THE CANNED AND THE FRESH:
THE MAKING AND REMAKING OF AMERICAN FOOD CULTURE

A Dissertation in
History
By
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ABSTRACT

This study examines the development of tomato culture in America from roughly 1800 to the present. By taking a longer view of the study of American food and by engaging with a wealth of sources, including cookbooks, restaurant menus, seed catalogs, agricultural periodicals and censuses, this project studies the development of tomato culture both before industrialization and through two distinct phases of industrialization within the tomato industry. Beginning with nineteenth century rural farmers and cooks, tomatoes emerged as a vital component of expanding the diversity of American cuisine, overcoming early resistance to this Central American vegetable. This expansive tomato culture continued in the late nineteenth and early twentieth centuries as the canning industry and tomato production increased and influenced the emergence of a distinct geographically decentralized and economically diverse industry that overcame the seasonality of tomato consumption. The uses for tomatoes continued to expand as middle-class, elite, and immigrant consumers utilized increased production of fresh and minimally-processed canned whole tomatoes to diversify their diets. By the second half of the twentieth century, as technological innovations like the mechanical harvester led to consolidation and centralization of tomato production and processing, and the rise of prepared, heavily-processed, ready-to-eat meals discouraged culinary curiosity, tomato production and consumption became more standardized and homogenized. Yet, the tomato has also become a symbol for important counters to the dominance of this corporate culture, including farmers’ markets and home gardening. This project seeks to highlight how the two phases of tomato industrialization differed from other foods. Contrary to the existing scholarship, this project suggests that industrialization often helped foster increased diversity in American food production and culinary culture but also points to the limits of the corporate model on shaping and standardizing American cuisine. Despite the growing power of centralized producers and processors of food to shape eating habits, tomato culture in America remains diverse and consumers utilize numerous avenues to challenge and influence commercial culture.
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<table>
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<th>Abbreviation</th>
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<tr>
<td>HAGL</td>
<td>Hagley Museum and Library (Wilmington, DE)</td>
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<tr>
<td>STCC</td>
<td>Henry G. Gilbert Nursery and Seed Trade Catalog Collection, Manuscript Collection 120, United States National Agriculture Library (Beltsville, MD)</td>
</tr>
<tr>
<td>UDEL</td>
<td>University of Delaware, Special Collections Library (Wilmington, DE)</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>USDA BAE</td>
<td>United States Department of Agriculture, Bureau of Agricultural Economics</td>
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In memory of my friend, Abigail Mattson (1983-2014),

And for Brennyn, whose boundless energy and love inspires me to work harder, and live more.
Introduction

The tomato, as a part of modern food culture, took a circuitous path to the United States. From its origins in the Andes in South America, it was first cultivated in southern Mexico and was introduced to Europe during the sixteenth century by Spanish explorers. By the end of the sixteenth century, the tomato had made its way to other European countries, including Italy, France, and England. Not until the eighteenth century did the tomato have a widespread introduction into the United States, but by the early nineteenth century the tomato was accepted into the diets of many Americans. By the end of the nineteenth century and throughout the twentieth, the tomato grew to be among America’s most popular vegetables. Served both fresh and processed, in “American” and ethnic dishes, and through organic and heavily industrialized methods, the tomato today represents the expansion and diversity of the American diet while also symbolizing both the promises and concerns of the industrialization of American food.

The integration of the tomato into the diets of Europe and North America is an unlikely chapter in the story of modern food culture. A member of the *solanum* genus and related to the deadly nightshades, the tomato was often dismissed as poisonous by European and American botanists and cooks well beyond first contact with the plant. The stems and leaves of the tomato plant are, in fact, poisonous. More important to the development of tomato consumption in nineteenth century America, however, since few people beyond botanists knew anything about the *solanum* genus, was the fruit’s unusual characteristics. The tomato, a bright red, soft ball, but often oddly shaped, rough, and with a dense core, was also highly perishable and fragile. Suspicion formed around the unique appearance of the tomato plant and its aromatic foliage. The tomato’s high perishability and fragility discouraged tomato production as well, since food
security, and in particular the need to create a stable year-round supply of food, were of great concern to most farmers, cooks, and eaters at that time.

