majority of pottery (69.4%) dated to the Iron II.\(^5\) The site of Sheikh Isa also produced a large concentration of Iron Age rock-cut olive presses with the majority of the pottery (46.8%) dating to the Iron II.\(^6\) Likewise, at Kh. Tibna a large concentration of Iron Age rock-cut olive presses was found carved into exposed scarps of bedrock (similar to Kla’ and Banat-bar). The majority (35.2%) of the pottery collected here dated to the Iron II.\(^5\) At Deir el-Mir, a large village in western Samaria near Kh. Banat Bar and Kh. Khodash (see above), a few concentrations of olive presses were identified.\(^6\)

**Northern Israel**

While the highest concentration of olive oil production in the Northern Kingdom appears to have taken place in the immediate vicinity of Samaria, select sites north of Samaria have also produced presses. In these instances, the level of production seems to be much smaller; they do not share the industrial qualities of their Samarian counterparts which appear to be centrally organized. With the exception of Rosh Zayit, the north shows very little concern for industrial levels of production, as most sites such as Hazor, Shechem, and Tel Qiri, contain only one press.\(^7\) A possible candidate for larger scale production is found at Shikmona, where three presses were suggested to represent production on an “industrial scale.”\(^8\)

**Horvat Rosh Zayit**, located in the western Galilee overlooking the Akko Plain, was a home to a small Phoenician fort between the 10th and 9th centuries B.C.E. Following the destruction of the fort,

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\(^{6}\) ibid, 389. Faust also observed these presses on a visit in 2008. See Assyrian Motives.

\(^{7}\) *Highlands of Many Cultures*, 367. Also Faust visit.


\(^{8}\) Eglavish 1978: 1103.
the site remained abandoned until the mid-eighth century when a small agricultural settlement was established.9 Here, Building 100 was established on the bedrock for the production of olive oil for a short time in the 8th century.10 Building 100 was home to four presses: three inside presses and one outside press. The presses inside utilized freestanding vats, while the installation built 10 meters outside Building 100 used a nearby exposure of bedrock for a rock-cut installation that included a mortar (.8 m diameter x .7 m deep), an oval pressing bed, and a channel for lateral collection. In the vertical face of the bedrock cliff there existed a small rectangular niche for the press beam.11 The village and its presses were only used for a few decades until the village went out of use, most likely in association with the 734 campaigns of Tiglath Pileser III.12

Judah

Tell Beit Mirsim

The excavations at Tel Beit Mirsim produced seven stone-carved “dye vats.” This led W.F. Albright to hypothesize nearly 30 total installations at the site.13 His conclusions were countered by Dalman, who suggested that the vats were olive presses.14 In 1979, Eitam reexamined Albright’s conclusions by comparing their components to those found in open-air olive pressing units in the Samarian Hills. Eitam proved that what Albright identified as dye-vats were, in fact, olive oil production facilities.15

Presses: As Albright reports, the round “vats” ranged in size from 0.7–0.9 m in height and diameter and the “roughly spherical” interior basin ranged from 0.30–0.45 m in diameter with a mouth “one-half to two-thirds wide.”16 Surrounding the perimeter of the vat’s upper surface was a single carved channel with a hole, which drained inward to collect the pressed liquids. The surface of the vats, however, did vary. Some presses lacked any channels, while others possessed two concentric

10 Building 100 is dated based on the presence of holemouth jars, ‘torpedo’ jars, shortened-rim cooking pots, Shallow bowls, and red slipped bowls. Zvi Gal and Raphael Frankel. “An Olive Oil Complex at Hurvat Rosh Zayit,” ZDPV 109 (1993): 128-140; for ceramics see Fig. 3.1-5.
12 Gal and Alexandre, Horbat Rosh Zayit, an Iron Age Storage Fort and Village, 178.
16 Albright, Tell Beit Mirsim, 46.
channels for collecting the liquid. These two vats were often found side by side in a rectangular room.

Crushing Basins: In both rooms SE 32A-2 and 3, Albright reports the presence of stone-and-mortar basins in front of the vats (1943: 56). In room SE 32A-2, the basins were 0.65 m deep and 1.3 m long and 0.9 m wide. In room SE 32A-3, the basin was partially plastered and 0.55 m deep, 1.8 m long and 0.8 m wide. These basins most likely represented the standard crushing basin found in oil complexes. In addition to these stone and masonry basins, room NW 3A-4 produced an overturned stone trough which measured 1.0 x 0.65 m (exterior) and 0.70 x 0.40 m (interior). In the context of oil production, it is identifiable with similar crushing basins found at sites such as Miqne, Batash, and Beth Shemesh.

Stone Weights: Room SE 32A-3 possessed 6 perforated stone weights (1943: 57). In NW 3A, there were 8 additional stones that measured 0.30-0.40 m across and approximately 0.20 m in thickness (ibid.). An additional 18 stones, heavier than their counterparts in Albright’s dye-plants, were found in NW 32-12 (1943: 62).

**Beth Shemesh**

The site of Beth Shemesh has produced a total of 18 olive oil installations in Level 2, which excavators date to the Iron IIB (8th century). The presses were found primarily in domestic contexts rather than within a centralized industrial area. These were beam presses weighted by perforated stones. The perforated stones are pendant shaped and ranged 0.6-0.8 m in height. The shape and dimensions conform to the other press weights found in the region.

Another typical press component present at Beth Shemesh is the large crushing basin (Fig 3.2). The basins here are carved from a single piece of stone and, based on published images, appear to

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27 ibid., 57.
28 ibid., 56.
29 Eitam also reached this conclusion; “Olive Presses of the Israelite Period,” 152.
32 Raphael Frankel has dedicated a chapter to the typology of beam weights the finds from Beth Shemesh featured prominently; *Wine and Oil Production in Antiquity in Israel and Other Mediterranean Countries* (Sheffield: Sheffield Academic Press, 1999), 99-106.
be of similar shape and dimension to those found elsewhere in the Levant.\textsuperscript{33} The vats at Beth Shemesh presented by Grant and Wright are round, stone-cut vats, with a raised lip around the perimeter.\textsuperscript{34} From the photographs it appears that these vats were freestanding in antiquity (rather than buried) and served as the press bed and central reservoir for oil collection. Currently no published reports contain the dimensions of the vats or crushing basins, making it difficult to model the potential production for the site. The first publication of the Renewed Beth Shemesh Excavations should provide these details for the five newly excavated press installations, making such calculations possible.\textsuperscript{35}

Figure 3.2: A Volunteer Cleans a Crushing Basin at Beth Shemesh.\textsuperscript{36}

NEW DIRECTIONS: THE SHEPHELAH

A renewed emphasis on the archaeology of the Shephelah will undoubtedly shed new light on the underexplored economic history of this region. The manufacture of olive oil at sites such as Beth Shemesh and Beit Mirsim is known because the presses were found within the city, on the tell itself. Those installations discovered in Samaria are largely known because they remained exposed on the

\textsuperscript{33}Elihu Grant and G.E. Wright, \textit{Ain Shems Excavations (Palestine), Part IV (Pottery)}. (Haverford, PA: Haverford College, 1938), pl. XX:2, XXI:1; Bunomovitz and Lederman, “Border Communities,” 137.

\textsuperscript{34}Grant and Wright, \textit{Ain Shems}, pl. XX:4, XXI:1.

\textsuperscript{35}Bunomovitz and Lederman, “The Archaeology of Border Communities,” 137.

\textsuperscript{36}Adapted from Bunomovitz and Lederman, “The Archaeology of Border Communities,”137; Photo by M. Weinberg.
bedrock due to the lack of sedimentation or other depositional processes. It is likely that many production sites in the Shephelah are located off the tells, and probably closer to where the olive trees grew.\(^{37}\)

Tel Burna was an ancient border site with access to large fertile areas. Since 2010, excavations at Burna have exposed impressive fortifications around the summit of the tell, as well as a large, well constructed building dating to the 8th century. The preliminary survey of Tel Burna in 2009 identified numerous rock-cut agricultural installations in the exposed bedrock surrounding the area around the tell. On the tell, numerous silos have been identified in association with the 8th century remains, and multiple stamped handles dating the 8th and 7th centuries have also been discovered.\(^{38}\) Burna's location on the Guvrin and its proximity to Maresha, which was home to a prominent olive oil industry in the Hellenistic period, suggests the site could produce important results for the study of 8th century olive oil production.\(^{39}\)

Tell es-Safi has produced multiple pressing installations dated to the 9th century, one of which was discovered in close proximity to the proposed Philistine temple, strengthening the previously observed link between cult and oil production.\(^{40}\) Also present at Tell es-Safi in temporary Stratum A5 is a press of the type recently presented by R. Beeri.\(^{41}\) In addition to these presses found on the tell, Bliss and Macalister observed what they identified as wine and olive oil production areas cut into the bedrock off the tell.\(^{42}\) Similar rock-cut installations are located east of the tell on a large exposure of bedrock that is presently occupied by a bedouin encampment. Approximately 200m, east of Safi's lower city (Area D), a gently sloping area on the south bank of the Elah river has two olive presses which are visible on the surface. While these presses off of the tell appear to be of the 9th century type

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\(^{37}\) Halaf, for example, has a concentration of olive presses on a ridge neighboring the tell (Cynthia Shaefer-Elliot, in conversation).


found on the tell, they may have continued in use in the 8th century in Judean hands following the destruction of Philistine Gath. Given the agricultural nature of Gath’s name, further exploration may reveal that Gath was indeed a “fortified complex where agricultural products were brought for processing and storage” even into its history as a Judean border site.

**Material Evidence for Seventh Century Olive Oil Production**

The seventh century is marked by a drastic reduction in the number of sites engaged in olive oil production, as well as the range of their distribution. Following the fall of Samaria in 722, Israel no longer existed and its regional dominance in olive oil production was lost. Likewise, the events of 701 had catastrophic effects on the olive oil industry of Judah, and major producers such as Beit Mirisim and Beth Shemesh failed to reengage their former industries. Instead, the center of production relocated to the western Sorek valley, at the sites of Tel Batash-Timnah and Tel Miqne-Ekron.

![Map of olive oil production in the 7th Century B.C.E.](image)

**Figure 3.3: Olive Oil Production in the 7th Century B.C.E.**

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43 The area containing the presses has been named Area K and will be the focus of excavations in the coming seasons.


45 Map adapted from Faust, “The Interests of the Assyrian Empire in the West,” 79, Fig. 2.
Batash-Timnah

In the 7th century layers at Tell Batash-Timnah Stratum II, excavators have identified olive oil complexes in Areas E and H.

Area E: Building 950 (Fig. 3.3) appears to have been built according to a comprehensive town plan, as its northern face is inline with building 743. Because the ground slopes from east to west, leveling was undertaken. The walls are constructed using small stones in one course level with the floor, followed by a course of large stones approximately 0.6-0.7 m wide. On top of this likely rested a brick superstructure because the building was filled with brick fall.

Entrance room 958 (5 x 4.5 m) provided access from the street which ran along the city wall, and may have been a shop. Adjoined to the forechamber is a central space containing the press installation. This space is separated by four pillars; on one side a flagstone floor and on the other a floor of beaten earth. In the southwestern corner of 950 is an oil pressing installation. The installation, comprised of a platform 2.6 x 3.2 m, is raised 0.25 m above the surrounding floor. This platform consists of a frame of larger stones filled with rubble. In the center of the platform is a large crushing basin 1.15 x 1 x 0.2 m deep. It is flanked by sunken press vats on either side. These vats are roughly square (0.5 x 0.6 m) with circular openings (0.25 m), and approximately 0.35 m deep. Their mouths are flush with the platform surface and show no finishing work. The presses are 0.8-1.0 m north of the southern wall of the building.

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47 ibid.
49 Mazar, *Timna (Tel Batash)*, 216.
50 ibid., 215.
With the press, the excavators discovered three crushing rollers made from stone.\textsuperscript{52} The largest roller is 0.22 m in diameter and 0.6 m long; the second 0.23 m x 0.45 m long; and the smallest, 0.14 m x 0.5 m long. The cylindrical rollers have indentations on the ends in which the handles would be attached. The rollers were presumably used to crush the olives in the central basin to create a mash, which would then be loaded into straw baskets and pressed. In addition to the crushers, three stone weights were discovered in the room. They are carved from stone and are approximately 0.5-0.6 m in size. They are conically shaped, with a squared-off bottom and perforated top, presumably for hanging by rope from a wooden beam.\textsuperscript{53}

Area H: Just under the topsoil, excavators revealed an industrial-domestic complex of Stratum II (7th century).\textsuperscript{54} This complex was built over the public building that existed previously in Stratum III. As in Area E, the walls in Area H are built of small stones below floor level, and topped with a single course of larger stones.

Olive Press H959 is located within Space H952 and is bordered by walls H977 (S) H962(E), and on the west, a line of pillars continuing the line of H1004.\textsuperscript{55} As in Area E, the olive oil press found in

\textsuperscript{52} After Mazar, \textit{Timnah (Tel Batash)}, 203, Fig. 44; 214, Fig. 46.
\textsuperscript{53} ibid., 215-16.
\textsuperscript{54} ibid.
\textsuperscript{55} Mazar, \textit{Timna}, 150.
\textsuperscript{55} Mazar, \textit{Timna}, 156.
Area H is located on a platform. The platform of Press H959 is 3.3 m wide and 3.75 m deep. Unlike the press in Area E, which is set in one corner of the room, the platform of Press H959 extends to the walls on three sides.56 On the north side, the platform is approximately 0.45 m higher than the flagstone floor below it. In the center of the platform is a large crushing basin (H983) measuring 1.3 m long, 0.8 m wide, and 0.42 m deep. The basin is sunk flush with the level of the platform and its edges are dressed square. Peculiar to this installation is a single squared stone located on the northern edge of this basin. This stone's top rests approximately 0.15 m above the edge of the basin. The excavators are uncertain of its purpose and have hypothesized that it may have functioned as an anchor for a wooden device used in the crushing process.57 The authors give no further indication of what this "wooden device" could be or how it might function. It is the opinion of this author that the rock is related to the crushing process and most likely served as a foot-brace, where the individual conducting the crushing could place his leading foot during the pushing and pulling motion of crushing. Not only does this keep the laborer from falling into the basin, it also offers a mechanical advantage in pulling the crusher back.

The central basin is flanked on either side by collection vats.58 Vat H985 on the west is square in form (0.75 m x 0.85 m.). Its inner depth is 0.64 m. The corresponding vat to the east is a circular one with a diameter of 0.95 m. and an inner depth of 0.4 m deep. Both of these press beds have a depressed center with a slight curb around the edge. The excavators have suggested that a board would have been placed here in order to serve as a foundation for the straw baskets.59 The beams for the presses were anchored in 0.25 m niches located in Wall H977. While no crushers were found, three perforated conical weights (approximately 0.6 m long) were found north of the press.

Tel Mique-Ekron
The biblical city of Ekron has been positively identified with the modern site of Tel Mique.60 Mique is located on the south bank of the Wadi Timnah, which feeds into the Nahal Soreq, placing it essentially

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56 ibid., 158.
57 ibid.
58 ibid.
59 ibid.
on the border between the coastal plain and the hills of the Shephelah. Its position on the edge of the coastal plain made it perfect for olive cultivation and enabled further access to Judean crops grown in the hills to the east. At Ekron, a well-defined city plan consisting of various zones is found in the 7th century Strata IB-C. At the heart of the tell an inner city contained a domestic zone as well as a private zone, which included a large palace complex. Most notably, the excavations at Ekron revealed an extensive industrial zone in its outer city.

Situated along the perimeter of the city, the industrial zone consisted of a set of buildings constructed against the city wall, a well-defined central street running parallel to the wall, and another set of buildings across the street. At the time of their discovery, the original 150 presses dedicated to oil production made up 40 percent of the total number of known Iron Age installations for producing oil in Israel. As of 1996, a total of 164 distinct presses have been identified. Of these, 115 are in the form of complexes, consisting of a crushing basin and press beds. The majority of the presses are found along the perimeter of the city creating a distinct industrial zone (Fig. 3.4, 5).

Architecture: The first fully excavated press complex, Building 1, was composed of two main rooms with additional ante-rooms. The deepest room was home to the olive press, the middle room the separation process, and the ante-chamber food preparation. Room 15 contained 108 total vessels, while room 14 contained 88 vessels. Exact counts are presented in Table 1 (After Gitin, 1989, 37: Tables 1 and 2).

Presses: The presses at Ekron typically measure 0.7 x 0.6 x 0.7 m. The flat pressing surface is surrounded by a raised edge with a central vats carved out in the middle. These square presses have been termed the “Ekron Press” (105 total) and are the more popular form at Ekron. These presses

65 Eitam, “Royal Industry,” 60.
68 Gitin, “A Type Site for the Inner Coastal Plain,” 232.
have a depression in the pressing surface, as well as concentric and radial grooves cut into the surface to aid the flow of oil. The collecting vat is bell-shaped and is marked by a small bowl-like depression at its bottom. The second type of press found at Ekron, the “preliminary press,” is a cylinder-shaped press, approximately 0.60 m wide by 0.80 m tall. In this type the pressing surface is not channeled, but instead slopes inward toward a central vat, which is straight walled and contains a bowl-like depression in the bottom.\textsuperscript{67} The average volume of the collecting vats for the site is 68 lt.\textsuperscript{68}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3_5.png}
\caption{The Distribution of Olive Presses at Tel Miqne-Ekron.\textsuperscript{69} Figure 3.6: A Reconstruction of Ekron Pressing Room (Tel Miqne Excavations).\textsuperscript{70}}
\end{figure}

Crushing Basins: The stone crushing basins of Ekron were rectangular, measuring 0.7 x 1.1 x 1.5 m. Their average volume was 300 lt., which would have been more than enough to fill the baskets for both presses. The basins were used in conjunction with stone rollers. Three such rollers were

\begin{itemize}
\item\textsuperscript{67} ibid.
\item\textsuperscript{68} ibid., 170.
\item\textsuperscript{69} After Eitam, “The Olive Oil Industry at Tel Miqne-Ekron,” 186.
\item\textsuperscript{70} After Seymour Gitin, “Tel Miqne-Ekron in the 7th BC City Plan Development and the Oil Industry,” in \textit{Olive Oil in Antiquity : Israel and Neighbouring Countries from the Neolithic to the Early Arab Period} (eds. D. Eitam and M. Heltzer. History of the Ancient Near East Studies, vol. 7, Padova: Sargon, 1996), 219-242; 238, Fig. 5.
\end{itemize}
discovered in the course of survey and one during excavation.\(^7^3\) The excavated roller is 0.6 m long and 0.22 m in diameter. The ends of the roller are semi-conical with small cup marks (ca. 0.03 m) suggesting the insertion of a fork-like device used a handle. Eitam has reported the reconstructed dimensions of a second roller as 0.45 m long and 0.15 m in diameter.

Weights: The weights applied to the crushing beam are pyramidal in shape measuring 0.40 x 0.55 x 0.30 m, and weigh between 70 and 120 kg.\(^7^2\) They are perforated at the top, with a hole measuring 0.08 m. Nine of these weights were found in situ during survey and another 11 in the course of excavation. The lever weights were also found in secondary contexts, having been used as building materials.\(^7^3\)

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\(^7^1\)ibid., 172.
\(^7^2\)ibid.
\(^7^3\)ibid.

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Figure 3.7: A comparison of olive oil production in the 8th and 7th centuries B.C.E.\(^7^4\)
INTERPRETATION

Judah's 8th century production of olive oil does not seem to have been centrally controlled. Beth Shemesh appears to be a small cottage industry built in residential areas.\(^75\) Olive oil production was certainly an important component of Beit Mirsim's economy, but similar to that at Beth Shemesh, the distribution of the presses in domestic contexts suggests that control of production rested more with the people owning the presses, rather than with any single institution. This stands in stark contrast to much of the production in the Northern Kingdom, where presses were regularly found grouped in a single area.

The material evidence for olive oil production demonstrates a shift in the distribution and intensity of production between the 8th and 7th centuries B.C.E. During the 8th century, the highest concentration of presses can be found in the hills of Samaria. These presses typically take advantage of the Samarian topography, and are clustered around exposed scarps of bedrock, where beams could be anchored in vertical faces, and treads and vats carved into the surface. At the same time, Judah was home to a handful of sites with free standing crushing basins and press vats. At sites such as Beit Mirsim and Beth Shemesh, these presses were not concentrated in any meaningful way as to indicate centralized production; rather, their contexts were primarily domestic in nature. The northern sites produced oil until Israel's demise in 722, and their southern counterparts were in operation until 701. At that time, a new center of production emerged concentrated on the western end of the Sorek, at Batash and, most prominently at Tel Miqne-Ekron.\(^76\) At this time, Ekron and its satellite Batash represented the primary centers of production for olive oil in the southern Levant.

The Seventh Century and the Pax Assyriaca

The excavators of Tel Batash-Timnah understand the presence of oil production facilities in the 7th century to be of the same nature as those found at Ekron.\(^77\) Their reasons are the geographical

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\(^{74}\) Maps adapted from Faust, “The Interests of the Assyrian Empire in the West,” 79, Fig. 2.

\(^{75}\) Bunomovitz and Lederman “The Archaeology of Border Communities,” 137.

\(^{76}\) Faust summarizes this transition in his geographical and chronological survey of olive oil production facilities. Note specifically his graph outlining the regions of production and their proposed times of activity; “The Interests of the Assyrian Empire in the West: Olive Oil Production as a Test Case,” \textit{JESHO} 54 (2011): 62-86; see 71, Fig. 1. Despite its lack of detail, the chart manages to capture the movement of the industry over the course of the late Iron Age.

\(^{77}\) Kelm and Mazar, \textit{Timnah: A Biblical City}, 161-162
proximity to Ekron and the common political situation, namely their domination by the Neo-Assyrian Empire. These conclusions are compounded by the nearly identical material culture including architecture and pottery. Mazar and Kelm differ from the conclusions of Gitin, in their explicit recognition of the fact that one of these industrial complexes (the one in Area E) was likely owned by a family because it was located in a residence. Their conclusion that the Assyrian empire was the impetus for the increase in wealth and demand for the production of oil is similar to that of Gitin; however, they incorporate a nuanced understanding of the relationship between the underlying social fabric of Iron Age Judah and production.

Ekron is unique in the scale and organization of its production and offers the potential for insight into the imperial and economic implications of Assyria’s domination of the Levant in the late Iron Age. The excavators of Tel Miqne understand the site as the center of an oil industry that arose during the Pax Assyriaca. Lending support to the industrial nature of production at Ekron are the uniformity of the architecture and technology found in the complexes. Working with excavators, David Eitam calculated that this impressive operation likely required 3,500 dunams of cultivated olive trees and was capable of producing nearly 245,000 liters of olive oil annually. Gitin and the excavation project have adopted these numbers wholesale, and they have become a centerpiece in the reconstruction of late Iron Age economy. Since his initial work in 1987, Eitam's figures have become canonized in the historical treatments of the Assyrian administration of the Levant in the 7th century BCE. Recent attempts at reconstructing the economy of the Eastern Mediterranean focus heavily on

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88 ibid.

89 For Gitin, the pax Assyriaca was the 70 years of Assyrian hegemony in which the Levant experienced unprecedented prosperity. This prosperity, which included economic development and the maturation of a major international trade network, was the direct result of Assyr's new “super-national system of political control in the eastern Mediterranean basin;” “Tel Miqne-Ekron in the 7th Century BCE: The Impact of Economic Innovation and Foreign Cultural Influences on a Neo-Assyrian Vassal City-State.” Pp. 61-79 in Recent Excavations in Israel: A View to the West. Reports on Kabri, Nami, Miqne-Ekron, Dor and Ashkelon (ed. S. Gitin; Archaeological Institute of America Colloquia & Conference Papers, No. 1, Dubuque, Ohio: Kendall/Hunt, 1995), 61.

90 David Eitam, “The Olive Oil Industry at Tel Miqne-Ekron in the Late Iron Age,” in D. Eitam and M. Heltzer (eds.), Olive Oil in Antiquity: Israel and Neighbouring Countries from the Neolithic to the Early Arab Period (History of the Ancient Near East Studies, vol. 7; Padova,1996), 167-196; see especially, 183.

the site as an industrial center. Even treatments of Phoenician colonial expansion during the Iron Age are dependent on the role of Ekron as the seat of eastern production. Clearly, Ekron occupied a significant role in the regional and international economies of the late Iron Age based on the scale of production and the distances which its finished products traveled.

For Gitin, Ekron's location gave it numerous advantages, such as geography, topography, access to raw materials, and strategic trading routes. In addition to these more tangible assets, Ekron possessed an intact infrastructure and political stability following the campaigns of Sennacherib. For Gitin, the campaigns of Sennacherib are pivotal as the Levantine economy develops from having several sites engaged in cottage industry for local consumption to mass production focused on export. Gitin has suggested that Assyria's presence in the land promoted political stability that allowed the economy to thrive. This political and economic stability in the region would not be permanent, however. According to Gitin, in the last third of the 7th century Assyria withdrew to manage conflicts on its eastern border, thus allowing Egypt to enter the political picture. At this time Ekron transitioned from IC to IB, a level in which the production of oil decreased as seen in the dismantling of select pressing installations.

Reception of Gitin's Interpretation
Gitin's interpretations of Ekron are not without qualification from the scholarly community. At the center of scholarly debate are matters pertaining to the impetus for Ekron's rise, and the source and role of foreign influence in Ekron's development. Because Ekron's production appears to diminish in


85 Gitin, “Tel Miqne-Ekron in the 7th Century B.C.E.,” 63.
86 ibid., 69.
87 ibid., 73.
88 Seymour Gitin, “Tel Miqne-Ekron in the 7th BC City Plan Development and the Oil Industry,” 228.
the latter part of the 7th century, scholars attempt to associate this diminution with historical developments in the region. Stager suggests that, because Egypt was a key partner in the exchange of olive oil, one might expect that some of the installations were built after Assyria left and Egypt gained control in the region.86 Stager’s position suggests economic development fueled by the Egyptians rather than some form of Assyrian economic policy, as Gitin might suggest. While the questions Stager raises are significant, post-dating the Stratum IC explosion of oil production to 640 B.C.E. causes chronological difficulties.99 A solution is to date the expansion of Ekron to the second quarter of the 7th century, with the understanding that the later transition between Assyrian and Egyptian control need not necessitate a disruption in the manufacture of oil.98

Rather than down-dating the success of Ekron to the later 7th century, Na’amān dates the founding of Stratum IC at Ekron to the second half of the 8th century with the understanding that the textual evidence contradicts a later, 7th century founding.92 Specifically, Na’amān is concerned with the status afforded to Ekron in the Azekah Inscription (Sennacherib’s Letter to the God) and its place in the palace reliefs of Sargon II.93 His argument is that, rather than developing into a prominent city after the destructions were said to have taken place,94 in order for Ekron to have been mentioned in these places it must have been important at the end of the 8th century: Why would kings boast of victories over such an insignificant opponent? This concern is inspired by Na’amān’s view that Ekron was insignificant during the time of Sargon II and Sennacherib.95

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90Peter James, “Dating Late Iron Age Ekron (Tel Miqne),” PEQ 138 (2006): 85-97, 90.
96As I will demonstrate in Chapter 4, development in the first half of the seventh century is appropriate given the historical trend toward estate farming. James also leans toward dating the expansion of the industry to the second quarter of the 7th century (90).
98ibid.
99An alternate view by Zuckerman and Shai proposes that Gath, not Ekron, was the target of Sennacherib’s siege; Alexander Zuckerman and Itzhak Shai, “The Royal City of the Philistines” in the ‘Azekah Inscription’ and the History of Gath in the Eighth Century BCE,” UF 38 (2006) 729-778. If valid, the argument weakens Na’amān’s case. Recent excavations have made a strong case for the destruction of Gath in 701 at the hands of Sennacherib; Jeffrey R. Chadwick and Arem M. Maeir, “How Households Can Illuminate the Historical Record; The Judahite Houses at Gath of the Philistines,” in New Perspectives on Household Archaeology (eds. B. J. Parker and C. P. Foster; Winona Lake, 2012), 501-518.
The observed reduction in production in Stratum IB is based on limited excavation. While certain features have gone out of use or show modification, the excavation is not comprehensive enough to account for what might have developed elsewhere, either on the site or in satellite locations. It could be that with the development of the industry, the technology became more efficient or more available, allowing for the development of production centers closer to the olive groves. In such a hypothetical situation, sites like Tel Batash might have entered the market to either compensate for reduced production, or to increase efficiency.96

Avraham Faust rejects the notion that Assyria was directly involved in the rise of Ekron or the economic success in the region following Assyrian hegemony. Instead, he attributes the economic development of Ekron to the strength of Ashkelon and the rise of Mediterranean trade in the 7th century.97 Faust certainly rejects the notion that there existed any sort of intentional investment or policy that facilitated Ekron's growth. In keeping with other scholars, Faust sees as Assyria's greatest contribution to Ekron's success the decision not to destroy the city.

Faust attributes the rise of Ekron to the demand of the Mediterranean markets and rejects the notion that demand for tribute could produce economic success. He writes, “The Assyrian demand for tribute and taxes indirectly forced the surviving states (or rulers) to improve their economies in order to pay the Assyrians and at the same time maintain their quality (or standards) of life. But viewing this as incentive to the economy is a dubious perspective.”98 Here Faust accepts the implications of the tribute obligations, while rejecting their ability to provide an impetus for economic development. Instead, he sees the development of Ekron as a natural occurrence in the face of increased economic demand from Mediterranean markets. However, Faust does not provide an adequate explanation as to why Ekron emerged after 701, while other Judean sites abandoned their previous production. In an effort to distance himself from the claims of Assyrian intervention in the economic affairs of the

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96 A recent salvage excavation at the site Tel Hadid may provide further insight into the trend toward reduced production. At Hadid, 25 olive presses dating to the 7th century were discovered. This concentration of presses is not only significant, but of the scale necessary to affect the production levels at Ekron. Further work is required to ascertain the nature of Hadid's industry in light of regional production patterns. Central to this future direction of research is the question of whether Hadid was an expansion of the Ekron industry, or a compensation made by Judah in the second half of the 7th century in order to re-enter the olive oil industry. See, Etty Brand, Salvage Excavations near Tel Hadid—A Preliminary Report (Tel Aviv: Institute of Archaeology, Tel Aviv University, 1998 (Hebrew)).


98 Faust, “The Interests of the Assyrian Empire,” 76.
Levant, Faust has gone too far in the other direction, placing the responsibility for the development of Ekron on the growing Mediterranean markets.

For Faust, the “pull” of the Mediterranean markets influenced the development of the local economies of the southern Levant.90 In his view, the conditions of the international markets were sufficient to realign the traditional agricultural patterns, inspiring a massive industrial operation at a site that was not a center for olive oil production in the preceding century. It is odd that Faust prioritizes voluntary economic activity as the impetus for the intensification of olive oil production at Ekron. Why, for example, would the demand for tribute not have similar ramifications? For Faust, the citizens of Ekron are merely opportunists operating in a free market, making massive investments because potential profits exist. Not only is this view anachronistic, it lacks nuance with regard to the extremely complex geopolitical situation. The primary need for surplus in the 7th century was not profit for profit’s sake—it was profit for the sake of paying tribute and forestalling a repeat of Assyria’s campaigns in 701.

Ultimately, Faust’s objection to Ekron’s interpretation lies in giving credit to Assyria for intentionally developing Judah’s economy. He objects to a model of economy that was proposed by Gitin 30 years ago, but has not been updated by Gitin in the last two decades.91 While other scholars have picked up Gitin’s ideas and interacted with them during that timeframe, the notion that any of these scholars in the year 2015 would claim Assyria’s intentional intervention in Ekron’s economy is a stretch. The state of economic discussion has been revolutionized in the last three decades with many renewed excavations in the Shephelah and hill country providing high resolution data that speaks to the emergence of economic and other agro-pastoral trends in the late Iron Age. Gitin’s initial assessment of Assyria’s role fit with the academy’s understanding of the Empire’s western periphery in the 1980s. Today, that assessment appears to be a significant overstatement, especially where Assyrian royal motives or interests are concerned. So, although Faust is not entirely wrong about his critique of Assyria’s role, he has taken advantage of a lag in scholarly publication to levy an assault on an outmoded view of Ekron’s emergence. In the process of doing so, he has overstated his own position while simultaneously completely removing tribute obligations to Assyria as an explanation for the development of the economy. A more nuanced view of Assyria’s role would move beyond Faust’s simple explanation that Assyria’s main contribution was not destroying Ekron. As I will demonstrate

90 ibid., 75.
91 Specifically Gitin’s 1995 description in which he attributes Ekron’s rise to the mercantile interests of the Neo-Assyrian Empire; “Tel Miqne-Ekron in the 7th Century,” 61.
in the following chapters, Assyria acted in very specific ways that facilitated Ekron's rise as the premier production center for olive oil.

CONCLUSION
A survey of the material evidence for the Iron Age olive oil industry suggests that olive oil production took place on a large scale in the Northern Kingdom of Israel in the 9th-8th centuries B.C.E. While sites are distributed throughout the North, the focal point of Israel's industry was in the hills south of Samaria. These sites show some signs of central planning, both in their scale and organization. These sites are established in the Iron II and remained in use until Israel progressively met its demise between 734 and 722. During the same period in Judah, a few sites give insight into the kingdom's small cottage industry. Sites such as Tel Beit Mirsim and Beth Shemesh introduced multiple presses capable of production beyond mere local consumption. Beth Shemesh, which had 18 presses, was capable of producing over 38,000 liters of olive oil assuming a similar efficiency to the presses at Ekron. With the excavated presses then, Beth Shemesh was capable of 1/6 the production of Ekron. Notably, the olive oil production facilities in Judah are frequently discovered in domestic contexts, lacking the hallmarks of centralized production that was typical of the North. Like its neighbor to the north, Judah's olive oil industry would also come to an end due to Assyrian military campaigns in the land. In 701 B.C.E. the campaigns of Sennacherib dramatically restructured the economy of Judah by devastating its cities in the Shephelah, and by reassigning portions of the land to Philistine administration. At this time, sites such as Tel Beit Mirsim A2 and Beth Shemesh Level 2 were destroyed and the center of olive oil production was moved west to the city of Ekron.

Rather than razing the Philistine city of Ekron, Sennacherib reinstated its ruler, Padi, and left the city as a faithful vassal with its infrastructure and population still intact. Following this event, Ekron developed into the massive city and industrial center of Stratum IC. At this time, the city was organized for efficient production and grew immensely as it became the focal point of the region's olive oil industry. Eventually, as the political circumstances changed in the east, Assyria loosened its grip on the Levant, allowing Egypt to gain control. Egypt undoubtedly benefited from their new patron, Ekron, but from some evidence it appears the production of olive oil actually decreased at this

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108-This assumes similar dimensions in the pressing components between Beth Shemesh and Ekron. At this time, details of Beth Shemesh's oil industry (especially dimensions of the installations) remain unpublished.

109-See Chapter Four.
time (Stratum IB). Ultimately, the onslaught of the Babylonians at the end of the 7th century brought an end to this era of economic productivity in the Levant.

The material evidence for olive oil production indicates a significant transformation of Judah's economy between the 8th and 7th centuries. This time was politically dynamic for the region as Israel, Judah, and their neighbors on the coast and across the Jordan fought for survival in the face of pressure from the Neo-Assyrian Empire. It was in the midst of this major social upheaval that the oil industry was restructured and Ekron emerged as a key economic player on an unprecedented scale. In the following chapter, Ekron's rise will be explained in the context of other known economic changes during the late Iron Age.
CHAPTER FOUR

ECONOMIC CHANGE IN THE POLITICAL REALM:
IRON AGE ESTATE FARMING

*And he built towers in the wilderness and cut out many cisterns, for he had large herds, both in the Shephelah and in the plain, and he had farmers and vinedressers in the hills and in the fertile lands, for he loved the soil.*

—2 CHRONICLES 26:10

INTRODUCTION

The impressive nature of the industry at Ekron is surrounded by questions. Where did political control lie? Was the specialization and intensification of olive oil production a local phenomenon or did it happen by some means of international influence? How does one explain the rise of such an enormous industry at a site that previously had no engagement with the olive oil industry? Despite the prominence of Ekron in the literature on the economic structure of the late Iron Age, relatively little attention has been devoted to situating Ekron's rise to prominence within the larger changing economic sphere of the 7th century. To a certain extent, the prominence of Ekron has moved it to the center of discussion, making it the primary indicator of late Iron Age economic change. This chapter will step back from this "Ekron-centric" view of the 7th century in order to place Ekron's rise in the context of larger structural changes that were taking place in the organization of the agro-pastoral complex in the late Iron Age.

Recent high-resolution studies—those making use of extensive datasets from a large number of sites—have opened the door to reconstructing some of the sweeping economic trends of the late

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1 On Ekron's prominence in the reconstructions of late Iron Age economy, see Chapter Three.
Iron Age. Additionally, developments in the state of understanding of certain elements of material culture such as the stamped handles so prominent in Iron Age Judean sites, have added an additional layer of refinement.\(^3\) When these new results are read together, a more nuanced picture of Judah's regional economic development during the late Iron Age comes into focus.

The present chapter considers new data from other economic sectors in order to contextualize the Ekron phenomenon. I will use newly synthesized data on wine and grain production, as well as herding practices to describe the political and economic climate which gave rise to the olive oil industry at Ekron. As a part of this analysis, Ramat Rahel will be considered for its value as an analog to Ekron as an economic administrative center. At the conclusion of this chapter, it will be clear that Ekron's specialization and intensification in olive oil production can be seen as not only as a normal expression of the socio-economic climate of Iron Age Judah, but as a complementary piece of evidence in the reconstruction of regional economy following the pressures of living under Assyrian domination.

**Shifts in Agro-Pastoral Production Patterns in Historical Context**

This study set out to study the change in the production of olive oil through the Iron Age, and to identify its implications for reconstructing the economy of Iron Judah. This survey demonstrated that following the destruction of the Shephelah in 701, Ekron emerged as the primary manufacturer of olive oil, and did so on an industrial scale. The observed shift in olive oil production at Ekron was not the only major economic change in the region; other sectors of the economy also witnessed transformations of their own. While not easily quantified in the archaeological record, evidence indicates that caravan trade flourished in the 7th and likely enriched Judah's stores through the taxes and tolls collected.\(^3\) On the home front, Judah began to improve on the method of large-scale farming that was introduced in the 8th century. In each of the primary sectors of the agro-pastoral complex—

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grain, wine, and herding—7th century Judah engaged in intensified and specialized production, oriented around the organized exploitation of fertile valleys.

Figure 4.1: The Repha'im Valley and Associated Agricultural and Administrative Sites.

Wine
Beginning in the 8th, and predominantly in the 7th century, the Repha'im Valley emerged as Jerusalem’s wine country.\(^5\) The Repha'im Valley, home to the Naḥal Repha'im, begins west of Jerusalem’s Old City, and runs for approximately 10 km to the southwest where its river merges with the Sorek River. The valley is bordered on the north by the large Lavan Ridge. Prominently seated on its eastern boundary is the palatial site of Ramat Rahel. On its west sits a cluster of sites, the westernmost site a large tumulus called Rogem Gannim (Fig. 4.1). This portion of the valley between Rogem Gannim and Ramat Rahel was a focal point of agricultural activity during the 8th-4th centuries.

\(^4\) Raphael Greenberg, and Gilad Cinamon, “Stamped and Incised Jar Handles From Rogem Gannim and Their Implications for the Political Economy of Jerusalem, Late 8th—Early 4th Centuries BCE.” TA 33 (2006): 229-243; 230, Fig. 1.

B.C.E., as illustrated by the large number of sites identified through high resolution surveys and excavation.

The Repha’im Valley cachement was a geographically and economically defined agricultural zone that specialized in the production of wine. The large, south-facing slopes are composed of thin terra rossa soil that would have been ideal for viticulture, even in the absence of terracing. Surveys and excavation have revealed 35 wine presses distributed amongst five sites in the Repha’im. The presses are cut into the bedrock and consist of a treading floor, settling basin, and vat. At Rogem Gannim, where eight such presses were identified, the treading floors are similar in size, ranging from 3x3 m to 3x4.6 m. In addition to pressing installations, the sites of Rogem Gannim include other rock-cut basins and cisterns associated with wine production and storage. These presses conform to the emerging typology associated with late Iron Age presses based on the finds at Beit Safafa, where four such presses have been securely dated based on ceramic remains. At present, 35 wine presses are confidently dated to the Iron II B.

A unique feature of the Repha’im wine operation is the construction of numerous tumuli on the hills bordering the valley. These tumuli have intrigued scholars since they were first formally recorded by the explorers of the Palestine Exploration Fund in the 19th century. Their later investigations have left scholars pondering the function of the mounds, whether they represent some mortuary practice or, perhaps unsurprisingly, some practice of a cultic nature. While typologically similar in that they are stone mounds, Cinamon has proposed that only some of the Repha’im's tumuli—those with associated industrial agricultural complexes—date to the late Iron Age phase of tumulus construction in the Repha’im Valley. Parting with the creative interpretations of the past, Cinamon has linked the construction of the tumuli to the Repha’im Valley’s wine industry. Viewshed

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10. This is made in contrast to scholars, such as Amiran (1958), who analyzed over 20 cairns as a group. Cinamon identifies the tumuli dating to the late Iron Age as though having industrial complexes on-site. He also acknowledges that some of the mounds possess polygonal enclosures beneath that likely date the to 8th century at the time Judah was preparing for Sennacherib; Greenberg and Cinnamon, “Rogem Gannim,” 102; G. Cinnamon, The Tumuli South-West of Jerusalem and their Significance to the Understanding of Jerusalem’s Countryside in the Iron Age II (M.A. thesis. Tel Aviv University. Tel Aviv (Hebrew)).
analysis demonstrates that the network of tumuli provide optimal coverage of most of the valley. This would have established a physical presence and aided in communication between the sites (Fig. 4.2)."
*lmhk* stamps, four circle stamps, three rosette stamps, two lion stamps, and seven stamps that may read *ywhd/yhd/yh*.14

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<th>Uncertain</th>
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<th>Century B.C.E.</th>
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<td>8</td>
<td>8th-7th</td>
</tr>
<tr>
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<td>2</td>
<td>1</td>
<td>3</td>
<td>7th-6th</td>
</tr>
<tr>
<td>Roaring Lion</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>6th-5th</td>
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<tr>
<td><em>ywhd/yhd/yh</em></td>
<td>7</td>
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<tr>
<td>Total</td>
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<td>3</td>
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**TABLE 4.1: STAMPED HANDLES FROM ROGEM GANNIM**15

Owing to its significant size and its prominent location at the western end of the Repha‘im catchment, Rogem Gannim has been identified as a point for the collection and processing of grapes.16 The presence of stamped handles here suggests a strong administrative presence. While the corpus of stamped handles at Rogem Ganim is relatively small, it corresponds directly with the assemblage of handles found at Ramat Rahel in regard to date and type. As Greenberg and Cinnamon note, the entirety of sites in between Rogem Gannim and Ramat Rahel have produced only one *lmhk* handle and one rosette handle, despite the enormous volumes of Iron Age and Persian Period ceramics.17

Taken together, the evidence from the Repha‘im Valley is a powerful statement regarding the specialization and intensification of wine production beginning in the late Iron Age. Adding to the case for intensification and specialization in industrial viticulture at this time is the wine production center at Gibeon (el-Gib), where 63 cisterns were found hewn into the bedrock.18 Aproximately 2 meters in diameter and 2.2 meters deep, the cisterns are thought to have been used for the secondary storage and aging of wine. Excavators discovered that these underground cellars were capable of

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15After Greenberg and Cinnamon, “Stamped and Incised Handles,” 231, Fig. 2.
16Greenberg and Cinnamon, “Rogem Gannim,”
maintaining a temperature of 65 degrees F, when temperatures above ground in the shade measured 85 degrees. The scale of this industry is impressive, with conservative estimates reconstructing space sufficient to store over 94,000 liters of wine. While Pritchard dated this site to the Iron Age, his analysis was not without its critics who identify Pritchard's Iron II ceramics as Persian; however, the presence of 74 lmlk stamped handles, 41 concentric circle handles, and two additional rosette stamped handles indicate a focal point of administrative activity related to wine production in the late Iron Age. The intensity of the Persian remains, even if overlooked by Pritchard, should come as no surprise given the nearly uninterrupted production of the valley agriculture systems from the 8th century B.C.E., through the Persian period, and into the early Hellenistic period.20

Grain

The Sorek Valley, only 5 km north of Nahal Repha'im, appears to have been its own specialized unit focused on grain production. Excavations at Motza uncovered 36 rock-walled silos dating the 8th century B.C.E.21 Following their construction in the 8th, the silos continued in use into the 7th century.22 The silos are round or oval and, on average, measure 2 meters in diameter, with some examples as large as 2.5 meters. The excavators estimate the total volume of storage at approximately 152 cubic meters.23 The finds at Motza were accompanied by two lmlk stamps, five concentric circle stamps, and two rosettes, suggesting strong use during the Iron II. The presence of such substantial storage capacity at the head of the Sorek has led scholars to view Motza as an important administrative and religious center, where special activities associated with the collection and redistribution of grain took place.24

The idea that the late Iron Age was a time of agricultural intensification in Judah is not new. Stager previously suggested the trend during this time was toward exploiting marginal or fringe zones.