Thus it is surprising that over the course of the last two centuries the tomato evolved from a rare, seasonal good available only on the farm to being available in a variety of forms at any place. Throughout this process, farmers, corporations, consumers, reformers, and government researchers have made numerous attempts to refashion the tomato and its place in American culture. What began as an alien food emerged by the end of the nineteenth century as one of America’s most popular vegetables. The tomato’s history reveals the historic American desire to expand variety in the diet and to transcend the seasonality of the harvest. In common with other foods such as wheat, corn, and beef, a wide range of corporate and non-corporate actors reengineered the tomato, standardizing varieties, extending the growing season, centralizing production, and developing technologies to preserve the tomato throughout the year. Unlike these staple foods, however, the tomato and our cultural ideas and expectations of tomatoes have resisted the forces of commodification even with the advance of industrialization. Consumers, farmers, corporations and others all cooperated and competed to create a distinct and diverse culture of the tomato, one which has produced both 3,000 pound drums of bland tomato paste and hundreds of varieties of heirloom tomatoes available in an array of different shapes, sizes, and colors.

The tomato industry has recently become a symbol for historians and journalists of the cultural, political, economic, and agricultural control that modern corporations have over the food that Americans consume. For many scholars and journalists, the tomato industry is an example of the troubling state of modern agriculture and food industries – highly centralized, relying on technological control and on the exploitation of labor and the environment. These
findings largely resemble those of most other contemporary scholars studying other aspects of American food production and consumption during the late nineteenth century. For these writers, the can and the food corporation symbolize the annihilation of time, space, and taste in modern American society.¹

The tomato, however, offers a much more complex and interesting story. The broad history of the tomato, from its popularization in the early nineteenth century through today, is a history of culinary curiosity, experimentation, and an expansion of the American diet. This study of the entire history of the tomato illuminates continuities and discontinuities not visible in narrow, period-focused studies. This project begins by examining food culture in early America and the popularization of the tomato during the nineteenth century, looking specifically at how the tomato was added to the American dinner table by finding ways to extend the seasonality of the tomato and to preserve it for off-season consumption. It then traces changes in tomato culture and production through two distinct processes of industrialization, the first completed from roughly 1880 through 1945, and the second from 1945 through the 1970s. In doing so, I separate the initial wave of industrialization – the rise of canning and national distribution – from the second wave – which was marked by the centralization of production and the homogenization of food culture. By taking a long view of a single commodity, then, this project follows in a growing tradition of commodity studies revealing what Sidney Mintz refers to as the “interdigitated” relationship between production and consumption.²

The tomato is botanically and culturally unique compared to most foods that have garnered significant scholarly attention, and thus the history of the tomato offers unique insight

¹ The literature on tomatoes has addressed a number of issues raised by the growing power of the corporate tomato industry, including the growing economic strength of processing companies, the cultural symbols of tomatoes provided by advertising and marketing, factory and field workers’ attempts to organize and the
into changes in American food culture during the nineteenth and twentieth centuries. At the same time, however, the tomato is also quite similar to, and thus representative of, many other foods that have also gone unrecognized by historians. While tomatoes continued to be grown in many regions of the country through the 1930s, many other crops, including watermelons, peas, broccoli, and cabbage, were by 1940 still grown in large quantity in multiple regions of the country. During the first half of the century, the tomato, along with numerous other fruits and vegetables that were not mechanically harvested, were far less likely to be produced in small centralized areas except where climatic needs limited the potential for geographically decentralized production. Ultimately, the tomato represents a new class of crops that have been under-represented in histories of American agriculture and food culture.3

The Tomato in Eighteenth and Nineteenth Century American Food Culture

The history of the tomato offers a fresh way of thinking about the development of American food culture. The literature concerning the history of American food production and consumption has commonly turned on the question of early attitudes towards “quality” and diversity, and how that has shaped contemporary food culture. For many scholars, especially those that celebrate the industrialization of food during the nineteenth and twentieth centuries, early American food culture was defined by its reliance upon food primarily as a fuel and as a way of preserving old world tradition. This scholarship focuses on Americans’ heavy reliance on staples such as pork, corn, beef, and wheat. Historian Richard Osborn Cummings, for example, observed that “a monotonous round of badly cooked food, however, was the lot of most

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3 Production of numerous crops remained geographically diverse as late as 1939, including cantaloupe, celery, carrots, and eggplants. The tomato industry, however, had the highest degree of decentralization of these examples. See, for example, US Census Bureau, Sixteenth Census of the United States: 1940, Agriculture, Vol. 3, Part 8 (Washington, D.C.: U.S. Department of Commerce, 1942): 804-809.
Americans.” In this view, American cuisine, too, was limited by the desire of many American colonists to strictly adhere to English and other European culinary traditions. Waverley Root, in his 1976 *Eating in America*, argues that despite the New World offering a very unique opportunity for the development of an entirely new food culture, American colonists opted to adapt their new environment to grow familiar foods that enabled them to replicate English and European culinary styles in the New World. With a bit of “obstinacy,” even when facing starvation conditions, Root argues, early Americans “turned their backs on most of the new foods [available in America], often refusing to eat them until after Europe had accepted them and reimprinted them to the land of their origin.”