20 Paul Lapp's review of Winery, Defenses, and Soundings is very critical of Pritchard's Iron II ceramic dating; Review of Winery, Defenses, and Soundings at Gibeon in AJA 72 (1968): 391-93. Lapp's critique is one point of Carter's case for a stronger Persian occupation of Gibeon; his view is that Pritchard has overlooked the Persian in favor of the 7th century. Charles E. Carter, The Emergence of Yehud in the Persian Period: A Social and Demographic Study (JSOTSup 294: Sheffield: Sheffield Academic, 1999), 119-22.
21 Gadot, “In the Valley of the Kings,” 51.
23 Zvi Greenhut, Alon De-Groot, and Eldad Barzilay, Salvage Excavations at Tel Mo'za: The Bronze and Iron Age Settlements and Later Occupations (Jerusalem: Israel Antiquities Authority, 2009), 34.
24 Greenhut and De-Groot, Excavations at Tel Mo'za, 220.
His study of the Buq'ah demonstrated the appearance of 7th century farmsteads as well as irrigation systems designed to harness seasonal flooding.\textsuperscript{25} The combination of seasonal rains with the alluvial deposits in the valley opened a new zone of cultivation for Judah in the wake of Sennacherib's devastating campaign in 701. Working from this study, the notion that Judah was forced to turn to new areas of agriculture during the reign of Manasseh has become a part of the archaeological canon for the Iron Age Levant. Consensus understands that during Manasseh's reign, Judah adapted its strategies and began a successful grain industry in the Beersheba Valley.\textsuperscript{26} The surplus grain from the intensive agricultural operation fed not only Judah, was exported abroad to meet the growing demand from Mediterranean markets. In the seventh century marketplace at Ashkelon, excavators found charred grain that has been identified as Judean grain.\textsuperscript{27} This discovery has furthered the notion that Judah functioned as the “breadbasket” of the Mediterranean world.\textsuperscript{28}

**Herding**

Recent diachronic analysis of the faunal assemblages from southern Levantine sites has demonstrated that historical factors play a larger role in the region's consumption patterns than previously thought.\textsuperscript{29} During the 7th century B.C.E., the southern Levant witnessed an increase in the herding of sheep relative to cattle. This phenomenon is widely attested in the faunal assemblages of the Iron IIC (7th century) sites of Judah.\textsuperscript{30} Sapir-Hen et al., suggest that the wide ranging phenomenon may “reflect the impact of imperial domination over the country.”\textsuperscript{31} They suggest that the high degree of specialization


\textsuperscript{30}Sapir-Hen et al., note that the state of research in the north is insufficient for a representative analysis, 735.

and intensification took place as a result of being under Assyria's rule, and most likely a preference for secondary products related to shepherding. As further support for their conclusion, the authors point to the data for the 8th century, which already exhibits a shift toward livestock patterns that generally favor shepherding to keeping cattle.\(^{32}\)

**Summary**

The general atmosphere of the late Iron Age economy outside Jerusalem was one increasingly focused on specialization and intensification. This trend is already visible in the 8th century, but reaches its peak in the 7th century. Outside of Jerusalem, the immediate river valleys were exploited in large-scale, crop-specific operations. In the Repha'im, wine production took place under the watchful eye of a network of large, stone tumuli. Here, grapes were grown along the valley's hills and brought to collection points where they were pressed in standardized presses. Signs of administration abound as in the case of the extensive collection of stamped handles. At the same time, just to the north, the Sorek Valley was focused on grain production, most likely based out of Motza, where stamped handles and a high number of silos speak to activities related to collection and administration. Perhaps included in the same spectrum are the indications of intensification in wine production at Gibeon, and in desert farming as demonstrated in the Buq'ah Valley. During this period, pastoral preferences shift toward prioritizing shepherding, perhaps indicating a renewed emphasis on secondary products such as wool. The activities in the Shephelah and highlands are probably viewed in the same continuum as the development of an estate at Tel Goren near the Dead Sea, where herbs and date palms could be grown, and valuable minerals could be collected.\(^{33}\)

The late Iron Age was a time of widespread intensification and specialization in multiple sectors of the agro-pastoral complex. Sapir-Hen et al. suggest that the political conditions of the Iron IIB—namely, the rule of sophisticated empires—created for the first time the conditions needed to support a specialized economy.\(^{34}\) For Gitin, the time is summarized in the stability and concomitant demand spurred by Assyrian oversight of the region. Both sets of scholars recognize Judah's need to

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\(^{32}\)The pattern is general, but the frequency of cow is high in the Iron IIB, Sapir-Hen et al., “Long Term Animal Economy,” 734. Certain sites, such as Hamid, Lachish, and Motza have cow bones in high quantities, opening the door to the idea that specialized cattle operations also existed.


meet tribute obligations as an impetus for economic growth. Such growth cannot happen without oversight, whether foreign or domestic. For Judah, a number of key sites associated with economic administration emerged in the 8th century. At present, none of these sites is more impressive than the site of Ramat Rahel.

**Ramat-Rahel as an Economic Administrative Center**

On a peak, between Jerusalem and Bethlehem, sits the site of Ramat Rahel. In antiquity, this hill was topped with a large rectangular complex. Often described as a citadel or palace, the large compound is a single, well planned architectural unit, and lacks any accompanying domestic architecture. Ramat Rahel cannot be classified as a city or a settlement. Aharoni excavated the site in 1954, 1956, and finally from 1959-62. Between 2005-10, Tel Aviv University excavated the site under the direction of Oded Lipschits.

**The Monumental Complex**

Ramat Rahel contains the remains of a monumental complex that was constructed in the Iron Age and continued in use through the Persian Period. The architecture features the highest forms of Judean architectural artistry. Volute capitals, elaborate balustrades, and ashlar masonry contribute to the the palace’s reputation as one of the finest examples Iron Age royal architecture in Jerusalem. Recent excavations have also demonstrated that monumental nature of this palace extended to its immediate environs, which were improved through a variety of means.

The palace was established some time in the late 8th or early 7th century. This initial “palace” was built on a square plan of 28.5 meters. The large rectangular courtyards completing the compound were constructed later in the 7th century. The eastern compound, composed of two courtyards, measured 84 x 72 meters. The inner courtyard was 30 x 24 m, while the larger, outer courtyard was 60 x 21 m. Outside of the complex’s walls, an elaborate garden was constructed.

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When the expansion consisting of courtyards was built in the 7th century, the bedrock was leveled and clean soil was imported to the site. The at the same time an elaborate garden was added to the compound. This garden consisted of more imported soils filled into planting beds, as well as plastered pools and rock cut channels that served to distribute water around the gardens. By the Persian Period, the gardens were home to an assortment of native and foreign flora. In the outmost layer of plaster on the pools, samples of fossilized pollen were collected. Archaeological science has provided the identification of native plants such as figs, olives, grapes, willow, poplar, myrtle, and water lily. The more exotic samples included the pollen of citron, cedar of Lebanon, birch, and Persian walnut. This elaborate garden, with its impressive irrigation system supplied by collected rainwater, functioned not only as an economic administrative center, but served to communicate the authority of the state through the conspicuous consumption of resources.

**Signs of Surplus and Administration**

In addition to the impressive architectural remains, Ramat Raḥel also produced an unprecedented number of stamped storage jar handles. With exemplars ranging from the 8th century through the Persian Period, the hallmark of this collection is the presence of a stamps on the jars’ handles. To date, more than 600 stamped handles dating from the 8th century to the Hellenistic period have been found at Ramat Raḥel. These handles include the 8th century *lmk*, 7th century *lmk*, concentric circle stamp (7th century B.C.E.), rosette stamp (7th-6th century B.C.E.), lion-stamp, and yhwd (6th-2nd B.C.E.) and yršlm handles (2nd B.C.E.). Of the 230 some rosette stamped handles, which date to the second half of the 7th century, 48 come from Ramat Raḥel and its immediate environs—nearly 21 percent of the known corpus for this type. The succession of these stamping systems represents the

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42 Ido Koch and Oded Lipschits, “The Rosette Stamped Jar Handle System and the Kingdom of Judah at the End of the
continuity of administrative systems in Judah. Furthermore, the flourit of handles in Jerusalem and Ramat Rahel following 701 suggests the increased importance of these sites relative to Lachish.43

The Estate Farm: An Iron Age Agricultural Institution
From the evidence of Ramat Rahel we can begin to reconstruct an emerging economic institution in the late Iron Age. The exploitation of the Sorek and Repha'im valleys can be understood as a function of the late Iron Age practice of estate farming. The Iron Age estate farm system is characterized by the systematic exploitation of geographically defined zones of cultivation. This exploitation is conducted at the behest of an intervening authority, who consolidates the land and protects it, while overseeing production. This authority was central in collecting surplus, certifying it, and distributing it.

43 Lipschits et al., “Unraveling the Riddles of Ramat Rahel,” 16, especially figures 18a, b.
44 After Lipschits et al., “Unraveling the Riddles of Ramat Rahel,” 11, Fig. 10.
The authority coming from Ramat Raḥel was displayed in multiple ways. First, and perhaps most undeniable, was the massive palatial compound perched on the hilltop overlooking the valleys. The ashlar masonry, carved balustrades and capitals, and elaborate landscaping project a royal power. This level of refinement in conjunction with the ostentatious display of water resources, evokes conspicuous consumption. In the valleys themselves, power was displayed through the network of large tumuli that dominated the ridge tops, providing nearly complete visibility through the valley. In both valleys, the standardization and technological uniformity of the agricultural installations—such as silos, presses, and vats—speaks to the power of the central authority to organize production. Even more, the presence of royal signs and symbols such as those found on the storage jars, or the recently discovered volute capital in the spring at Walejeh (‘Ain Joweizeh), served as a sign to laborers that their efforts were part of a larger royal enterprise.45

At Ramat Raḥel, a palatial compound served as the seat of power, while major agricultural processes such as collection and processing took place at task-specific centers such as Motza or Rogem Gannim, located strategically within their respective valleys. In both cases, valleys shaped natural corridors of exploitation. These valleys formed natural administrative units, while also affording security. This is evidenced in the Sorek and Rephaim Valleys by the uninterrupted settlement and production throughout periods following the late Iron Age, as well as the prominence of Ramat Raḥel in the Persian Period.46 An administrative apparatus in the form of stamped handles begins in the late 8th century at Ramat Raḥel and continues, in some form, through the Persian Period. At the palace of Ramat Raḥel, an unprecedented number of stamped handles were found. At the satellite administrative sites, such as Motza and Rogem Gannim, handles were also discovered, though in notably lesser quantities. These handles indicate these sites played a role in the central collection and processing of raw agricultural materials.

The Iron Age estate farm was a geographically defined zone of cultivation that was systematically exploited under the aegis of a central authority, which oversaw surplus generation, collection, and distribution. This authority broadcasted its authority through a variety of means.


46 Gadot, “In the Valley of the King,” 33-56.
including monumentality and conspicuous consumption. Some level of activity is already visible in the 8th century, but reached its peak in the valleys west of Jerusalem in the final third of the 7th century B.C.E.

Modeling Ekron: A Philistine Economic Administrative Center?
At the heart of the present study is nature of the major structural changes seen in the olive oil industry of the late Iron Age. Of particular interest is the impetus for such a drastic restructuring of the traditional modes of production in favor of industrial olive oil production as witnessed at Tel Miqne-Ekron. However, when placed in the context of the general structural changes seen emanating from Jerusalem in the form of Ramat Rahel and the exploitation of valley agriculture, Ekron conforms nicely to the changing agricultural economic landscape of the 7th century in the southern Levant. In the following section I look more closely at elements of Ekron in order to draw comparison with Ramat Rahel.

Projecting Power: Building 650
At the center of the lower tell, as a part of Ekron's impressive Stratum I-BC, was a large architectural complex known as Palace 650 (Fig. 4.4). Measuring 57 x 38 meters, the large rectangular complex is thought to mirror Neo-Assyrian architectural practices typically used in the construction of palaces. At its western edge sat a long, pillared hallway. This rectangular space (15 x 7.5 m) faced to the east, and was supported by 8 large pillars, the bases of which were found in situ. In the pillared space, an inscription was found that identified the complex as a temple for Ptgyh. The temple's east entrance opened onto a large courtyard which was surrounded by a roofed portico. The southern perimeter of the complex housed storage rooms in the form of a casemate wall. The large courtyard of the palace was entered through a gate and threshold which were incorporated into the southern wall.

In addition to the monumental architecture, the temple was home to a number of remarkable

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47 Stratum I-BC dates to the 7th century and is the same stratum associated with the appearance of olive oil production at Tel Miqne-Ekron.
49 Gitin, Dothan, and Naveh, “A Royal Dedicatory Inscription,” 1-16.
finds indicating the wealth of those overseeing the temple complex. Impressive imports, such as silver and gold earrings, a bronze scepter, numerous ivory objects, a Ptah-patecus amulet, and a 23 cm long Egyptian golden cobra (uraeus) provide insight into the level of wealth.\textsuperscript{50} This wealth, coupled with the many elements of Near Eastern palace design and the availability of storage in the complex and nearby, suggest a strong administrative function of Temple 650 at Ekron.

![Figure 4.4: Temple 650 at Tel Miqne-Ekron.\textsuperscript{51}](image)

\textit{Agricultural Surplus}

The scale of Ekron's industry suggests the intentional production of large volumes of olive oil to be consumed across the Levant and most likely, the Mediterranean. To date, only one scholar has attempted to model the production of this site. David Eitam was the first to characterize Ekron's


\textsuperscript{51}Adapted from Gitin, Dothan, and Naveh, “A Royal Dedicatory Inscription,”\textit{5}, Fig. 3.
production of olive oil as industrial.\textsuperscript{52} In his reconstruction of the industry at Ekron, he estimates the annual production to be approximately 230 metric tons, or approximately 245,000 liters.

Eitam’s reconstruction of the industry at Ekron was based on both experimental data as well as primitive figures for oil yield.\textsuperscript{53} Overall, the reconstruction can be characterized as conservative, with a number of figures intentionally calculated at less than optimum rates. The initial reconstruction for Ekron is largely volume-based. That is, the starting point for calculating the production capacity as well as land and labor requirements, was the volume of the pressing vats, which is on average 68 liters. Following experiments run at the reconstructed presses at the Ekron Museum, Eitam reduced the probable volume per cycle to 30 liters. Since there are various liquid components to olive expression, Eitam accounted for 20 percent liquid, though in certain types of oil the oil content could be as high as 30 percent. Ultimately, he used a standard olive oil extraction efficiency of 15 percent of olive volume.\textsuperscript{54} Finally, the reconstruction accounts for 100 complexes, or 200 individual presses operating in a given season. From this volume, he extrapolates the number of trees necessary at the traditional density of 10 trees per dunam, and determines that the industry at Ekron would have required 3,500 dunams under olives.\textsuperscript{55}

Working within these parameters, Eitam calculated the annual yield of Ekron to be approximately 230 tons or 245,000 liters. In order to accomplish this feat, the presses would be required to operate for 45 days a season, for four cycles a day of 5-6 hours each. Eitam further estimates that the minimum labor force to facilitate production of this magnitude was 2,000 workers. Based on the volume of the standardized storage jars excavated at Ekron, the 245,000 liters of oil produced each season could have been stored in 10,600 vessels. The storage area required for so many vessels is approximately 600 m\textsuperscript{2}, a figure which Eitam indicates would have been no problem in light of the large storage buildings excavated at Ekron.\textsuperscript{56} As outlined in Chapter Three, these figures have been widely adopted in Near Eastern history and archaeology, serving as basic background information in biblical commentaries, but also in larger scholarly treatments of the of Mediterranean


\textsuperscript{54}ibid., 182.

\textsuperscript{55}A dunam is equal to 1,000 square meters, or approximately .25 acre.

\textsuperscript{56}David Eitam, “The Olive Oil Industry at Tel Miqne-Ekron During the Late Iron Age,” 183.
economy. Though Eitam indicated his desire to return to the calculations, to date no revised figures have been published.\footnote{The author is organizing an Undergraduate Research Experience through the Center for Undergraduate Research and the College of Engineering at the University of Kansas to reexamine Eitam's figures and to make the calculations more accessible to a wider audience. With a standardized methodology for quantifying production, we will begin reconstructing the annual yields for different sites engaged in olive oil production. By quantifying the volume of production at particular sites, we hope to better understand the magnitude of intensification in the olive oil industry during the late Iron Age.}

**Discussion: Comparing the Ekron and Ramat Rahel Systems**

The sites of Ramat Rahel and Ekron bear a number of similarities worthy of further exploration. From a geo-political standpoint, Ramat Rahel and Ekron were faced with the threat of the Assyrian Empire and the need to generate surplus in order to meet tribute demands. Each site possesses impressive monumental complexes that display not only signs of wealth, but a high level of organization. In the following section, these sites will be discussed as similar types of administrative centers within the late Iron Age estate farm movement.

*Signs of Authority: Administrative and Architectural Features*

An impressive point of congruence between Ekron and Ramat Rahel is the presence of a monumental complex consisting of doubled walls and courtyards. In both cases, the palaces have been compared to Neo-Assyrian analogs, but to date, not to each other.\footnote{See for example, Loud, "An Architectural Formula for Assyrian Planning," Gitin, Dothan, Naveh, "A Royal Dedicatory Inscription," and Ronny Reich, "On the Assyrian Palace at Ramat Rahel," TA 30 (2003): 124-29.} Neither complex was completely preserved; therefore, at both sites archaeologists have reconstructed wall lines utilizing existing segments as well as a knowledge of cognate architectural traditions from Assyria. While most of these reconstructions are quite logical, some components of both plans are necessarily reconstructed without any evidence for their existence. This is significant because in some cases, the plans of Ramat Rahel and Ekron may have been even more similar than the reconstructions indicate.\footnote{For example, much of the northern side of Ekron 650, including a long portico, is reconstructed. Given the similarities to the overall dimension of the inner courtyard complex at Ramat Rahel, it is very possible that Ekron's north wall was a casemate style wall similar to the casemate plan of Ramat Rahel.}

As a whole, the Ramat Rahel complex is significantly larger if one takes into account its expansive outer (eastern) courtyard. Adding to the calculation of the entire grounds is the amount of cultivated garden space. However, if one compares the inner courtyard of Ramat Rahel to palace 650 at Ekron, the similarities are striking. Even though both plans are partially reconstructed by different
scholars (two different scholars in the case of Ramat Raḥel) they demonstrate remarkable similarities. First, both compounds make use of large courtyards in the eastern part of the architectural plan. At Ramat Rahel the courtyard's northern boundary is a casemate wall with additional rooms building in toward the courtyard. This plan is mirrored at Ekron, where 650's southern wall is casemate, and where the entrance into the complex is flanked by a series of rooms building toward the courtyard.

When these plans are flipped on an X-axis to represent this mirrored effect, further similarities begin to emerge. First, 650's north/south dimensions correspond to the dimensions of the inner wall of the casemate of Ramat Raḥel, effectively delineating a similar functional north/south area. Furthermore, the east/west walls of 650 roughly align with the with Ramat Raḥel casemate. In the case of Ekron though, the off axis plan of the east/west boundaries prevents a perfect match. For Ekron's 650, the eastern boundary is a combination of an outer wall and inner pillared portico. While excavators at Ramat Raḥel have not recreated porticos in the site's design, the site is the source for some of the finest attested Judean monumental architecture in the form of volute capitals. It is quite possible that the quantity of these capitals suggests a similar pillar or portico tradition to that seen at Ekron.