The view of early American food defined primarily as a fuel – as primitive, bland and stagnant – and as a vehicle of tradition, has in recent year been countered by a view that celebrates the creativity and novelty of early American cuisine. This scholarship, which tends to have a negative assessment on the effects of the later industrialization of food, celebrates the supposed diversity and authenticity of American food culture during the eighteenth and nineteenth centuries, often finding early American food traditions more “pure” or “natural” than the industrial alternative that emerged by the beginning of the twentieth century. In her recent work, *Kitchen Literacy*, for example, Ann Vileisis celebrates the local-ness of early American foodways and argues that this required consumers and cooks to have a much greater knowledge of food than consumers of industrial food, where national networks of food production and distribution distance and obscure consumers from the food that they consume.

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The tomato sheds new light on this debate. Yet historians of food have largely ignored the tomato, focusing instead almost exclusively on staple crops like meat, corn, and grain, and exotic crops like citrus fruit. The history of the tomato, however, offers a unique perspective on this debate as a new vegetable whose rejection or adoption says much about the conservatism or innovativeness of Americans during the eighteenth and nineteenth centuries. Early America’s rejection of the tomato and other less-favored crops was often not simply the result of them being different, but also because they were highly perishable and ripened during a short season. Early Americans need for a stable food supply and one that was available year-round made such crops less advantageous to cultivate.

The early reliance upon foods like corn, beef, wheat and hard vegetables like squash and pumpkins that could easily be preserved, along with the rejection of the tomato, indicates that early America suffered from a diet that was often limited, monotonous, and bland, as one group of historians note. Some of this can be attributed to the culinary conservatism of early Americans and the continued influence of British cuisine in America. However, a more significant factor in keeping the tomato from playing a significant role in eighteenth century America was the high perishability and the difficulty in preserving tomatoes. By the nineteenth century, the tomato was accepted into the American diet as the deficits regarding the seasonality and perishability of the tomato were overcome. The expansion of the American diet to include more diverse, and perishable foods, came quickly after the advent of new technologies and techniques to preserve these foods for off-season consumption, indicating that technical limitations, rather than simply culinary conservatism, was the primary obstacle to an expanded American cuisine. Culinary innovation and creativity thrived following advancements that allowed cooks to overcome the difficulties with preserving perishable fruits and vegetables for off-season consumption,
indicating that culinary limitations, rather than conservatism, played the larger role in limiting the early American diet. Between 1820 and 1900, tomato consumption increased dramatically as farmers sought to expand access to fresh tomatoes by extending the growing season and cooks both found ways to preserve the tomato for out-of-season consumption and expanded the uses of tomatoes. Thus the expansion of the American diet during the eighteenth century paralleled efforts by cooks and farmers to overcome the seasonality and perishability of short-season and soft fruits and vegetables like the tomato. By the turn of the twentieth century, after nearly a century of experimentation and experience, the tomato was well integrated into American cuisine. This suggests that in many cases the culinary monotony and conservatism exhibited in early America was more the result of difficulties in establishing a year-round supply of diverse foodstuffs than simple culinary conservatism or obstinacy. As kitchen and agricultural technologies expanded, enabling tomatoes and other perishable foods to be produced and consumed out-of-season, the American diet became more diverse.

**The Industrial Revolution and the Commercialization of Food**

The industrialization of tomato production beginning during the late nineteenth century and continuing through the 1970s offers critical insights into the history of industrialization and serves as an important counter-example to the dominant narrative offered by scholars of food, industrialization, and commercial culture more broadly. Tomato production underwent two distinct periods of industrialization. The first, beginning by the 1880s and ending with World War II, was saw the rise of the canning industry and the development of a year-round supply of fresh tomatoes in urban markets. This industrial model, unlike industrialization of most staple foods, was marked by geographic and economic decentralization. The second wave of
industrialization, which began in the years following World War II and continued at least through the 1970s, saw a dramatic shift away from decentralized production and processing, with most domestic fresh production taking place in Florida, and nearly all processed-tomato production occurring in California. This process of industrialization was fueled by efforts to mechanize the production and processing of tomatoes and to standardize tomato varieties, growing practices, and the tomato products available in supermarkets and restaurants.