Finally, and seemingly most uniquely, the western part of 650 contained a large pillared space identified as a temple (see above). The corresponding location in Ramat Raḥel's plan was very poorly preserved, but incredibly, both Aharoni and the excavators from Tel Aviv University reconstruct a long rectangular room that is almost identical in dimension and location. The southern boundary of this room is reconstructed by a wall segment recorded by Aharoni. This segment was the southwest corner of the building, and would have abutted the western boundary of the room—a north/south wall that was missing here, but the line was detected by Aharoni approximately 6 meters to the south. The Ramat Raḥel excavators have reconstructed the eastern boundary of this space using the western terminus of the southern courtyard wall. The western terminus of the courtyard wall would mark its intersection with a wall running north/south, which would represent the eastern boundary of the temple space. The sketched wall for the Ramat Raḥel excavators is purely hypothetical—Aharoni omitted a boundary, while Lipschits reconstructs a rectangular room that almost perfectly corresponds to the Ekron 650's temple sanctuary. This does not suggest that Ramat Raḥel possessed a temple, but given the close relationship between the state and the cult, and the presence of public buildings bearing administrative and cultic functions at Motza, the presence of cultic activity at Ramat Raḥel deserves further inquiry.

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60 Oded Lipschits, “The Origin and Date of the Volute Capitals from the Levant,” 203-25.
Figure 4.5: The Superimposition of Ekron 650 and the Palace at Ramat Rahel.\textsuperscript{6} The plan of Ramat Rahel has been flipped on an X-axis and Ekron has been oriented so as to align correlating architecture features. This superimposition demonstrates the similar allocation of space in the monumental complexes at Ekron and Ramat Rahel.

There is a slight divergence in the architectural plans. First, Ramat Rahel had a western citadel. This square shaped building dates to the site's foundation in the 8th century. It was renovated with the addition of the courtyards and gardens in the 7th century, but remained an integral part of the architectural complex throughout its use. The presence of this feature is likely related to the nature of the site as an administrative center. Because it was not in a city, there was no designated domestic space. In all likelihood, the citadel persisted as domestic space for those living and working from Ramat Rahel. Because Ekron was in a city, and a city that had promontory more suitable to elite

\textsuperscript{6}Adapted from Gitin, Dothan, and Naveh, "A Royal Dedicatory Inscription," 5, Fig. 3; and Aharoni, Excavations at Ramat Rahel II: Seasons 1961 and 1962, Fig. 6.
residences, the 650 complex did not need this space. An additional divergence can be seen in the way Gitin reconstructs the courtyard of 650. The extensive use of pillars, while appealing, is not archaeologically supported for the northern side of the compound. Excavators did not discover pillar bases in these lines, so the reconstruction is hypothetical, and done in a way to invoke Assyrian architectural practices. A similar explanation is probably suitable for the largely reconstructed throne room that separates the sanctuary from the courtyard in 650. While this feature is attested in Assyrian palace complexes, no preserved architecture in these zones suggests a long throne room.

Figure 4.6: Ekron 650 and the Palace of Ramat Raḥel. 650's allocation of space is congruent to the space of Ramat Raḥel's inner courtyard (red).

Agricultural Surplus
The enormous scale of the Ekron enterprise indicates an operation oriented toward the production of surplus. While Eitam has offered a reconstructed volume of production estimated at 240,000 liters a year, the unprecedented scale of the industry at Ekron makes comparisons difficult. It is truly unlike any other operation taking place in the Iron Age. However, broadening the search to a wide temporal and geographical context, Ekron's context can be examined in light of the production described for Roman villas dedicated to olive oil production.

The Roman agriculturalist Cato provides one of the few points of comparative data for contextualizing Ekron's production capacity. As reconstructed by K.D. White, Cato's villa was home to
approximately 6,000 trees. These 6,000 trees were serviced by five presses, with pressing beds 4 feet 6 fingers (1.18 m) in diameter (Cato 18.9). This means that each press had a working pressing area of 10,930.34 cm$^2$, and the total pressing area of a Catonian villa was 54,651.7 cm$^2$. For Cato, five presses were sufficient for processing the olives of a large villa, which we have estimated at 200 iugera, or 520 dunams. Each dunam required 105.09 cm$^2$ of processing power (Table 4.2).

<table>
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<td>Land</td>
<td>520-631 Dunams</td>
<td>3,500 Dunams</td>
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<tr>
<td>Presses</td>
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<tr>
<td>Press Area</td>
<td>10,930 cm$^2$</td>
<td>1,600 cm$^2$</td>
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<td>Total Press Area</td>
<td>54,651.7 cm$^2$</td>
<td>320,000 cm$^2$</td>
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<tr>
<td>Press Area per Dunam</td>
<td>105.9-86.6 cm$^2$</td>
<td>91.43 cm$^2$</td>
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<tr>
<td>Labor</td>
<td>65 workers</td>
<td>2,000 workers</td>
</tr>
</tbody>
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Table 4.2: A Comparison of Features of the Catonian Villa and Tel Mique-Ekron (using Cato de. agr.; White, 1970; Eitam, 1996).

The average surface of a press at Ekron was .40 m x .40 m, yielding a functional pressing area of 1600 cm$^2$. If we adopt a uniform total of 200 presses at Ekron, this yields 320,000 cm$^2$ of total processing area. It should be noted that for both the Catonian villa and Ekron it is unlikely that the entirety of the pressing area was utilized. In fact Eitam hypothesizes a basket 30 cm in diameter, which would have left a 5 cm border on each side, but effectively only using less than half of the available space at approximately 706 cm$^2$. Again, since we cannot recreate the buffer used by the ancient producers in their press baskets we can only compare the available pressing surface.

Thus, according to these calculations, the industry at Ekron possessed 5.86 times the production capacity of the Catonian villa. Put another way, Ekron represents nearly six Catonian villas dedicated to oleoculture.\(^{63}\) This scale is meaningful when considering Ekron in light of a regional

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\(^{63}\) As noted, if we follow the reconstructed pressing capacity described for the Catonian villa as it relates to land, the villa required 105.09 cm$^2$ per dunam. If this figure is extrapolated for land use at Ekron, the site would have been capable of processing 3,045 dunams of olive trees. This figure is remarkably close to the proposed figure of 3,500 dunams proposed by Eitam in his original calculations. If we reject White's reconstruction of the Catonian land distribution and place all 240 _iugera_ (62 dunams) under olives, the resulting figure is 86.6 cm$^2$ per dunam. If this factor is applied to the pressing area at Ekron it yields a total of 3,695 dunams under olives. So considering a range of figures from Cato still yields a range of 3,045-3,695 dunams—a range that conforms to Eitam's reconstruction of Ekron.
move toward organized estate farming. If the reconstructions are reliable, Ekron's size and production volume was within the realm of not only what was considered a manageable estate, but also within the realm of one that would maximize profits. 64

Political Situation

Difficult to ignore in a comparison of Ekron and Ramat Raḥel is their place in the ever-changing political world of the Late Iron Age. Ekron and Jerusalem were politically intertwined in the Iron Age. At opposite ends of the Sorek, they were major cultural poles on a primary thoroughfare of fertile river valley. Flow of information, goods, and culture would have been natural. Both had survived the events of 701 and found themselves in the place of having to navigate and maintain the various complexities of a vassal relationship with Assyria. Judah was in the situation of paying off Sennacherib to leave. Ekron on the other hand, had a small rebellion that was put down by Sennacherib, before he placed Padi on the throne. The parity of the political circumstances experienced by the royal city of Judah and by those in Ekron lends a degree of strength to the proposal that their economies adjusted proportionally to accommodate the newly imposed demands on their resources at the hands of Assyria. That is to say, if the trend in Judah was to adapt to Assyrian demands for tribute by implementing intensive production strategies, it is not a stretch to imagine Ekron, surrounded by fertile lands, engaging in similar activities.

Conclusion: Ekron's Intensification in the Context of Regional Agricultural Development

When the olive oil industry at Ekron is considered in the larger context of widespread structural change in the economic organization of Judah following the destruction of 701, its move toward an intensive production of olive oil moves from “unprecedented economic change” to merely another changing piece in a regional economy that was responding to new foreign demands. Just like Jerusalem or Lachish, Ekron was under the yoke of Assyria and obliged to provide tribute. Judah's experience likely centered on the loss of the fertile Shephelah and the need to adapt its strategies to its new geographic and political circumstances. The result was a refinement of a practice that probably started in the 8th—the move toward large scale cultivation of uninhabited peripheries. In the case of Jerusalem and Ramat Raḥel, this meant using the fertile valley floors for grain, and the sloping

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64 A future direction of this work will be to more carefully consider the available archaeological evidence for Roman estate farms dedicated to oil production and the insights they might provide for understanding the system as it was implemented by the elites in the eastern Mediterranean.
southern exposures for grapes. In some cases it meant expanding into arid or semi-arid peripheries where innovations in irrigation allowed extensive cereal cultivation.

Ekron's transformation in the 7th century was not related to the loss of a productive hinterland in the 7th century, but rather the integration of a new hinterland to the east. Following 701, territory was assigned to their control by Sennacherib. In practical terms, this did not mean that Ekron settled in Judahite territory—the material culture clearly attests otherwise! Instead, Ekron became the economic lords over productive Judahite territory containing olive trees. The result was that Ekron became a center for the systematic exploitation of their newly acquired resources. This may explain how Ekron was previously uninvolved in the production of olive oil, but seemingly struck gold in the 7th century. The signs of authority in Ekron are obvious—a large palatial temple complex dating to the 7th century, the presence of storage facilities, and the largest assemblage of standardized agricultural installations in the Levant.

It seems likely that in the 7th century shift, Ekron emerged as an industrial center because of Assyrian tribute obligations and because of the optimal conditions provided by the pax Assyriaca. The growth exhibited by Ekron's intensification and specialization is congruent with the changes in Judah seen in the surplus production of grain and wine. Likewise, the move toward intensified pastoral activity is reflected across political boundaries. Given the parity of Jerusalem and Ekron's political standing, and the need to remain engaged in the Mediterranean economy in order to meet tribute demands, both groups improved on the system of estate farming started in the 8th century. For Judah, this appears to be a continuation of an earlier practice. For Ekron, the phenomenon is visible for the first time, at least as it concerns olives, because Ekron's acquisition of olive growing territories.

I propose that in the 7th century Ekron functioned as a major economic administrative center at the western end of the Sorek. Ekron and its satellite city, Timnah (Tel Batash), oversaw the olive groves of the Sorek that had formerly supplied the industry at Beth Shemesh. This portion of valley between Beth Shemesh and Batash is approximately 5 kilometers, a similar distance between Ramat Rahel and its western peripheral collection center.
Figure 4.6: The Reconstructed Estate Farming System in the 8th Century B.C.E. (Welch)

Figure 4.7: The Reconstructed Estate Farming System in the 7th Century B.C.E. (Welch)
Chapter Five

Reflexes of Economic Change in the Religious Realm

You shall sow, but not reap; you shall tread olives, but not anoint yourselves with oil; you shall tread grapes, but not drink wine.

—Micah 6:15

Micah's superscription attributes its authorship to Micah of Moresheth. The book of Micah purports to date the reigns of the Judean kings Jotham (742–735), Ahaz (735–715), and Hezekiah (715–687) and concerns matters in Jerusalem and Samaria (1:1). This superscription places the book's setting in the second half of the 8th century, and perhaps the earliest part of the 7th when Hezekiah remained on the throne. Historically, the book's contents are concerned with domestic issues—those things happening in Israel and Judah—rather than the neighboring regions. The result of this domestic concern is the absence of oracles against foreign nations that might be correlated with major international events, thus providing an avenue for dating. Instead, scholars are left to glean from the domestic issues a probable setting. Most prominent in the book are the “forthcoming” destructions of Samaria and Judah. Those prophecies against Samaria relate to the fall of Israel in 722, while most of the oracles against Judah can be linked with Sennacherib's campaign in Judah in 701 B.C.E., such as the extensive list of cities listed in the opening lament of Micah (1:8-16). Here the prophet laments the destruction of a set of cities in the Shephelah—all of which experienced the effects of Sennacherib's campaign.1 From this significant component of the book, we can conclude that major portions of the

core of Micah also find their origin in the 7th century. From a preservation standpoint, Micah is a difficult text with numerous text-critical problems. While a portion of the book likely originates in the 8th century, the book appears to have accumulated additions and revisions into the 6th century, when restoration language typical of the post-exilic period is commonly found.

Micah's pointed tone is set by the oracles directed at Israel and Judah. The book reacts against the practices of unjust rulers who use their power without regard for the lower tiers of Judah's social stratification. The book, perhaps more than any other book in the Hebrew prophetic corpus, is concerned with justice; specifically, justice as it relates to economic issues such as land tenure, misuse of power for gain, and dishonest accounting. This tone has been recognized by scholarship, leading some to identify Micah as being situated in a social movement of the 8th century. Hillers has identified this as a type of millennial movement aimed at correcting the deprivation in Judean society. He uses this view as a framework to encompass the disparate parts of Micah's composition history, making room for the addition and accretion of other teachings and oracles associated with the movement. As will be discussed, this theory gains strength when put in the context of other “justice language” similar to that found in other 8th century canonical prophets such as Hosea and Isaiah.

Micah 2:1-4
Micah 2:1-4 is primarily concerned with the issue of personal property and the apparent unjust ways in which elites are obtaining and consolidating these properties. The perpetrators are those who “plan iniquity” and “plot evil on their beds.” Exercising their power over the people, these elites are charged with coveting fields and ultimately seizing the properties along with their structures. At the heart of this injustice are the sins of covetousness and defrauding a man of his rightful inheritance.

The text of Micah 2:1-4 reads:

Mic. 2:1
יהי תשיביהא תפועה ויהי ומשכבוןו באה הבקר ישערך ישי אלד:  

Mic. 2:2
��ימדו שוהרות ונחל נפשו וננשף יבר יבירה נחלו:  

Mic. 2:3
כלל כאמר זוהרה חנות עלMiami השקה ההאנה להרא אתושר לארתיישו משש אזורית艦קר אל חלון  

Mic. 2:4
והוק כעשת יד:  

Mic. 2:4
ביסיס הווה ישא עלים מתלם ומקל לוהה להרה אמר שרוד ו镝גהל חלב עמי יחל איה יומר איה יימש ל יושבב  


4 ibid.
Woe, plotters of wickedness and ones doing evil on their beds; 
They do it at the morning’s light because they have the power in their hand.

They covet fields and seize them, 
and houses and take them away. 
They oppress a fellow and his household, 
a man and his inheritance.

Therefore, thus says the LORD, 
“Behold, [against this family] I am devising evil from which you will not withdraw your necks. 
And you will not walk upright, for it will be a time of disaster.

He [will wail woefully] [and say], 
“We are utterly devastated. 
[He changes the portion of my people. 
O, how he takes away what is mine! To a traitor he apportions our fields!”]

CONSOLIDATION IN CONTEXT
This concern over the unlawful seizure of family lands in Micah is not an isolated concern in the prophet corpus of the Hebrew Bible. Other canonical 8th century prophets also allude to this practice

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1 Many will omit as a later insertion. This common emendation lacks manuscript evidence.
2 This phrase is also identified as late, but again lacks manuscript evidence.
3 Here, I have chosen to maintain the consonantal text of the MT, reading an elative expression, “he will wail the wail of all wails.” This reading preserves assonance that it is pervasive throughout Micah. See also, J. C. de Moor 1982, 163.
4 Reading with Mss and Syriac, ἀποστρέψαι.
5 BHS makes a number of suggestions about proposed readings that largely arise out of ignorance for the historical situation. For the most part, the MT makes sense given the historical situation proposed below. LXX reads σῶκ ήν δ' κατάλληλον αὐτῶν τοῦ ἀποστρέψαιν τόν πως, presumably a kap/nun confusion and to solve the difficulty of לְשׁוֹבֵב. Aquila, who is generally considered very literal (Fernández Marcos, The Septuagint in Context: Introduction to the Greek Version of the Bible (Leiden: Brill, 2000)), works within the confines of the MT. Instead, he translates πῶς αποδοθέσεται μαί τοῖς γείτονι = how it is given away to my neighbors. In this case, Aquila retains the sense of the MT πῶς, ἠν, ἦν, ὡς, “O, how he divides!”, and provides his own solution to לְשׁוֹבֵב by introducing τοῖς γείτονι= my neighbors, as the recipients of the land, a reading that recalls Jer 12:14. Here, two options for Aquila's translation emerge: either Aquila truly understood (or at least accurately surmised) that the lands are going to a neighboring party, or he was working with a manuscript that contained לְשׁוֹבֵב=neighbor. As early as the 5th century B.C.E. in the Elephantine Papyri, the bet, nun, and kaph were very similar in form. By the second century, at the time of the square Hebrew script in the Isaiah scroll, these letters also venture dangerously close to being indistinguishable. With this evidence in mind, the strongest reading is to preserve לְשׁוֹבֵב as the reading, and consequently, the recipient of Judah’s lands. While the more easily justified reading is “my neighbors,” I will demonstrate how the historical context of this text points to “traitor” or “apostate” as an appropriate translation.
by Judah's elites. The recurrence of these concerns in the 8th century, along with the changing
economic conditions outlined in the previous chapter provide a context for reading Micah's judgment
on those combining lands, as well as the consequences of those actions—namely, the distribution of
land to others.

_Biblical Arguments Against Consolidation_

Micah speaks out against those whom covet ( Heb) fields and seize them, along with the houses built
on the properties. From the text, we might gather that people are losing their inheritances to the
hands of a rapacious elite class. Micah is not alone in his distain for the elite, as the prophet Hosea
also compares the princes to those who move the boundary (5:10). This specifically recalls
Deuteronomistic prohibitions against the same action (Deut 19:14; 27:17). In the extended parable of
the vineyard, the prophet Isaiah warns the elites who “add house to house and field to field” until there is
no longer room in the land (Isa 5:8). Scholars have taken these three passages as an indication that 8th
century Judah had a social problem of some degree. While working with limited archaeological data,
Chaney rightly concluded in 1989 that the prophetic critiques of the 8th century centered not just on
the actions of a few wrong-doing capitalists, but on the larger systematic structural changes that were
taking place in the economy of Judah.\(^8\) Working between texts and some material studies, such as the
work of Rainey, Chaney linked the words of the prophets with the emerging picture of political
economy centered on Jerusalem.\(^9\) Building a case for specialization on the activities of Uzziah, Chaney
proposed that the prophets were reacting to this new structure.

For Chaney and later his student, Premnath, the issue at hand was the process of
_latifundialization_—that is, the process by which smaller, personal estates were combined into larger
latifundia, or large estates.\(^10\) Working from corporate globalization theory, Matthew Coomber has
demonstrated the way in which rapidly developing societies marginalize agricultural producers,
ultimately taking control of their estates.\(^11\) For Coomber, Chaney, and Premnath this was the scene of

\(^{8}\)Marvin Chaney, “Bitter Bounty: The Dynamics of Political Economy Critiqued by the Eighth-Century Prophets,” in


\(^{10}\)Devadasan N. Premnath, _Eighth Century Prophets: A Social Analysis_ (St. Louis: Chalice Press, 2003);

\(^{11}\)Matthew J. M. Coomber, _Re-Reading the Prophets Through Corporate Globalization_ (Vol. 4. Biblical Intersections;
the 8th century. While the exact mechanism is uncertain, many have suggested that some version of debt farming was the chief tactic for acquiring family lands for the state. The most common ancient Near Eastern analog for this practice is illustrated in land records from Mari.14

Despite working with limited evidence, Chaney's instincts for the 8th century prophetic concern were accurate. With limited evidence for oil production from Eitam,15 and wine from the lmlk arguments advanced by Rainey,16 and descriptions of agricultural specialization in Chronicles, Chaney arrived at a conclusion that was generally correct. This generally correct conclusion, however, was reached through an unsound methodology. Chaney's uncritical use of Chronicles for the construction of economic history is problematic. While elements of the Chronicler's writing may reflect some degree of historicity, the overall character of the work is both theologized and idealized.17 Especially problematic is the fact that infrastructure and technical improvements seem to represent topics particularly interesting for the Chronicler. Furthermore, Chronicles may exhibit a tendency for anachronism when depicting ancient rulers and their economic accomplishments.18

Chaney relies heavily on the 2 Chr 26 passage as an indication that Uzziah was engaging in agricultural specialization in the 8th century; in fact, he cites it as a key piece of evidence that provides a link between the archaeological evidence for agricultural intensification and the historical

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16 Rainey, “Wine From the Royal Vineyards,” 57-62


circumstances of ancient Judah. While we know that this is the case to some degree based on the evidence from Motza, Beth Shemesh, and the Repha'im Valley discussed in Chapter 4—Chaney was working from the early picture developed by Hopkins—"the book of Chronicles cannot be brought to bear on the discussion. The evidence for centralization and specialization in the 8th century is limited, but the 7th century shows a remarkable degree of intensification. As the forthcoming work of Yuval Gadot demonstrates, the other most dynamic period of "estate farming" outside Jerusalem is the Persian Period. At this time, the sites in Jerusalem's neighboring valleys are still active in agricultural production, and the administrative center of Ramat Raḥel reaches its largest size, producing the highest yield of stamped Yehud handles known to exist. Therefore, it is very probable that the Chronicler's picture of Uzziah's agricultural efforts were cast from a later economic and administrative model as to what constitutes a "good" king that dates to the Persian period. Thus, to base an Iron Age model of estate farming on texts dating to the Persian period is methodologically unsound.

Furthermore, the way in which debt farming has been offered as a suggestion leaves significant room for improvement. Debt farming relies on the use of credit and subsequent foreclosure on lands in order to repossess them. The proposal advanced by Chaney and Premnath rests on the idea that somehow Judah's ruling class convinced the farmers to specialize in the cultivation of specific crops, such as olives or grapes. While lucrative because of the increasing demand for these products, agricultural specialization carries an inherent risk. By specializing, a farmer bypasses any sort of strategy for risk management, meaning that a single bad season is all that is required to upend the operation. It was this "high risk, high reward" idea that Chaney and Premnath advanced as the way by which the elites legally confiscated lands.

I object to this reconstruction on several grounds. Chaney and others appeal to a trend in Iron Age specialization which is primarily drawn from the work of Hopkins. Hopkins assembled his portrait of the late economic age using a variety of 8th and 7th century sources that point to specialization. Among his evidence he includes the oil presses of the Samaria hills, the *lnlk* store jars, the industry at Ekron, the viticulture at Gibeon, and the well-preserved farm at Khirbet er-Ras.

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20 Yuval Gadot, "In the Valley of the King: Jerusalem's Rural Hinterland in the 8th-4th Centuries B.C.E." *TA* 42 (2015): 33-56; especially 48-51 where he discusses the Persian period (forthcoming).

21 See my paper in progress, "He Loved the Dirt: Agricultural Anachronism in the Depiction of Uzziah in 2 Chr 26:10."

22 ibid.

23 Hopkins worked from a lay summary in the form of Edelstein and Gibson. For a more thorough treatment of Er-Ras,
Hopkins is not wrong—the general trend at this time is toward intensification and specialization to some degree; however, the way in which he identifies the trend, and the way in which it was used to draw conclusions about land seizures is unsound. First, the rock cut presses around the Samaria Hills belonged to Israel and no longer engaged in olive oil production after the fall of the Northern Kingdom in 722. Second, Ekron represents a 7th century phenomenon in Philistia—not Judah. Finally, to incorporate the Arad letters of the late 7th century and the intensification from Gibeon that spans the 8th century to the Persian period, makes for very broad brush strokes in this portrait of late Iron Age economy. Hopkins identified features from a minimum of 130 years, in three different kingdoms, and posited a single movement toward intensification.

Ultimately, most of Hopkins’ evidence dates to the 7th century, with the material from the 8th coming from the Northern Kingdom of Israel. While it is easy to critique his work now with better data in hand, Hopkins’ work was ahead of its time. His instincts for the trend of toward intensification were correct, and he cannot be held accountable for the way in which biblical scholars, untrained in archaeology, adopted his work. As scholars without a background in archaeology, Chaney and Premnath painted broad strokes of “the late Iron Age” economy, and imagined a world in which greedy elites could foreclose on family farms to create latifundia, to fill their coffers while sating the hunger and thirst of a booming Mediterranean economy.

**Historical Considerations**

While debt farming is a legitimate ancient mechanism for reclaiming lands, the situation in ancient Judah was undoubtedly more complicated given the dynamic political situation of the 8th and 7th centuries. As debt farming and Latifundialization have been largely considered, I will bypass them in order to redirect the focus to other factors likely involved in the consolidation program.

Often overlooked in the assessment of the Iron Age land consolidation program is the role that the social shifts of the late 8th century must have had on this phenomenon. In the 8th century, and especially toward its end when the threat of Assyrian loomed, there was an increasing tendency for urbanization. In what has become known as Judah’s “hedgehog defense” much of the countryside

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See Eidelstein “A Terraced Farm at Er-Ras.” *Atiqot* 40 (2000): 39-64. For a more recent synthesis and evaluation of this material, dating the site primarily to the period of 7th century intensification, see Yuval Gadot, “The Rural Settlement along Nahal Rephaim from the Middle Bronze Age until the Hellenistic Preperiod: A Fresh Look from Kh. Er Ras,” *New Discoveries in Jerusalem* 17 (2011): 43-61 (Hebrew with English summary); “In the Valley of the King,” 33-56 (Forthcoming).
was abandoned in favor of urban dwelling.\textsuperscript{24} While this phenomenon has been understood as a critical step in the maturation of center of power in Jerusalem, especially as it relates to religious reform,\textsuperscript{25} the movement toward urban dwelling is rarely explored vis-a-vis its implications for Judah's economic situation. It is very probable, that with the move toward urbanization at the end of the 8th, a number of traditional family lands were surrendered to the state or abandoned as the social fabric of Judah underwent a dramatic transformation.

To some degree, the shift at the end of the 8th century must have involved trade-offs for the people of Judah. The people of the rural zones abandoned their traditional way of life—one of agro-pastoral subsistence, with minimal concern for surplus production—for a more urban life. This decision meant trading the kind of autonomy that came with rural life: deciding what crops to grow, when and where, and how to meet the family's needs. Additionally, the move toward an urban setting had implications for the conceptualization of the society's organization in the realm of kinship.\textsuperscript{26} What was gained was the security and protection of the state, but what was lost was a traditional way of life. It is difficult to hypothesize an exact mechanism for the consolidation of farms in the late Iron Age, but surely lands that were abandoned or surrendered as Jerusalem became a focal point of settlement activity at the end of the 8th century, became early targets for acquisition and intensive agricultural activities by Judah's elites.

The practice of consolidating lands then, should be considered in light of the phenomenon identified in Chapter Four of this study. Rather than evil monarchs looking to steal the lands of helpless peasants through risky investments, the consolidation of these lands should be reconsidered through the lens of social and historical circumstances that would have facilitated the establishment of royal zones of cultivation on Jerusalem's periphery by elites in Jerusalem and Ramat Rahel. Part of this phenomenon must have been a response to the need to generate surplus in the face of a labor force that no longer wanted to remain exposed outside of the major urban centers. Without a population dedicated to farming, and thus surplus generation for taxation, the state would have been


\textsuperscript{25}For example, Elizabeth Bloch-Smith, "Assyrians Abet Israelite Cultic Reforms: Sennacherib and the Centralization of the Israelite Cult," in Exploring the Longue Duree: Essays in Honor of Lawrence E. Stager (ed. J. David Schloen; Winona Lake: Eisenbrauns, 2009), 35-44.

\textsuperscript{26}Baruch Halpern, "Jerusalem and the Lineages," 11-107.
required to identify alternate ways to feed the growing urban centers, while simultaneously meeting any other tribute obligations that the agro-pastoral complex could support.

**Consequences of Consolidation**

So great is the injustice committed by the powerful elites that the prophet uses it as justification for the coming punishment which is introduced as a future lament. The people will cry, "We are utterly devastated. He changes the portion of my people. O, how he takes away what is mine! To a traitor he apportions our fields!" (2:4). This inevitable day of calamity cannot be avoided. This song has traditionally been interpreted as a curse related to Judah's eventual exile from the land; that on that day when she is carried away, her land will be divided up as spoil among her enemies. While this interpretation may have found resonance with an exilic community, a more direct historical analog may be found in the loss of the Shephelah to the Philistines at the hands of Assyria in 701 B.C.E.

**Historical Context: Land Appropriation in the Iron Age**

The 701 B.C.E. campaign that devastated the Shephelah is described in 2 Kgs 18:13, 2 Chr 32, and the Annals of Sennacherib. The text of 2 Kgs 18:13 (paralleled in Isa 36) relates that in Hezekiah's 14th year, Sennacherib came up against all the fortified cities of Judah and took them. This extensive loss of cities is listed in the lament found in Micah 1:8-16, in which the names of the conquered cities are used in an extensive word play. The story is treated completely differently by the Chronicler in 2 Chr 32:1, where Sennacherib enters Judah and camps against all its fortified cities to win them for himself, only to fail completely. The loss of cities, siege of Jerusalem, and paying of tribute have all been suppressed. In the end, the story functions as an example of Yahweh's favor because Hezekiah and Judah are delivered, rather than facing a disaster.

Sennacherib gives his own version of Hezekiah's 701 losses in his annals:

> And Hezekiah, the Judean who did not submit to my yoke, 46 cities of his strong cities, fortresses, and small cities which were around them, which were without number, by beaten ramps and bringing battering rams, the assault of infantry, tunnels, breaches, and siege engines I surrounded, I conquered... What I spoiled from the midst of his country, I parceled out and gave to Mitinti King of Ashdod, Padi King of Ekron and Shilbel King of

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28 Hugh G. M. Williamson, 1 and 2 Chronicles (NBC; Grand Rapids: Eerdmans, 1982), 378.
This account of Sennacherib should be read in light of the features common to Assyrian royal propaganda by identifying the minimum the ruler might have done in order to claim the accomplishment recorded.\textsuperscript{39} For the annals of Sennacherib, the implications of a critical reading lie in the extent of the claimed destruction. Archaeology speaks to the fact that this campaign was wide-ranging and its devastation vast.\textsuperscript{39} Following Judah’s abandonment of the countryside in favor of the protection afforded by fortified cities, it is very likely that Sennacherib met relatively little resistance as he moved throughout the Shephelah.\textsuperscript{32} Still, the region bore the brunt of this military campaign, even if it did not fully match the spectacular claims issued by Sennacherib’s annals.\textsuperscript{33}

A key feature of Sennacherib’s claims is that he distributed the conquered Judean lands to Philistine rulers. In his annals, Sennacherib writes, “What I spoiled from the midst of his country, I parceled out and gave to Mitinti, King of Ashdod, Padi, King of Ekron, and Ṣillibel, King of Gaza, and I reduced his country” (Chicago Prism iii:31-39). Following his widespread campaign, Sennacherib distributes the territory of Judah among the Philistine rulers. For the Philistines, this ensured economic benefits in terms of access to their hinterland, but it also developed a strategic buffer zone between Egypt and Assyria.\textsuperscript{34} None of Judah’s historic border sites show immediate reoccupation following the events of 701. There is no evidence of a Philistine population, or, for that matter, even a remnant Judean population which could be governed by the Philistines. The sites seem to be

\textsuperscript{39}Translation mine.

\textsuperscript{39}Baruch Halpern, *David’s Secret Demons: Messiah, Murderer, Traitor, King* (Grand Rapids: Eerdmans, 2001), 126. This principle of minimal interpretation is what Halpern has termed the “Tiglath-Pileser Principle.”


\textsuperscript{31}Halpern, “Jerusalem and the Lineages,” 21.

\textsuperscript{33}See also Bloch-Smith, “Assyrians Abet Israelite Cultic Reforms,” 35-44, who provides a nuanced survey of the archaeology attributed to Sennacherib’s campaign and qualifies the claims of widespread destruction made by Assyrian sources.

\textsuperscript{34}Hayim Tadmor, “Philistia Under Assyrian Rule.” *BA* 29 (1966): 86-102; 97.
Whether populated by squatters or completely uninhabited, by virtue of their conqueror’s assignment, they became Philistine lands in a functional sense.

This assignment of borders is not at all uncommon among the Neo-Assyrian kings. During his reign, Adad-nirari III (810–783) dealt with border allocations of the Syrian city states, the records of which are detailed in various border stelae, such as the one found along the Orontes near Antakya.

“The boundary which Adad-nirari, King of Assyria, and Šamsi-ilu, the field marshal (tartannu), established between Zakur of the land of Hamat and Ataršumki, son of Adramu: the city Nahlsi, with all its fields, gardens, [and] settlements is (the property) of Ataršumki. They divided the Orontes River between them. This is the border. Adad-nirari, king of Assyria, and Šamsi-ilu, the field marshal, have given it free and clear to Ataršumki, son of Adramu, to his sons, and his subsequent grandsons. His city (and) its territories [...] to the border of his land he made firm.” (RIMA A.0.104.2: 4-1)  

The records of Sargon II also show significant involvement in the setting of boundaries. At the end of Year 7 (§18), his annals record that he restored to their former place the cities of Hurrua, Ushnanis, and the fortress of Que which had been held by Mita, king of Muški. In Year 12 (§32), Sargon defeated 14 strong cities on the banks of the Uknû river, at which point he assigned their land to the viceroy of Gambulu, a previously conquered territory. In Year 13 (§40), Sargon restored land in Southern Mesopotamia that had been seized, but the annals go on to include his restoration of borders, freedom, and even the economy.

By the time of Sennacherib’s reign, there is a strong tradition of organizing the land and fixing boundaries (along with other perceived problems). Following the campaigns of 701, much of Judah’s most productive agricultural land—the hills of the Shephelah—became subject to the Philistines. Many of the sites remained abandoned (at least for an initial period). Those cities that did resettle


38 Luckenbill, Historical Records, 16-17.

39 Luckenbill, Historical Records, 21.
failed to engage in their former agricultural industries. The picture painted by Sennacherib's annals and the archaeology of the Shephelah is one of the economic subjugation of Judah's agricultural land.

The Šōbēb: Who is He?

Central to the interpretation of Mic 2:4 is the identification of the šōbēb, who is the recipient of Judah's lands. The identity of this party in the land transactions has puzzled commentators because the šōbēb appears without a prior mention in the book and there are no particular clues that provide insight into his identity. As a result, the literature abounds with suggestions for the šōbēb's identity.

The word šōbēb is unique in Micah and within the corpus of the Hebrew Bible. In this particular instance, it is used in the masculine form; it occurs twice more in the feminine form to depict Israel and Ammon as a disloyal daughters (Jer 31:22; Jer 49:4). Its translation is so difficult in this context that some have deemed the text corrupt. The word is traditionally rendered “apostate” or “traitor”, presuming a derivation from ūwb meaning “return.” Alternately, one might read the word as a Polel meaning “restore” (Ps 23:3), although context here makes this interpretation difficult. Others have preferred to read variations such as šobenu, “our captors” (Ps 137:3; 1 Kgs 8:46-50). Wolff presents an interesting hypothesis in translating šōbēb to describe the manner in which the land is taken—“Oh, how he takes [the land] from me as retribution”—though he notes that this interpretation is uncertain. Some have even suggested emending the text to omit the word completely. Drawing from the example of the feminine application in Jeremiah as well as historical consideration explain below, a translation carrying some notion of disloyalty is preferred. Thus, “traitor” is most suitable translation of šōbēb in Micah 2:4.

In context, the šōbēb is the alleged recipient of Judah's lands, and for some, the translation “apostate” may indicate an historical setting related to Judah's internecine history with the Northern Kingdom of Israel. Because the punishment is a large scale devastation, and the book of Micah

40 Though, based on Job 18:5. Hebrew also contains šabbāb, “to glow, wither”; Arabic, šabbāb, “to set fire, burn, blaze.”


42 Hans Walter Wolff, Micah: A Commentary (Minneapolis: Augsburg, 1990), 70.

43 Hillers, Micah, 32, notes this phenomenon as a possible function of dittography. See, Robinson Theodore Robinson, Die zwölf kleinen Propheten (HAT 14; Tübingen: Mohr, 1964), 134; and Artur Weiser, Das Buch der zwölf Kleinen Propheten I: Die Propheten Josea, Joel, Amos, Ojadja, Jona, Micha (ATD Teilbd. 24; Göttingen: Vandenhoeck & Ruprecht, 1956).

44 Andersen and Freedman, Micah, 286.
corresponds with the time of a growing Neo-Assyrian threat in the Levant, many have also suggested that the šōḇēb should be understood as an Assyrian king. Notably however, commentators regularly fail to identify which Assyrian king might be responsible. Furthermore, after proposing that a Neo-Assyrian king is the one to possess the land, there is little discussion as to how that king might have actually possessed the land in a historical sense; that is, scholars offer no mechanism whereby the Traitor might take the land. To date, the work of commentators has failed to link the curse to a concrete historical setting.

The situation described as a lament over the land of Judah resonates with the historical reconstruction of the events of 701. The lament is “My people’s land is taken. Oh how he takes it. My land is given to a Traitor.” In the Iron Age IIB Judah experienced a number of border fluctuations on its western periphery. Biblical texts mention expansion of influence under the reigns of Uzziah (2 Chr 26:2; 6-8) and Hezekiah (2 Kgs 18:8), but also territorial losses, or at least weakened borders under Ahaz (2 Kgs 16:6; 2 Chr 28:2-4), and losses under Hezekiah at the hands of Sennacherib (2 Kgs 18:13). Of all the “losses” that Judah experiences in the Iron Age, only the 701 event can be described as a true loss of territory. As previously described, at this time Sennacherib claims to have redistributed the Shephelah to the oversight of the Philistine cities of Ashdod, Ekron, and Gaza. Since this is the only time when land is reapportioned, the identity of the šōḇēb should be sought in conjunction with one of the Philistine cities.

Because of geographical considerations a logical candidate emerges for the šōḇēb as a specific party that can be located in time and space. Ashdod and Gaza are too far away to represent an immediate threat to Judah; however, Ekron, sitting just off the western end of the Sorek, was situated to provide direct oversight to Judah’s Shephelah.

What could Ekron, or even its ruler, Padi, do to warrant the term šōḇēb? Padi likely ascended the throne as a result of his allegiance to Sargon, following the Syro-Ephraimite conflict, possibly as late as the 720s. As a pro-Assyrian monarch, Padi was very much under the same circumstances as Judah. When the call for a rebellion against Assyria came from Ashdod around 712, Ekron and Jerusalem abstained from the regional coalition, the eventual result being the destruction of Ashdod.

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45Regarding Chr’s application in historical contexts see Note 17 in this chapter. On the validity of Chronicles’ preservation of historical memory regarding Judah’s “capture” of Gath, see the ongoing work of Eric L. Welch and Jeffrey R. Chadwick, “When Walls Talk: The Archaeological Evidence for Historical Memory in 2 Chr 26 from the City Wall of Tell es-Safi/Gath.”


The status quo in the southern Levant was greatly disrupted with the death of Sargon on the battlefield in 705, which resulted in the ascension of his son, Sennacherib. With the transition between Sargon and Sennacherib a new wave of rebellion began. Judah and its neighbors sought to escape Assyria’s yoke, eventually turning to Egypt for assistance and protection.

Apparently, the situation in Ekron was one of political disunity. While the officials and nobles, and the populace of Ekron sought to resist Assyria, its leader Padi maintained his pro-Assyrian stance and sought to abstain from the resistance coalition. Ironically, Judah—the traditional abstainer from coalitions—was set on rebelling. After what must have resembled a political coup within the city of Ekron, King Padi was put in iron fetters and moved to Jerusalem, where he remained until his liberation by Sennacherib in 701. Jerusalem and Ekron were free to continue their rebellion, a course that would ultimately prove costly for Judah, but only somewhat so for Ekron.

Upon entering the Levant for his campaign, Sennacherib set to punish those responsible for the rebellion. For Judah this meant sieges of the royal cities of Jerusalem and Lachish, as well as the widespread destruction of outlying cities. At Ekron, Sennacherib set out to punish those responsible for the coup and for removing Padi from the throne. After killing off those nobles and officials that rebelled, Sennacherib freed Padi and restored him to the throne, while reinstating the annual tribute obligations the city bore.

This is a fascinating event. Padi, through his personal abstinence from the 701 coalition, manages to fare much better than his neighbors. As one who abstained from rebellion alongside Judah in 711, Padi held firmly to the same policy in the 701 event, even in the face of strong internal and external political pressure that ultimately resulted in a coup. His dedication as an Assyrian vassal cost him his throne, and found him a political prisoner in Jerusalem. As costly as this decision was initially, Padi’s loyalty to Assyria was ultimately rewarded by Sennacherib. He found himself back on his throne with his political opponents removed, and he was the new foreman of a huge tract of economically prosperous land.

Thus, in the search to identify a historical context for the identity of the šōbēb in Micah 2:4, Padi, the restored king of Ekron, emerges as a fitting candidate. From the eyes of Judah, Padi had previously been an ally in the face of dangerous coalitions. Judging from the number of nobles and

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48 Judah habitually abstained from regional coalitions opposing Assyria during the reign of Ahaz (735-715) and his son, Hezekiah (715-687).

49 Frahm, Eckart. Einleitung in die Sanherib-Inschriften (Wien: Institut für Orientalistik der Universität, 1997), 54, ln. 46.

50 Frahm, Einleitung in die Sanherib-Inschriften, 54, ln. 48.
officials that sided with the Judean rebellion of 701, it seems that there was a high level of contact and political alignment between Jerusalem and Ekron. If this is an accurate reconstruction of the political dynamic, then it would come as little surprise for the people of Judah to hold Padi in contempt for his lack of cooperation. Furthermore, to go from an ally of Judah, to the king who emerged unscathed from the ashes of 701—and the beneficiary of conquered Judean lands!—would be tantamount to treason. Therefore, when the people of Judah lament about their changed portion and the distribution of lands to a traitor in Micah 2:4, Padi of Ekron, and the events of 701 emerge as the most likely candidate.

CONCLUSION
The beginning of Micah 2 chastises those responsible for eschewing traditional modes of production in favor of the new style of estate farming in which royal elites seized land, and controlled the production, harvest, and distribution of agricultural products. So heinous is this crime, that it is used as the justification for the dissolution of Judah's western agricultural lands in favor of their economic supervision by the Philistines. The lament issued by the elites of Judah echoes nearly perfectly the sentiments anticipated by one exposed to those consequences described by Sennacherib in his annals. Situating Micah 2 in the context of estate farming and the aftermath of the 701 land reassignment, solidifies the passage as representive authentic Iron Age sentiments, and even helps illuminate a possible solution for the problematic “traitor” which has acquired Judah's lands in Micah 2:4.

The book of Micah presents perhaps the earliest example of the rejection of the estate farm movement. As demonstrated in Chapter Four, this onset of estate farming can be dated the 8th century B.C.E., but intensifies dramatically in the 7th century in the area surrounding Jerusalem. Placing Micah's rejection of estates in the 8th century is the book's use of property seizures as the justification for the redistribution of land at the hand of Sennacherib in 701. If the sentiment began in the 8th, its resonance only increased in the community in the 7th century as Judah felt the burden of its vassalship to Assyria.

The picture of life under the estate farming system is further developed later in the book of Micah. In chapter 6 another curse is levied against the elites of Jerusalem. The excesses of this elite group are so egregious that they have guaranteed the group's destruction. With the sin fully defined in the indictment of 9-12, verse 13 goes on to declare their punishment. The promised consequence is desolation, accompanied by hunger and futility. The punishment in this case correlates to the crime; those who made unjust gains to live in excess will be made desolate and all their efforts be frustrated. They will have food, but remain hungry. They will have enough, but it will not feel like enough.
A key element in the punishment is the futility curse of verse 15: “You will sow, but not reap. You will tread olives, but not anoint yourself with oil. You will press, but not drink wine.” Here, the curse takes the form, “You will X, but not Y.” Specifically, efforts to sow seed will not result in a harvest, work in gathering the olives will not result in the consumption of the oil, and treading grapes will not result in the consumption of wine. At first glance, the curse bears a similarity to the well attested war curses in which Israel’s inhabitants are threatened with the futility of certain long-term actions in the face of war.\(^5\) Most typically, the threat is that someone who builds a house or plants a vineyard will not actually enjoy the fruits of his labor.\(^5\) This surfaces in the “X but not Y” form as, “You will plant a vineyard, but not enjoy its fruit.” An implied version of the curse comes the form of its reversal in which Yahweh or one of his agents exhorts the people to build houses and inhabit them and to plant vineyards, enjoying their wine.\(^5\) This threat surfaces in contexts in which Israel is under the threat of war and exile, and points to a time where she will not inhabit the land. The origins of the threat can most likely then be found in the later Iron Age when Israel and Judah were subject to the threats of the Assyrian empire.\(^5\)

Despite its superficial resemblance to the wartime “X not Y” curse, the curse in Micah 6:15 represents a separate agricultural curse tradition. That the two are different traditions can be seen in the similar set of curses in Deut 28. In 28:30 a version of the wartime curse begins, including among its domain of cursing wives, houses, vineyards, and children. Following the promise of exile (28:36), the text seems to circle back to similar “X not Y” curse language. Whereas the focus of the first round of cursing had to do with the commitment to wives, houses, and vineyards—long term investments—the curse of 28:38-40 is a curse made at the seasonal level.

In Micah 6 the focus of the curse is primarily agricultural in the sense of planting and the failure to harvest or obtain produce. Additionally, the loss is not total—according to the text, the citizens of Israel will sow seed, plant and tend the vines, and press the olives. The curse, however, is that they will not benefit from their labors—what is obtained will not feel sufficient. Micah’s implementation of the curse is explicitly focused on the labor, and is done in a way that precludes an exilic interpretation. In the case of Micah, the people of Judah will sow grain, gather olives, and tread


\(^{5}\) Examples of the curse include Deut 28:30; Amos 5:11; Zeph 1:13; Jer 6:12.

\(^{5}\) For example, Amos 9:14; Jer 29:5, 28; Deut 20:3-6; Isa 62:8-9; 65:20-21; Ezek 28:26; 36:36. Jer 40:10 is likely aware of this tradition and working within the framework of the literary device.

\(^{5}\) Smoak, “Building Houses,” 34-35.

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grapes, but to no effect. It is a unique curse, because the Judeans are agents of agricultural production, yet not the beneficiaries. Their investments and efforts are to no avail. This type of curse is a perfect punishment and corrective measure for the life of surplus and excess gained through illicit means which the prophet chastises earlier in chapter 6. While their previous gains were made without the proper effort, now any efforts made will be fruitless.

Micah’s rejection of land seizure, his use of 701 as punishment, and the promise of futility in agricultural efforts are accurate reflections of Judah’s economic standing as she faced the beginnings of estate farming in the 8th century, and the loss of the Shephelah in the years following 701. In the intensive agricultural operations of the 8th and 7th centuries the laborers were not the beneficiaries of the produce. When Judah became a vassal of Assyria, new demands were placed on her economy as she adapted to meet the tribute obligations. Following the destruction of the Shephelah and the losses of 701, these effects on Judah’s economy must have been multiplied. Therefore, any attempt at increasing the economic profile of the kingdom was, in a sense, short-circuited. The curse in Micah 6:15 is that Judah is a direct participant in the agricultural labor cycle, but not a beneficiary of the agricultural yield; this is an accurate description of the circumstances which Judah faced to a significant effect in the 7th century.
CHAPTER SIX

A SEVENTH CENTURY CASE STUDY: AGRICULTURAL ANGST IN ZEPHANIAH

...And Ekron will be uprooted.

—Zephaniah 2:4

The core of the book of Zephaniah is comprised of a series of oracles against the nations (2:4-15). The first of these oracles is against the Philistines (2:5-7) and is prefaced by a short poem (2:4). Starting at the coast, this introductory poem foretells the abandonment and desolation of the cities of Gaza, Ashkelon, Ashdod, and Ekron. The subsequent oracle looks forward to a day in which Judah will inhabit these Philistine lands and her fortunes will be restored. Zephaniah's oracle against the Philistines and the introductory poem have not been neglected by scholarship; the presence of poetic elements as well as the potential historical implications of action against the Philistines have been cause for numerous studies. Building on these studies, this paper explores the vocabulary, form, and wordplay of Zephaniah 2:4, demonstrating that in light of the political and economic circumstances of the 7th century B.C.E., the poem may preserve an accurate depiction of Judan sentiments toward Philistia, and especially Ekron, the region's leading producer of olive oil.

1This chapter was first published as "The Roots of Anger: An Economic Perspective on Zephaniah's Oracle Against the Philistines," Vetus Testamentum 63,3 (2013): 471-85. Brill allows reproduction of published work in a collection of the author's own work, such as a dissertation. The original Consent to Publish, including Brill's self-archiving provision (point 2), is on file with the Graduate School of the Pennsylvania State University.
The Poetic Introduction to the Oracle Against the Philistines

Zephaniah's oracle against the Philistines begins with a short poem (2:4) in which the prophet levies a verbal assault against the coastal plain, foretelling the doom of the cities of Gaza, Ashkelon, Ashdod, and Ekron. The oracle continues expressing woe (הָוָי) to these coastal residents, to whom Yahweh explicitly promises destruction: “I will destroy you and none will be left” (5). The oracle's final two verses (6-7) look forward to a time of restoration when the lands occupied by the Philistines will be inhabited by Judah.

Although the Hebrew Bible presents a picture of the Philistines as a political adversary in Israel's earlier history, the relationship between these Levantine neighbors likely underwent development in the 8th century as Assyrian involvement in the Southern Levant spurred resistance coalitions that facilitated closer contact and cooperation between the polities. Tensions between Judah and Philistia likely reached a critical juncture when Sennacherib conquered large portions of the Shephelah in 701 BCE and awarded parts of the land to the Philistine cities of Ashdod, Ekron, and Gaza. In the context of these coalitions, counter-alliances, defeats, and land consignments, it is of little surprise that the Philistine cities drew the ire of the later prophets.

The text of the introductory poem in Zeph 2:4 reads:

כִּי חָזַּקְתָהוּ תְהִיה אַשְׁקִלְנוֹ לָפַשְׁמַה אָשַׁדְּדֹד אֶקְרֹן אֶשְׁקֹלֹן צָהֲרֵי

Gaza will be abandoned and Ashkelon will be a desolation;
Ashdod, they will drive her out at noon and Ekron will be uprooted.

In this short poem, the prophet begins with a great deal of specificity, treating each city and its fate individually rather than corporately with a universal Philistine fate. Here the initial curses against

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R. D. Haak, “The Philistines in the Prophetic Texts,” in Hesed ve-Emet: Studies in Honor of Ernest S. Frerich (eds. J. Magness and S. Gitin; SBL: Atlanta, 1998), pp. 37-51; see especially, p. 46. This is not to say that the closer contact was always to the benefit of the neighboring polities. The complex coalition politics of the so-called Syro-Ephraimite Conflict demonstrate how the Philistine cities could cooperate with one Levantine neighbor to inflict damage on another in hopes of bringing about compliance.

Sennacherib’s Annals as recorded on the Chicago Prism read, “What I spoiled from the midst of his country, I parceled out and gave to Mitinti King of Ashdod, Padi King of Ekron and Sulilbel King of Gaza, and I reduced his country” (Chicago Prism iii:18-49).

Perhaps a function of their geographical proximity and regional familiarity, the individual treatment of the Philistine cities is not unique to Zephaniah (Amos 1:8; Zech 9:5-6; Jer 47:5-7); however, the individual treatment in this case, stands in contrast to the treatment of more distant nations. For example, Zephaniah treats Moab and Ammon together without mentioning specific cities; Cush is treated briefly, but in the same way. In the passage dealing with Assyria, Ninevah is
the Philistines progress along the coast, moving from South to North and then inland. The cities are listed in pairs: Gaza and Ashkelon, and Ashdod and Ekron. These four cities were part of the so-called Philistine Pentapolis, which also formerly included the city of Gath. The absence of Gath in Zephaniah’s poem has been cause for speculation amongst commentators. Berlin has proposed that the absence of Gath may be more an issue of poetic style than geo-political reality. Others, such as Ball and Roberts, hypothesized that Gath ceased to exist as a Philistine city by Zephaniah’s time. Fortunately, recent archaeological investigations in Israel offer considerable insight into this former problem. The site of Tell es-Safi (Israel) has been identified as Philistine Gath. Here, excavations have revealed widespread destruction in the last part of the 9th century B.C.E., most likely attributable to Hazael, king of Aram (2 Kgs 12:17, Amos 6:2). Following its destruction, Gath ceased to be inhabited by Philistines; instead, material remains indicate the site was settled by Judeans. The archaeological discoveries of the last decade militate against the idea that the cities were selected as a part of a poetic program; instead, the omission of Gath represents the geopolitical reality of the late Iron Age.

Scholars offer multiple views of the role of verse 4 within the larger framework of Zephaniah. Of primary concern is whether verse 4 should stand as a part of 2:1-3, independently, or as the opening line of the material concerning the Philistines that continues through verse 7. In favor of reading verse 4 with 1-3 is Berlin, who notes that in addition to conforming to the Masoretic division of the material, reading verses 1-4 as a unit eliminates technical problems related to kî in verse 4 and hoy in verse 5, and groups distinct portraits of Philistia into separate units. Ben Zvi on the other hand, reads verse 4

mentioned by name, but by synecdoche is representative of all Assyria.

5 A. Berlin, Zephaniah (The Anchor Bible Vol. 25A; New York, 1994), p. 99. She notes, “The choice of the cities may have been due more to poetic reasons than to geopolitical ones. Four is a symmetrical number that lends itself to poetic parallelism of two matching pairs.”


9 Particularly, Berlin notes that reading 1-4 and 5-7 as separate units allows for kî to function in its logical role, and eliminates the difficulty of reading hoy already a verse into the oracle. Berlin additionally notes that the Philistia of verse 4
as connected to the following verses, noting that use of ƙi need not function as a indicator of 4’s connectedness to 1-3. Between these two positions is that of Sweeney, who sees verse 4 as joined to 2:5-30, but occupying the role as the basis for an exhortation to seek Yahweh; that is, 2:4 is thematically joined to 2:5, but formally independent. In this sense, it functions as a sub-unit or rhetorical hinge in the sequence of 2:1-3, 4, 2:5-3:20, even though its subject matter aligns perfectly with the immediately surrounding material. Independent of its location within a particular sub-unit, verse 4 has been largely recognized as a key verse which lays a foundation for the following oracles against Philistia, Ammon and Moab, Cush, and Assyria.

**Interpretations Based on Form and Style**

Zephaniah 2:4 exhibits features typical of Hebrew poetry, such as alliteration and parallelism. Stylistically, the verse employs alliteration through the close repetition of the sounds of ayin, zayin, shin, qof, and resh. The strongest use of alliteration however, is associated with the cities of Gaza and Ekron. In these cases, the repeated sounds are more indicative of paranomasia, where two words sound nearly identical with the intent of creating a pun on the name of the city. So recognizable is the paranomasia associated with Gaza and Ekron that it has caused scholars to perceive an inconsistency in the stichs about Ashkelon and Ashdod, which lack a paranomasiac fate. Despite the lack of support in the ancient versions, a number of textual variants and emendations have been suggested in order to restore the paranomasia. For example, to solve the problem of the phrase ƙdwd ƙshrym ƙgɾsw, Bacher proposed the verb ṣyṣhw, “they will possess her.” Undoubtedly, a more obvious solution exists in the root ṣdd, “to plunder,” which was proposed in differing forms by both Graetz and Ehrlich.19

Arguing for the strength of the MT, Zalcman proposed that the use of alliteration was secondary to the sequential use of double entendre that characterizes the Philistine cities as women in the face of horrible female fates: abandonment, spinsterhood, divorce, and barrenness.20 Gordis

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18 Ehud Ben Zvi, *A Historical-Critical Study of the Book of Zephaniah* (Berlin, 1991), 150, 298. In fact he draws the opposite conclusion, noting that the rhetorical use of ƙi to begin a clause is well attested within the corpus of the Hebrew Bible. E.g., Ps 47:3; Isa 15:2.


built upon this idea noting that the four stichs of 2:4 represent an “ascending scale of suffering” in the women’s fate.\footnote{R. Gordis, “A Rising Tide of Misery: A Note on Zephaniah II 4,” VT 37.4 (1987), 487-490; 489.} Zalcman’s exploration of double entendres led him to believe that the author favored double entendres over assonance; when confronted with a difficult decision, he chose to use a word that carried his entendres instead of one that carried his assonance. This, he suggested, was reason enough to assume that the MT is correct.\footnote{It should be noted here that the MT represents the lectio difficultior. Furthermore, it seems very unlikely that a scribe would accidentally or intentionally revise such an overt poetic device; Ben Zvi, A Historical Critical Study of Zephaniah, 151-52.}

Sweeney takes up Zalcman’s observations and clarifies why the cities of Philistia would be portrayed as an unfortunate woman—the answer lies in the portrayal of Jerusalem as the “Daughter of Zion” in Zeph 3:14-20.\footnote{Sweeney, Zephaniah, 123.} The intended contrast then is between the ultimately barren Philistine Woman and the Daughter of Zion, who is rejoiced over by her husband, Yahweh.\footnote{This contrast is not out of place in an ancient Near Eastern context where the “unfortunate woman” is a common trope. Within the Hebrew Bible, and especially in the context of prophetic literature, Judah is depicted in a positive light ( Jer 2:2), but also the adulterous wife (Hosea 3:1; Jer 3:6-9, 20; Ezek 16).} It is this contrast that forms a foundation for the depiction of Jerusalem’s restoration at the conclusion of the book. While this reading of the text is possible, it is a reading that is derived from a perceived problem in the text. That is, in response to claims over textual corruption, scholars have imposed on the composition overarching metaphors to explain why the author meant to abandon alliteration. A stronger solution might be found in viewing the alliteration in the last clause as resumptive and intended to close a sort of poetic circle.

**Interpretations Based on Historical Approaches**

While much of the literature devoted to the oracles of Zephaniah is preoccupied with the stylistic issues discussed above, the book also invites historical inquiry. First, the oracles against surrounding nations raise speculation regarding a plausible historical situation for the composition of a text calling for the destruction of the select foreign nations. Here, both polities mentioned and unmentioned are key as scholars attempt to establish a set of circumstances that fit the exact political situation represented in the book. Additionally, the presence of a superscription dating the book to the days of Josiah (640-609 B.C.E.) offers a suggested starting point for discussions of historicity. These historical studies often examine the issues of setting and date of authorship in order to elucidate the book’s intended audience and message. While the consensus position maintains that the book is set in the
days of Josiah as claimed by the superscription, the presence of a superscription does not necessitate a genuine date of composition during Josiah's reign.

The content of the oracles may offer one clue as to their date. Do they represent realistic political circumstances or perhaps, an anachronistic view of the past? In a pair of complementary papers, Robert Haak and Seymour Gitin considered the reliability of the texts of the prophetic books of the Hebrew Bible and archaeology for reconstructing the relationship between Philistia and Judah in the Iron Age.9 With specific regard to the oracles of Zephaniah, Haak sees the geopolitical details as relating to Judah's attempt to gain control of trade routes in Southern Palestine following the withdrawal of the Assyrian empire.20 On the basis of the available archaeological evidence, Gitin concludes that, generally, “archaeology supports the historical connections reflected in the prophets.”21 Elsewhere, Gitin has demonstrated his confidence in this relationship by recalling Zeph 2:4 as evidence for Ekron's late 7th century destruction.22 While some scholars may question Zephaniah's connection to historical reality, the archaeological evidence supports the view of political relationships between Judah and the coast as presented by Zephaniah.

The work of Duane Christensen is perhaps the strongest example of historical exegesis of Zephaniah, as it attempts to date the setting of the book to the time before or during the earlier stages of Josiah's religious reforms (2 Kgs 23). Specifically, Christensen proposes that the oracles against the nations in 2:4-15 set forth the theological basis for Josiah's plan for Judah's expansion whereby he would acquire the surrounding provinces.23 While this approach is an admirable attempt to place the oracle in a specific historical context, we currently lack any evidence that any such program of territorial expansion ever took place.


23Duane L. Christensen, “Zephaniah 2:4-15: A Theological Basis for Josiah's Program of Political Expansion”, CBQ 46 (1984): 669-682; see especially, 678. For an opposing position, see Berlin, Zephaniah, 117-19, who objects on the grounds that there is little evidence for Judean control of territories in the North. Berlin recognizes the plausibility of Christensen's hypothesis, but rightfully points out that oracles against the nations never advocate territorial expansion. She counters Christensen by suggesting that rather than representing a program for territorial expansion, the oracle reflects sentiments of growing nationalism, which need not necessitate territorial gain (120).
Despite the qualifications that must be applied to Christensen's position, his point that the politics of Zephaniah's oracles closely fit those of ca. 628 B.C.E. deserves comment. Even if Josiah did not successfully acquire the neighboring lands mentioned in the oracles, the oracles may indeed present a record of growing confidence in Judah's regional standing which fueled ideas of political expansion into neighboring provinces. Given the territorial losses experienced by Judah in 701 at the hands of Assyria, the presence of these sentiments seems not only justified, but almost expected in the context of renewed strength and stability in Jerusalem.

While scholars like Haak, Gitin, and Christensen identify a strong Iron Age reality depicted in the oracles of Zephaniah, Ben Zvi nuances his position, viewing the book largely as a post-monarchic composition, which drew on pre-existing traditions and assembled them as a product of a monarchic prophet, Zephaniah Ben Cushi. While the absence of oracles against Egypt and Babylon causes him to view the oracles of chapter as a post-monarchic composition, he does acknowledge that 2:4 and 2:5-7 likely represent pre-compositional traditions. Even in light of their pre-compositional existence, Ben Zvi cautions against reading the poetic pieces as an historically reliable source concerning Judean attitudes toward particular cities or the historical events which befell the Philistine cities.

I will argue in the next section, however, that whether read as monarchic, or pre-existing material incorporated in post-monarchic context, the words of the poem in 2:4 do reflect attitudes of Judah toward Philistia during the late 7th century. While Ben Zvi is correct to caution against reading the poetry as an indication of Philistia's historical fate, his rejection of the possibility that this material may reflect authentic historical attitudes is perhaps too strong. I will reject this position and demonstrate that in light of the socio-economic changes of the 7th century, the poem in Zeph 2:4

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²⁴Berlin, 120, uses the term “nationalism.” Without invoking such an anachronistic term, it may be safe to say that Judah's elite recognized the political circumstances shifting in Judah's favor, engendering a new confidence in Jerusalem's ability to restore the state to its former glory as experienced under Hezekiah.


²⁶Ben Zvi, 304-06, contends that the absence of Egypt and Babylon contributes to the authenticity of the prophecy in a post-monarchic context. After all, how could a prophecy that foretold the destruction of Egypt be persuasive if the contemporary readers could still see the empires standing in their day. These omissions then, were an intentional decision made by the author to create the most authentic looking pre-monarchic text possible.

²⁷Ben Zvi, 306-07, links 2:4 to pre-compositional material by its poetic language which seems otherwise undeveloped throughout Zephaniah. 2:5-17, on the other hand, is found to be pre-compositional because of its disparate view of the ideal future of the compositional passage 3:12-14.

²⁸Ben Zvi, Zephaniah, 151.
could very easily preserve a historical memory of attitudes toward Philistia following the events of the late 8th century B.C.E.

Specifically, I am suggesting that the focal point of the introductory poem in 2:4 is the city of Ekron. Critical to this interpretation is the the word יָרָץ, which should be translated as “uproot” and understood as having a much stronger impact beyond the convenience of soundplay with Ekron’s name. In the following section I will demonstrate how the history and archaeology of Ekron elucidate the historical context of this poem and the lexical choices within.

Analysis

Historical Considerations: The Industrial Center of Ekron

In order to more fully understand the impact of Zephaniah’s introductory poem, one must understand Ekron’s historical development and its role in the regional politics of the Iron Age. Philistine Ekron did not always have such a strong regional presence. After being established in the 12th century B.C.E. on top of the previous Late Bronze Age city, Ekron underwent a number of fluctuations in size during the Iron Age.29 As observed by Maeir and Uziel, Ekron’s prominence was closely related to the neighboring city of Gath; therefore, periods of growth for one city are often represented as a time of reduction at the other.30 The impressive architecture of the palace and temple complex, along with the organized city plan of Str. IB-C indicate a high point in Ekron’s history.

In the final decade of the 8th century, Judah rebelled against Assyria. It seems that the people of Ekron were also in support of this decision, even if their leader, Padi, was not. According to the Annals of Sennacherib the officials, nobles, and people of Ekron handed Padi over to Hezekiah, who held him in captivity (Taylor Prism Col II.73ff). Sennacherib then attacked Ekron, punished the offenders, and placed Padi back on the throne. It is in the context of these events that Judah was punished and 46 of her cities were conquered by Sennacherib. As told in his annals, Sennacherib took the conquered lands from Hezekiah and parceled them out to the kings of Ashdod, Ekron, and Gaza.

29 Dothan and Gitin, “Miqne,” 1051-1059.
Following the campaign of Sennacherib in 701, many of the Judean cities previously engaged in olive oil production, such as Beth Shemesh and Beit Mirsim, ceased to exist. Ekron, on the other hand, fared much better. The Assyrian Annals do not indicate that Sennacherib destroyed the city, but rather that he punished the offenders before returning Padi to the throne. It appears then that, in addition to political continuity, Ekron managed to retain much of its infrastructure. In the wake of these events, Ekron would grow into the region's leading olive oil producer, while Judah would struggle, cut off from its most productive territory.

**Lexical Considerations**

Returning to the text, one may begin to see how this historical view of Ekron elucidates the final phrase of Zeph 2:4. The prophet writes that Ekron will be ‘uprooted’ (עקר). The root עָקַר occurs 24 times in the Hebrew Bible, and in many instances functions as an adjective denoting barrenness in women or livestock. When used verbally, the root refers to uprooting objects (Ecc 3:2; Dan 7:8) or the hamstringing of animals (Gen 49.6; Josh 11:6, 9; 2 Sam 8:4; 1 Chr 18:4). While its use in Daniel 7:8 demonstrates the concept of uprooting in the context of apocalyptic imagery, the occurrence in Ecclesiastes 3:2 points to a strong agricultural use of the word. Here, עָקַר is paired opposite of the root נָטַע (to plant), where it is typically translated as ‘uproot’.

Remarkably, the application of עָקַר in Zephaniah 2:4 is unique; nowhere else in the Hebrew Bible is the word used as a judgment against a person or place. This is not to say that the concept of

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33Excavators have noted evidence of a small and short-lived occupation at Beth Shemesh in the 7th century BCE, quite possibly a feeble attempt by former residents to rehabilitate the site. Their efforts made little impact and were certainly not strong enough to revive the village or its former cottage industry devoted to olive oil production. Shlomo Bunomovitz and Zvi Lederman, “The Archaeology of Border Communities: Renewed Excavations At Tel Beth-Shemesh, Part 1: The Iron Age,” *NEA* 72 (2009), 114-142.


35Adding to the strength of the agricultural nature of this word is its nominal form, which is related to the stump or roots of a tree (Dan 4:12, 20, 23, 26).

36The later date of these occurrences translated as ‘uproot’ may raise objections to an Iron Age date for Zephaniah's poem. On the surface, such caution is justified; however, on closer examination this translation of עָקַר may not be so problematic. Within the Hebrew Bible, the only example of uprooting in a concrete agricultural context (independent of exilic overtones), is that found in Eccl 3:2 and perhaps abstractly, the mention in Dan 7. Therefore, we lack any conclusive evidence to state that עָקַר was not a part of the Iron Age lexicon.
uprooting as divine punishment is foreign to the Hebrew Bible. Rather, the idea of punitive uprooting, using the verb נתשׁ, occurs in the covenant renewal at Moab (Deut 29:27 MT) and is subsequently used by Jeremiah 13 times to express judgment. The other occurrences of שׁרה scattered throughout the prophets are consistently used of peoples and places in the context of judgment. Notable for the purposes of this argument is that שׁרה is not employed in concrete agricultural contexts; rather, its use is limited to metaphorical contexts where kingdoms or people are plucked up and placed elsewhere.

The attested verbal occurrences of נתשׁ in the Hebrew Bible leave two options for the translation of Zeph 2:4—Ekron will either be “hamstrung” or “uprooted.” The latter translation fits best with the type of permanent destruction specified for the other Philistine cities, and resonates with Ekron’s prominence in the agricultural economy of the 7th century B.C.E. It seems then that words in Zeph 2:4 have been cleverly chosen for effect. Where one might expect to find נתשׁ, the word typically used as a punishment consisting of uprooting, one instead finds נתשׁ, a pun on Ekron’s name, and the word used to denote the physical plucking up of an object.

Poetic Considerations

The careful lexical choices in 2:4 are indicative of a desire for poetic styling; the repetition of sounds, especially in Gaza and Ekron are unmistakable. However, even Ashkelon benefits from the treatment of alliteration in the phrase “weašqelôn lišmāmā” with the repeated sounds of shin and mem. Apart from word choice, word order plays a significant role in developing the strength and structure of the poem. Here, the issue of word order is not necessarily syntactical in nature, but instead, the intentional sequence of the cities and their coordinating fates with a view to poetic structure. The cities are listed in couplets: Gaza and Ashkelon, and Ashdod and Ekron. This order is significant because it allows for the poem to begin and end using the same poetic device, paranomasia. The significance of the order is compounded by the placement of Ekron in the ultimate position.

I propose that Ekron represents the climactic element of the introductory poem because of the convergence of strong poetic elements such as paranomasia, metaphor, and double entendre in the final line. As the last city mentioned in the poem, Ekron is in a place of focus. It is in this place that the author chooses to resume his strong alliteration, making a play on Ekron’s name. In this context however, the pun is not simple soundplay as in the case of Gaza. Here the lexical choice places the impending doom of Ekron in an agricultural context through the metaphorical punishment of being uprooted. While a common punishment in the corpus of the Hebrew Bible, the uprooting to be
experienced by Ekron carries the force of a double entendre aimed directly at its late Iron Age source of income, the production of olive oil.

**Synthesis**

Given the history and economic development of Ekron in the 8th and 7th centuries B.C.E., the convergence of poetic elements around Ekron at the climax of Zephaniah's poem against the Philistines cannot be accidental. In fact, it might be argued that the entire poem of 2:4 was composed only because of the remarkable poetic potential found the phrase “we'eqrôn téāqēr.” Ultimately, the strength of this pun in the context of the 7th century agricultural-industrial prominence of Ekron is too great to be overlooked.

The poem of Zeph 2:4 relies heavily on associative imagery to strike a rhetorical blow against Ekron. The Philistine city's prominence in the 7th century was largely related to its role as the chief olive oil production facility in the southern Levant. Given the large volume of olives required to supply such a significant operation, it is reasonable to suspect that Ekron was not responsible for the entire crop of olives. Probably a large portion, if not the majority, came from the surrounding Judean hills to the east. 35 Given the extreme length of time it takes to cultivate mature olive trees and their alternating years of yield, drawing on the established olive growing operations to the east ensured a steady supply of produce to the presses at Ekron. Freed from the logistics of harvesting and transporting the olives, Ekron could focus on processing the olives and mobilizing the finished product to local and regional markets. Even if Ekron did not grow all of the fruit processed in its plants, its strategic position between the farmers of the hill country and the ports of the coast was one of great power—a power dependent on the olive. Independent of the scale of her agricultural investment, Ekron's role in the 7th century agricultural economy was such that the use of imagery associated with agricultural destruction in Zeph 2:4 would be apparent to the late Iron Age inhabitants of the region.

The objection may be raised that the uprooting of Ekron would actually be detrimental to Judah's own economic status if they were responsible for supplying the olives to the industrial center. In a short term cost-benefit analysis, this conclusion would likely be true. However, as Zephaniah's oracle against the Philistine territories continues, it becomes clear that the prophet is not talking about a simple destruction of Philistine cities, but a future inhabitation. The language of settling in

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35 Although, given the fertile alluvial soil comprising its environs, Ekron surely had enough olive trees in its immediate vicinity to justify the initial decision to centralize production there.
cities and grazing their lands speaks to a day in which Judah might experience economic restoration through a reversal of the circumstances of Sennacherib's land allocations in 701 B.C.E. In this case Judah is not looking forward to just reclaiming their own lands, but now infiltrating and prospering from Philistine lands.

In a way, the poem of Zeph 2:4 is a perfect introduction to an oracle calling for the reversal of both Judean and Philistine fates. Given the incredible lifespan of the olive tree, the olive orchards which supplied the industry at Ekron in the 7th century were likely the same trees that supplied Judean production centers at Beth Shemesh, Beit Mirsim, or Tell en-Nasbeh during the 8th century. From the perspective of a 7th century Judean farmer, the trees enriching Ekron were the trees that formerly sustained their forefathers. With such perspective, the destruction of Ekron would not eliminate the demand for Judean olives, but present an opportunity to reorient the regional production cycle to its former way—a way that directly contributed to Judah's prosperity.

**Implications**

This chapter has considered Zephaniah's curse against Ekron and suggested that in light of the archaeological data for Ekron's economic development in the late Iron Age, the oracular introduction should be understood as preserving an accurate depiction of Judean sentiments toward Philistia, and specifically Ekron, in the 7th century B.C.E. The implications of such an interpretation are far reaching.

First, with regard to the date of composition of the book of Zephaniah, the current interpretation suggests a 7th century B.C.E. setting for the genesis of some of the book's material. The book's superscription does date the prophecies to the time of Josiah; however, the origin of the materials in the 7th century does not necessitate that the entire book be composed at that time. Ehud Ben Zvi has argued for a post-monarchic date of the book as a whole, but noting that certain sections—including 2:4 and the oracles of 2:5-15—probably date to a monarchical context. The current archaeological and historical understanding of the economic development of the late Iron Age century supports a 7th century date for this part of Zephaniah's oracle.

In addition to the implications for the date of composition, the proposed interpretation imposes exegetical limits with regard to the historicity of specific events. That is, following the proposed interpretation, the fates found in 2:4 are far less likely to be a prophecy *ex eventu*, made after the destruction of the cities by the armies of Babylonia. As a consequence, any historical linkage between the 604 B.C.E. destruction of the Philistine cities and the prophecy of Zephaniah is premature. It is quite possible that the nations targeted by Zephaniah's oracles may have been
carefully selected to reflect a particular geopolitical reality; however, reading Zeph 2:4 as a reflection of the sentiments surrounding the 7th century economic prominence of Ekron means surrendering the traditional use of the prophecy as an indicator of event-history for the particular material concerning the Philistine cities.

Ultimately, the book of Zephaniah is subject to two types of historical analysis: the analysis of the historical setting which the book purports to describe and the analysis of the historical setting of its composition. While the book of Zephaniah has previously been subject to both types of analysis, this case study has called for renewed attention on the historical composition of 2:4 in light of lexical and literary criteria, which seem to point to a composition in the 7th century following Ekron's rise to economic prominence as the region's primary producer of olive oil.

CONCLUSION
As Judah formalized as a state and encountered external pressures in the form of the Assyrian Empire, the demands on her economy increased. From a textual perspective, the phenomenon identified here as estate farming likely began in the 8th century in the face of these demands, and peaked in the 7th century. The prophetic disapproval of this movement is nothing new to biblical scholarship, although some of the ways these conclusions were reached have been demonstrated to be methodologically unsound. Still, it appears that in the 8th century, the people of Judah witnessed an uptick in the rate at which elites were combining smaller properties in order to organize agricultural operations directed by the state. Their prophetic literature reflects this trend. Just as in Micah, Zephaniah's oracle against the Philistines displays an intriguing blend of economic concern with political circumstances. Likely due to its role in the events of 701, Zephaniah directs an oracle against Ekron. Zephaniah takes advantage of the Hebrew language to make a strong play on words that not only makes clever use of the sounds in Ekron, but makes a clear allusion to Ekron's place as the primary center for olive oil production in the Levant in the 7th century. Together these pieces suggest the emergence of some sort of sentiment related to the loss of land and autonomous agricultural production in the 8th and 7th centuries B.C.E.
CHAPTER SEVEN

CONCLUSIONS AND IMPLICATIONS FOR FURTHER RESEARCH

Behold, I am sending to you grain, wine, and oil, and you will be satisfied... The threshing floors will be full of grain; the vats will overflow with wine and oil.

—Joel 2:19, 24

This study began by identifying the need for synthetic approaches to contextualizing biblical material within the growing corpus of material evidence produced by the ongoing excavations in the Near East. Working between archaeology, comparative data from the ancient Mediterranean, and historical texts, this dissertation has defined details pertaining to a key moment in ancient Judah's political, economic, and religious development.

Working from the archaeological remains of olive oil production, this study outlined the basic history of the olive oil industry in the late Iron Age Levant. In the 8th century, the production of olive oil took place throughout Israel and Judah. In Judah proper, the 8th century was marked by large operations at sites such as Beit Mirsim and Beth Shemesh, where each site yielded more than a dozen pressing installations. Following the destruction of 701, however, the operation of the olive oil industry was disrupted in Judah. Sites such as Beit Mirsim and Beth Shemesh were destroyed and never again entered the oil market. Instead, production moved to the city of Ekron, where an unprecedented number of oil presses were constructed along the city's perimeter. This new industrial center and a small satellite, Timnah, were the primary producers of olive oil.

The prominence of Ekron as an industrial center has led scholars to question how its industrialization fits in the larger context of the 7th century economy. Central to these discussions are the role of the Neo-Assyrian Empire. Was Ekron the focus of Assyrian economic interest? Was there favoritism toward Ekron because of its potential for economic gain? Or was Ekron's rise to economic power a result of increased demands for the products in Assyria and abroad? That is, was Ekron's
success realized only because it was essential for survival in the face of increased tribute obligations to the Neo-Assyrian Empire?

This study addressed these questions by situating the Ekron phenomenon in the broader economic context of the 7th century B.C.E. On the whole, the 7th century was a time in which Judah increasingly witnessed the centralization and intensification of specialized agricultural production. On the periphery, Judah expanded and found innovative ways to produce desirable cash crops such as dates and figs, and balm. Immediately outside Jerusalem, the natural river valleys of the Sorek and Repha’im were harnessed for their full agricultural potential. At the head of the Sorek sat Motza, an impressive collection site where 36 silos were discovered; these silos were capable of storing an estimated 152 cubic meters of grain. In the Repha’im, a system of watch towers was constructed to provide overwatch to the expansive valley where grapes were grown in abundance. At this time the site of Rogem Gannim served as the central processing and collection point for Judah’s wine operation as evidenced by 35 wine presses and a large collection of stamped handles. Both the Sorek and the Repha’im operations were a part of a more complex system of estate farming based out of Ramat Rahel.

Ramat Rahel was established in the 8th century as an administrative center south of Jerusalem. The entire complex underwent renovation in the 7th century and again in the Persian period with the addition of massive courtyards, luxurious gardens, and extensive water works. Judah’s move toward estate farming seems to have already started in the 8th century, a likely necessity as she came under Assyrian vassalage. These royal estates reached a peak in their growth in the 7th century as Judah continued to pay tribute to Assyria and participate in the growing Mediterranean economy.

It is in this regional move toward estate farming that the industrial phenomenon at the Philistine city of Ekron finds relevance. During his campaigns in the region in 701, Sennacherib purged Ekron of dissension, removing those political adversaries that had seen to Padi’s imprisonment in Jerusalem. He then installed Padi back on the throne and allocated a portion of Judah’s conquered territory to Ekron. In this moment, Ekron likely gained access to the western portion of the Sorek valley and began a systematic exploitation of the olives that had formerly supplied the industry at Beth Shemesh. In essence, Ekron and probably its satellite Timnah, began to function as a type of economic administrative center on Judah’s western periphery, just as Ramat Rahel had done in the hill country to the east.

This explanation of Ekron’s rise in the economic system of the late Iron Age is appropriate given the number of similarities between Ramat Rahel and Ekron. Both cities were under similar political circumstances with regard to their status as Assyrian vassals. They had an open border, and
the exchange of ideas (and probably much more) was not uncommon. Both sites possessed impressive monumental complexes with large courtyards. Based on epigraphic evidence, Ekron’s complex is reconstructed as the home of a large temple, but the same cannot be said of Ramat Raḥel. What is remarkable however, is the parity in the allocation of space seen in the two architectural plans. The dimensions of the courtyards and their attendant rooms are incredibly similar when superimposed using the same scale. Even the long pillared room associated with the sanctuary at Ekron is hinted at in the reconstructed plans of Ramat Raḥel. These monumental complexes were likely instrumental in projecting the power necessary to oversee production, collection, and distribution of the local agricultural commodities.

The royal estate farm model gains further credibility when placed in the context of later, large-scale agricultural production in the West. Drawing on the prescriptions for olive villas described in Cato’s agricultural treatise, De Agri Cultura, the present work identified a number of common elements between Roman villas and the work as reconstructed at Ekron. Though some of the data is presently inaccessible, this study put forth a reconstruction in which Ekron represented the equivalent of six Roman villas. Although this study represents a preliminary conclusion, it demonstrates the value of comparative Mediterranean data in the descriptions of movements toward large-scale, centrally organized agricultural production. Given the lack of similar textual treatments for Near Eastern agriculture, the classical farming treatises, as well as the number of well preserved Roman villas offer a significant untouched data source for discussing the economy of the Southern Levant in the 7th century.

The movement toward estate farming, and especially the loss of land to Ekron in 701, formed a critical concern amongst late Iron Age prophets. For prophets such as Micah, Hosea, and Isaiah, the seizure of land was an unforgiveable sin. In greed and covetousness, the elites dismantled family properties, adding field to field, in order to organize royal farms. For Micah, this sin was so great that it would serve as the grounds for dispossession of the land. His taunt song refers to a day when Judah would mourn the loss of its land and portion to a traitor (šōbēb). This study suggests that Micah’s cry can be situated in the context of 701 and Sennacherib’s land allocations to the Philistine city states. The traitor was identified as Padi, who had formerly aligned himself with Judean politics, but did not when rebellion was organized in the late 8th century. The way in which Micah addresses the traitor and the loss of land following 701 points to a second concern exhibited by the prophets—the anger toward Ekron for its role in co-opting a significant component of Judah’s traditional economy. This concern was shown to be present in Zephaniah’s oracle against the Philistines, where the text uses
intentional wordplay and cultural knowledge to strike a rhetorical blow against Ekron and her chief industry, olive oil production.

Judah's experience in 701 marked a turning point in her history. For the first time the country experienced a significant material loss. It became harshly apparent that Judah's portion of the land was not immutable, and that she was subject to the loss of both land and livelihood. In Mic 6 and Zeph 2 we traced the residual anger that simmered as Judah was faced with supplying international markets without receiving direct benefits.

The devastation faced by Judah in 701 became the lens through which later experiences would be filtered. The loss of land and livelihood realized in the seventh century through the forfeiture of the Shephelah and the growth of estate farming became foundational in the formulation of the ideas of blessings and curses for living in the land. As a blessing, Deut 7:12-13 assures Israel that obeying the covenant will result in blessings on the fruit of the ground, including grain (דגן), wine (דנש), and oil (זית). In the blessings and curses of Deut 28, Israel's agricultural prosperity surfaces again prominently. While verses 1-15 represent general blessings related to agriculture, the curses become more specific, taking on the form of the agricultural futility curse of Micah 6 in Deut 28:38-40.

38. You will bring much seed to the field but gather little, because the locust shall consume it.
39. You will plant vineyards and dress them, but you will neither drink of the wine nor gather the grapes, because the worm shall eat them.
40. You will have olive [tree]s in all your territory, but you will not anoint with oil, because your olives shall drop off.

In this passage, the people have been exiled from their land, so the futility is not in working without benefit; it is in working, but not even being present in the land to take advantage of the harvest. While the initial clauses of Deut 28:38-40 echo Micah 6:15, the addition of explanatory clauses using כי describe a setting in which crops go to waste or are consumed by the pests the field. An initial impression is that experience of 701 and the loss of land and agricultural autonomy have contributed to the formation of exilic curses. Furthermore, in the Persian period, these curses are systematically reversed in texts such as Joel 2, where Yahweh announces his intent to restore the grain, wine, and oil, and does so in excess. As this research continues, the next direction is to explore the relationship

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1 The book of Joel begins with a broken economy in which “the grain is destroyed, the wine dries up, and the oil languishes” (1:10). Following Yahweh's restoration of the grain, wine, and oil, the threshing floors overflow with grain and
between the agricultural sentiments of the 7th century and their role formation of curses in Exilic literature and restoration language in the literature of the Persian period.

Israel's blessing was the land and its bounty (Deut 8:8). From the moment they took possession of the land, the people of Israel entered into a world in which agricultural enterprises were necessarily spiritual enterprises. As the recipients of the land and its many fruits, Israel entered into a relationship in which their inheritance was their sustenance. For this inheritance to be threatened represented the ultimate curse. While the Exile and Babylonian Captivity are commonly held to be the quintessential expression of this threat, the events of 701 B.C.E. formed an important experiential template through which Judah processed her later experiences. Faced with threats from Assyria, Judah engaged a program of estate farming that gradually dispossessed her people from their lands. When the land was truly lost—even if in a limited capacity—Judah realized the futility of laboring in a system in which agricultural autonomy was lost. This study has demonstrated that the social and economic factors that shaped Judah's experiences and her textual traditions are an important avenue of investigation that stand to advance our understanding of the complex relationships between religion, economy, and political control in the ancient world.

the press vats are overrun with wine and oil (2:24).
### Appendix A: Iron Age II Olive Oil Production Sites

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Quantity</th>
<th>Type</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tel Hazor</td>
<td>1</td>
<td>Israelite LW</td>
<td>Iron II (9th BCE)</td>
</tr>
<tr>
<td>Kh. Rosh Zayit</td>
<td>7</td>
<td>Israelite LW</td>
<td>Iron II (9-8th BCE)</td>
</tr>
<tr>
<td>Shiqmona</td>
<td>5</td>
<td>Israelite LW</td>
<td>Iron II (8th BCE)</td>
</tr>
<tr>
<td>Shechem</td>
<td>1 + 1 Crusher</td>
<td>Israelite LW</td>
<td>Iron II</td>
</tr>
<tr>
<td>Tel ‘Aabdeh</td>
<td>2 + 2 crushing basins</td>
<td>Judean LW</td>
<td>Iron II (9-8th BCE)</td>
</tr>
<tr>
<td>Shiekh Sabakh</td>
<td>2 + 2 crushing basins</td>
<td>Judean LW</td>
<td>Iron II (9-8th BCE)</td>
</tr>
<tr>
<td>Kh. Banat Bar</td>
<td>32 + crushing basins</td>
<td>Judean LW</td>
<td>Iron II (9-8th BCE)</td>
</tr>
<tr>
<td>El Kla’</td>
<td>23 presses + 2 simple presses</td>
<td>Judean LW</td>
<td>Iron II</td>
</tr>
<tr>
<td>El Gib</td>
<td>1 oil press</td>
<td>Storage pits</td>
<td>Iron II</td>
</tr>
<tr>
<td>Kh. Khadas</td>
<td>15 + 3 simple presses + crushing basins</td>
<td>Rock cut Judean oil presses</td>
<td>Iron II (9-8th BCE)</td>
</tr>
<tr>
<td>Tel en Nasbeh</td>
<td>7</td>
<td>Judean LW press + crushing basin</td>
<td>Iron II</td>
</tr>
<tr>
<td>Beth El</td>
<td>2</td>
<td>Judean LW + crushing basin</td>
<td>Iron II</td>
</tr>
<tr>
<td>Tel Beit Mirsim</td>
<td>6 complexes (2 presses + crusher)</td>
<td>Judean oil press</td>
<td>8th BCE</td>
</tr>
<tr>
<td>Tel Beth Shemesh</td>
<td>3 complexes</td>
<td>Judean oil press</td>
<td>8th BCE</td>
</tr>
<tr>
<td>Tel Gezer</td>
<td>2 complexes</td>
<td></td>
<td>Iron II</td>
</tr>
<tr>
<td>Tel Batash</td>
<td>4 complexes</td>
<td></td>
<td>7th BCE</td>
</tr>
<tr>
<td>Tel Miqne-Ekron</td>
<td>117 complexes</td>
<td>Ekron oil press + 1 simple pressing installation</td>
<td>7th BCE</td>
</tr>
<tr>
<td>Hadid</td>
<td>25 Presses</td>
<td>Judean LW</td>
<td>7th BCE</td>
</tr>
<tr>
<td>Site</td>
<td>Features</td>
<td>Period</td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------</td>
<td>--------------------</td>
<td></td>
</tr>
<tr>
<td>Tel Beer Sheba</td>
<td>1 simple press installation</td>
<td>Iron II</td>
<td></td>
</tr>
<tr>
<td>Tell es-Safi</td>
<td>2+</td>
<td>Crushing tub, sunken jar, stone weights, visible installations on the surface.</td>
<td>Iron II (9th BCE)</td>
</tr>
</tbody>
</table>
APPENDIX B: A TRAVELING TECHNICAL TERM? Amurca/ἀμύργη as a Semitic Loanword in Classical Descriptions of Olive Oil Production

Classical sources refer to the watery by-product of the olive oil production process as amurca or ἀμύργη. The Greek word ἀμύργη appears earliest in the writings of the Hippocratic corpus (Aphorisms 7.45), but is used rarely in other extant texts; Latin amurca, on the other hand, is more common in the later literature detailing farming practices and the variety of uses for this agricultural by-product.¹ Amurca is a transliteration of Greek ἀμύργη, possibly mediated through the Etruscan language.² The fact that amurca is a transliteration suggests that the word may be a technical term related to the production of olive oil. Furthermore, ἀμύργη and its traditionally proposed verbal root, ἀμύργω, ‘to pluck’, lack a satisfactory etymology.³ Given these factors, as well as the Near Eastern origins of olive oil production, a Semitic origin for the term is now proposed.⁴

¹ ἀμύργη, ἀμύργη, ἀμύργης appear in Aristotle (de coloribus 796a, ln. 27) and his student Theophrastus (de causis plantarum 6.8.3), as well as in the materia medica of Dioscorides (1.102), where the meaning of the several forms of the word is what it is in Latin, beginning with Cato de agr. 36 & 64.3; see also Varro de re rustica 1.64; Columella 12.9-16, 12.52.12-22; Pliny, HN. 15.3-9.


³ Traditional studies propose that ἀμύργη is derived from ἀμέργω; for example, Hjalmar Frisk, Griechisches Etymologisches Wörterbuch (Heidelberg, 1960), s.v. ἀμέργω (91-2). Henry George Liddell, Robert Scott, and Henry Stuart Jones, A Greek-English Lexicon, 9th edition (1940), with revised Supplement, eds. P. G.W. Glare et al. (Oxford, 1996), s.v. ἀμέργη (85), where ἀμέργω (p. 81) is listed as the probable source of ἀμύργη. Pierre Chantraine, Jean Taillardat, and Alain Blanc, Dictionnaire étymologique de la langue grecque (Paris, 2009), s.v. ἀμέργω (72), identify no certain etymology, but assume an ‘attachment’ with ἀμέργης; Robert Beekes, Etymological Dictionary of Greek (Leiden, 2010), s.v. ἀμέργω, (86-7): assumes ἀμέργης is a derivative of ἀμέργω, thence Latin amurca. Beekes goes on to note the potential relationship between ἀμέργω and Sanskrit marj-, though noting the difficulty in explaining the initial vocalism. He concludes by acknowledging the possibility that ἀμύργη is a technical term borrowed from a substrate language.

⁴ The wood of the olive tree, Olea europaea, is found in Israel as early as 45,000 years before present. Evidence for cultivation occurs in the 4th millennium BCE in Israel and Jordan, and probably spread westward from there. The export of olive oil from the Levant is attested in Old Kingdom Egypt and forward with peaks during the Late Bronze Age and the Iron II Age during the 8th to 6th centuries BCE. Nili Lipschitz, ‘Olive in Ancient Israel in View of Dendroarchaeological Investigations’, in D. Eitam and M. Heltzer (edd.), Olive Oil in Antiquity, Israel and Neighbouring Counties form the Neolithic to the Early Arab Period (Padova, 1996), (7-13); D. Zohary and P. Spigel Roy, ‘Beginnings of Fruit Growing in the Old World',
It is possible that ἔβιλη is borrowed from a Northwest Semitic verbal form derived from the root ḫRYQ. Hebrew חֵרֵק (heriq) ‘to pour out’, a Hiphil form of ḫRYQ, is often used in the context of liquids pouring or flowing out. Within the corpus of the Hebrew Bible the word is used to describe the emptying of rain clouds (Eccl 11:3) and pouring out the contents of a sack (Gen 42:45). In Jeremiah 48:11-12, the word is used in an oracle against Moab, who ‘has rested on his dregs, and has not been poured out (ḥúraq) from vessel to vessel.’ In this metaphor, the prophet draws on a technical process of separating wine from its dregs by transferring liquid between vessels. In Zechariah 4:12, heriq is used to describe olive oil which is seen pouring out during the prophet’s vision. Finally, Canticles 1:3 likely used the a passive causative participle, mûraq, to describes the lover’s name as “oil poured out.”

In Hebrew’s passive causative stem, the Hophal (cf. Hiphil above), the participle takes a preformative mem (/m/). With the addition of the definite article, /ha-/ plus gemination of the following consonant, the passive causative participle of heriq takes the form: hammûrāq = ‘that which is poured out.’ Phoenician also affixes /ha-/ as the definite article, although there is evidence for changes in the article’s pronunciation over time. The article in Punic lacked aspiration and is recorded phonetically as /ḥ-/ in some cases, even though the historical spelling of /h-/ remained predominant. When the aspiration began to weaken cannot yet be determined; however, Punic orthography indicates this change was underway by the end of the fifth century BCE. CIS i 5510 from Carthage (406 BCE) utilizes both versions: h-ʾdm (‘the men,” lines 1, 2), h-rb (“the great,” lines 8, 9, 10), but ʾ-ṃnt (“the stele or presentation,” lines 3, 7). Because Punic epigraphic sources are the first preserved Phoenician texts to represent phonological changes in their orthography, it is impossible to determine if or when the Phoenician definite article underwent change from /h-/ > /ḥ-/ in spoken language. The eventual orthographic representation of this phenomenon in Punic suggests the possibility that as the


5The term ‘Northwest Semitic’ is preferred over the identification of a specific language at our current state of knowledge. While Hebrew and Phoenician are likely candidates for the term’s genesis, the closeness of Northwest Semitic languages makes it difficult to explicate absolutely a historical process of the term’s origin and use within the Levant prior to its arrival in the west.

6Hebrew is not unique in this sense, as verbs formed from ḫRYQ are common throughout the Semitic languages. Akkadian rā́qu (riaqu, réqu) ‘to pour out or empty’, is employed to describe the transfer of liquids poured between jars, and the pouring of metals for the purpose of casting objects. See ‘rā́qu’ in The Chicago Assyrian Dictionary vol 14. R (Chicago, 1999), 176-79; specifically definitions 1, 5 and 9, and references therein. Compare also, Arabic rā́qa (ryq) ‘to flow out, pour forth’, Hans Wehr, A Dictionary of Modern Written Arabic, J. Milton Cowan (ed.), (Ithaca, 1961), 371.

7The text of Canticles 1:3 is textually corrupt, requiring some degree of text critical work. Reading with the LXX, which replaces the Masoretic שֵׁם תֹּרָק with ἔλαιον ἐκχέομενον, one can reconstruct the Hebrew reading, שֵׁם מָרָק.

term hammûrāq was carried westward, the initial aspiration of the definite article was weak enough that it came into Greek lacking the /h/, hence ἀμόργη. Thus, the word ἀμόργη and its Latin transliteration amurca, the by-product of the olive oil production process, may be understood as a transliteration of a Northwest Semitic term describing ‘that which is poured out.’

hammûrāq > (h)ammûrāq > ἀμόργη > *amurca (Etr.) > amurca.

While this etymology offers a plausible and satisfactory explanation for the origin of the amurca/ἀμόργη, the presence of the Greek verbal form ὀμέργω, meaning ‘to pluck or pick,’ complicates matters. The earliest attestation of the verb ὀμέργω is in Sappho fragment Bergk 121, where a feminine present participle describes the act of plucking flowers;11 later it is applied to picking fruit (E.HF397; A.R.1.822). At the same time, the word is also used on occasion in the context of squeezing the juice out of olives (Com. Adesp.437, according to Eust.318.11). While ὀμέργω and ἀμόργη appear to be cognates, the semantic gap between the predominant verbal usage (to pick) and the nominal meaning (a by-product of pressing) is too wide to ignore. Since ὀμέργω is attested earlier, it seems unlikely that the borrowed noun ἀμόργη is the source of the verb ὀμέργω.

In light of the proposed Semitic origin of ἀμόργη, one should consider the possibility that ἀμόργη is not a derivative of ὀμέργω as is commonly suggested, but that the two words are false cognates. Similar in form to ὀμέργω is Greek ὀμόργάζω (ὀμόργανμι), which means ‘to wipe’ and is traditionally associated with Sanskrit mrjáti (marj-), ‘wipe.’12 The semantic range of marj- extends the concept of rubbing or wiping to include actions such as removal, smoothing, and erasure. The Semitic languages also show a similar root and concept in √MRQ. For example, Hebrew יָרֵמ means to polish, rub out, or clean demonstrating continuity in the semantic range. With this in mind, it is possible that ὀμέργω is derived from the same PIE root as ὀμόργάζω (ὀμόργανμι), but occupies a different semantic range, hence its application for plucking or removing flowers in Sappho 121.

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1 At the present state of research the form hammûrāq, the Hophal participle and definite article, is unattested in the extant Northwest Semitic texts. As mentioned, the root γράζω is attested in a Hophal perfect verb in the Hebrew Bible and likely existed in Canticles 13 prior to textual corruption. So while the existence of the exact proposed form is hypothetical, there is sufficient evidence to suggest that hammûrāq would have been employed in the proper context. Unfortunately, the paucity of Northwest Semitic texts relating to technical matters such as olive oil production means we lack the type of context in which hammûrāq might have regularly occurred.


12 Liddell, Scott, and Jones, A Greek-English Lexicon, s.v. ὀμόργανμι, suggest a relationship between ὀμόργανμι and Sanskrit ‘wipe.’ Beekes, Etymological Dictionary of Greek, s.v. ὀμέργω, 87, entertains the idea that ὀμέργω is related to Sanskrit marj- and points readers to the verb ὀμόργανμι.
If this etymology is sound, then ἀμόργη and ἀμέργῳ are false cognates—one word imported from the Near East, the /m/ a carry-over from a Semitic preformative, and the other probably derived from a PIE root in which /m/ is an original consonant.  

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APPENDIX C: TYPOLOGICAL DISCUSSION OF VESSEL USE IN OLIVE OIL PRODUCTION

TYPOLOGICAL CONSIDERATIONS

Bowls: Gitin indicates the majority of the bowls at Miqne are of a coastal type. The first bowl common to the two assemblages is a small to medium sized slightly rounded bowl, with a straight or slightly incurved rim. Under the rim is a small distinctive groove. At Batash 96 percent of the examples are unslipped. At Batash this type (BL 37) occurs 10 times in the press building 950; it is paralleled at Miqne. Also common in Building 950 is a rounded bowl with folded rim (Batash type BL 13). The final bowl common to the two assemblages is a small to medium sized deeply rounded bowl.

Kraters: The predominant krater in the oil assemblage at Batash is a deep, closed krater with hammerhead rim. This is paralleled and common in the assemblage at Miqne. The popularity of this form in the Batash and Miqne assemblages led Mazar to suspect the vessel form may have provided some functional need in the olive oil production process. If this is the case, he notes the interesting fact that this type already constitutes 25 percent of the kraters in Stratum II (8th century B.C.E.).

Cooking Pots: The first cooking pot common to the assemblages is characterized by the sharp pinched ridge that protrudes below the rim. The body is bag shaped with two loop handles extending from the rim to the body below the neck. The deep, everted rim cooking pot is also common to both sites. It

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13 Gitin, “A Type Site for the Inner Coastal Plain,” 37.
14 Amihai Mazar and Nava Panitz-Cohen, Timna (Tel Batash) II: The Finds from the First Millennium. 2 vols. Qedem 42. Institute of Archaeology, Hebrew University of Jerusalem, 2001), 35.
15 Gitin, “A Type Site for the Inner Coastal Plain,” Fig. 2.137.
16 Gitin, “A Type Site for the Inner Coastal Plain,” Fig. 2.121.
17 Mazar and Panitz-Cohen, Timna, Pl. 41:8-21; Gitin, A Type Site for the Inner Coastal Plain,” Fig. 2.139.
18 Mazar and Panitz-Cohen, Timna, Pl. 42:3-8
19 Gitin, “A Type Site for the Inner Coastal Plain,” Fig. 2.13:15; 34, Photo 2.8.
21 Mazar and Panitz-Cohen, Timna, Pl. 43:2-7; Gitin, “A Type Site for the Inner Coastal Plain,” Fig. 2.13:13; Gitin, “Ekron
has a globular body with rounded base and two loop handles from rim to shoulder. This form can vary significantly in form from 1.6 lt. to 5.8 lt. It is paralleled at Miqne.

Although the type is the second most popular cooking pot at Batash, only one example of a typical 7th century Judean cooking pot was found in Building 950. This uniquely Judean pot emphasizes Batash's connection to Judah in the 7th century.

Storage Jars: Three storage jars dominate the assemblages of Batash and Miqne; however, only one is very common between the groups. Of the 43 storage jars excavated at Miqne, 29 were of the coastal ovoid shape. Of the 43 in Building 950, 13 were of the coastal ovoid storage jar. This jar is bag-shaped with the vertical tangent occurring below the midline with a narrowing, rounded bottom. Two loop handles extend from the carination that defines the upper portion of the jar. At Batash the neck varies in thickness and length generating four subtypes in the typology.

The second form common to the assemblages is the lmlk-type jar. Even though only one example was found in room 14 at Miqne, 7 jars are attributed to Building 950. The lmlk jar has a wide, gently sloped shoulder topped with an inverted neck; its profile is completed by a narrowing body, and narrow round base. The jar has 4 distinctive ridged handles attached just below the shoulder. It draws its name from the distinct stamps reading lmlk in conjunction with one of four toponyms. The fabric of this vessel is a distinctive red-brown clay with slight inclusions, fired to a metallic state. The form is an inland Judean form.

Unique to Batash, the third storage jar in the assemblage is the rosette stamped jar. Three jars of this type were found in Building 950. The jar is similar to the lmlk jar, but with more narrow proportions. The jars draw their name from their handles that are sometimes stamped with rosettes. The jar is distinctly Judean and its appearance at Tel Batash is the westernmost appearance of the ware. It is strictly a 7th century vessel.

in the 7th Century B.C.E.,” 58, Fig. 4.93-2.

22 Mazar and Panitz-Cohen, Timna, 87.
23 Gitin, “A Type Site for the Inner Coastal Plain,” Fig. 2.13:12.
24 Mazar and Panitz-Cohen, Timna, Pl. 45-5.
25 ibid., 85-86.
26 Gitin, “A Type Site for the Inner Coastal Plain,” 37.
27 Mazar and Panitz-Cohen, Timna, 92-97.
28 ibid., 97-101.
29 ibid., 95.
Jugs: Very few jugs were found in the press complex at Miqne; only one decanter was published.\(^3\) Conversely, 13 jugs were found at Batash in Building 950. No typological correspondence or function can be established for this form.

Juglets: Two types of juglet are common to Batash and Miqne. The first is a juglet with a short body and round mouth.\(^3\) The second type is a juglet with an elongated cylindrical body.\(^3\) Mazar concludes this type of juglet may have played a role in the production of oil, but notes the vessels were found in both domestic and industrial contexts.\(^3\)

Bottles: Both Batash and Miqne yielded Assyrian style bottles in their pressing complexes. The first type is an elongated bottle with wide neck and tapering base.\(^3\) The second type of bottle is what is often referred to as the “Carrot bottle.” This vessel is tall with a narrow neck, gentle shoulder, and long body drawn to a point; its profile is that of a carrot.\(^3\) These vessels are imitations of Assyrian wares made from local clays.

Vessel Function in the Manufacture of Olive Oil

Bowls are a dominant form in the assemblages associated with the pressing installations at Miqne and Batash. Since food preparation seems to have taken place in both pressing complexes, we might assume that a portion of the bowls were employed for eating and drinking in accordance with their standard domestic uses. With a view to oil processing, the high number of bowls in the processing room of Miqne (in comparison to the other rooms) reveals that the bowls may have been used in the manufacture of olive oil. First, the bowls were likely used was in the skimming process. Some suggest that following the crushing by a stone roller in the basin, hot water was poured over the

\(^{3\text{0}}}\) Gitin, "A Type Site for the Inner Coastal Plain," Fig. 2.12:17.

\(^{3\text{1}}}\) Mazar and Panitz-Cohen, Timna, Pl. 50:1-5; Gitin, "A Type Site for the Inner Coastal Plain," Fig. 2.12:1; Gitin, "Ekron in the 7th Century B.C.E.," Figs. 4.5:7; 4.5:5.

\(^{3\text{2}}}\) Mazar and Panitz-Cohen, Timna, Pl. 50:6-8; Gitin, “Ekron in the 7th Century B.C.E.,” Fig. 4.9:6.

\(^{3\text{3}}}\) Mazar and Panitz-Cohen, Timna, 127.

\(^{3\text{4}}}\) Mazar and Panitz-Cohen, Timna, Pl.49:8-9; Gitin, “Ekron in the 7th Century B.C.E.,” Fig.4.5:17.

\(^{3\text{5}}}\) Mazar and Panitz-Cohen, Timna, Pl. 49:10; Gitin, “Ekron in the 7th Century B.C.E.,” Fig. 4.5:13.
olives to release the first amount of oil; Stager has suggested this as the šmn rḥš from the Samaria Ostraca.\(^{36}\) After the water freed the oils, a period of settling allowed the oil to separate from the water and be skimmed from the top. This same act of skimming likely occurred to separate the oil from the waste liquid, amurca, after the pressing of the olive mash. Bowls might have also been used to scoop the crushed olive mash from the basin into the baskets for pressing.

Kraters and cooking pots were found in the middle room (Room 14) and absent from the press room (Room 15) at Ekron. Similar to the bowls, these could be used in the traditional domestic capacities in food preparation. If they served a purpose in the manufacture of olive oil, they might be employed in the boiling and transfer of water for šmn rḥš. If the olive oil workers at Ekron also focused on the manufacture of flavored or infused oils, the cooking pots and kraters perhaps served in the various stages of that preparing and steeping the herbs in the oil.

Some kraters and storage jars were modified for special use in the separation process. At Miqne and Batash jars or kraters with holes were discovered in the context of oil production.\(^ {37}\) It is hypothesized that these jars’ holes could be plugged while the oil settled and then later unplugged to separate the water.

The majority of jars were probably used for storage. Mazar has estimated an average volume of 30 liters, with a total approximate volume of 1140 liters. At Batash three primary types of storage jars were found: lmlk, rosette stamped, and coastal ovoid. Mazar has concluded that the coastal ovoid jar (his SJ7) was likely the main container for storing and shipping oil because of its compact size and commonality at Miqne and Batash.\(^ {38}\) The volume of the Judean types at Batash also seems to indicate a primary storage vessel.

Jugs and Juglets possibly served their standard domestic functions for those working in the press-house. At Ekron, six juglets were found in the pressroom and 22 in the middle room. The juglets were likely used to transfer oil during the separation phase or the portioning phase. In some cases, the juglets may have been designated for high quality oil, such as šmn rḥš.\(^ {39}\)

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\(^{37}\) Mazar and Panitz-Cohen, *Timna*, Pl. 47.15; Gitin, “Ekron in the 7th Century B.C.E.,” Fig. 4.6:2-3.


\(^{39}\) This application would correspond to the type of storage implied by Roger Nam; “Power Structures in the Samaria Ostraca.” *Palestine Exploration Quarterly* 144 (2012): 155-63.


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