By the late nineteenth century, the efforts to expand access to tomatoes transitioned from farmers and cooks towards industrial and commercial enterprises. Nowhere was this clearer than in the emergence of the canning industry during the late nineteenth century. Within a few decades at the end of the nineteenth century, the tomato emerged as a leader in canned vegetables. Yet, despite the industrialization of the tomato, canned tomatoes were produced by thousands of canneries spread out across almost every region of the country. Small and large farmers alike grew tomatoes for market and can-house production. At the same time as the processed tomato industry began to grow, the consumption of fresh tomatoes increased dramatically, especially as farmers and agricultural experts utilized new, early-to-harvest tomato varieties, and technologies such as hot beds and greenhouses to produce a long season of tomatoes. The result, by the 1930s, was a geographically and economically decentralized industry, where large and small canners and farmers all contributed to growing tomato production.

So how does this story of the industrialization of the tomato fit within the broader historiography? Historical inquiries of the industrialization of food have centered on staple foods – pork, beef, corn, and grains – as well as more exotic foods like oranges and bananas, industries that by the end of the nineteenth century were mostly controlled by large commercial
interests centered in only one or a few regions. Following in the tradition of works such as Alan Trachtenberg’s *The Incorporation of America*, scholars of food and food commodities like William Cronon and Roger Horowitz argue that by the beginning of the twentieth century, two of the largest food industries, meatpacking and grain processing, had become highly concentrated in Chicago and its vast hinterland of productive soil. Other scholars have found similar results in studies of bananas, oranges, and lettuce. Despite the limited potential geography for orange production in the United States for example, Steven Stoll argues that corporate advertising and marketing helped propel California citrus production above its competitors. These findings have been consistent with the larger consensus among historians on the effects of industrialization and the rise of the modern corporation, including the dramatic restructuring of food industries towards economic and geographic centralization.  

Elsewhere, scholars have examined the acceptance by Americans of corporations in controlling the production, processing, marketing, and advertising of brand-name goods during the early twentieth century. Susan Strasser, for example, sees the late nineteenth and early twentieth centuries as a pivotal period in the formation of modern American consumer culture, where corporations developed new marketing and branding strategies to affect a significant revolution in American consumption. For Strasser and other scholars, the emergence of dominant brand-name products such as Campbell’s tomato soup and Heinz ketchup was a central

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component of industrialization, one which helped solidify the dominance of corporations in influencing consumer culture and American buying habits.\(^7\)

In addition to the focus on the centralization and concentration of production within food industries, scholars have also devoted significant attention to the effects of industrialization on American food culture. Harvey Levenstein’s 1988 *Revolution at the Table* describes the emergence of a unified national food culture in the United States by the 1930s due to the growing power of corporations along with the efforts of government and culinary reformers. The result, Levenstein argues, was a dominant and homogenized food culture, where immigrant and alternative food cultures were largely destroyed.\(^8\)

I argue that the history of the tomato questions the extent to which these forces – centralized production, product branding, advertising and marketing – dominated early twentieth century American life. The influence of commercial culture during the early twentieth century undoubtedly increased. Even in the case of the tomato, several companies – including Heinz and Campbell’s – became among the largest companies in the United States in no small part due to their tomato products. While these companies stand out in pure economic terms, their power does not readily translate as dominant in cultural terms. The primary processed-tomato product through the first half of the twentieth century remained canned whole tomatoes – a product that was produced by thousands of companies across the United States. More important, canned whole tomatoes and other similar products were minimally-processed, making them most


valuable to the cook because they facilitated culinary curiosity and creativity. Unlike the 
convenience foods of the era — crackers, pre-baked bread, and even tomato soup, minimally-
processed tomato products did little to bring about a homogenized and standardized American 
diet and instead facilitated culinary expansion through increased tomato consumption.

The trends set in motion during the first wave of industrialization within the tomato 
industry — the decentralized production of standardized products suitable for culinary creativity — 
did not continue into the postwar period. The tomato industry became a part of the story of the 
consolidation into few (and larger) companies, the rise of packaged convenience foods, and the 
accommodation of American consumers. These trends fully matured during the postwar period. 
A new push towards mechanization, in part brought on by continued labor shortages, helped 
revolutionize tomato production at the expense of diverse methods and locations of production. 
The continued consolidation of food companies and the growing influence of advertising and 
marketing eventually overwhelmed the model of production and consumption of tomatoes that 
had developed during the first half of the twentieth century. By the 1960s, the full mechanization 
of processed-tomato production combined with the emergence of new convenience foods — pre-
spiced tomato sauces, frozen dinners and pizzas, and the fast-food hamburger and French fries — 
radically realigned the geography and economics of tomato production and the diversity and 
creativity of American culinary culture. The regional production networks common during the 
first half of the century were quickly replaced by centralized processed-tomato production in 
California, and fresh tomato production in Florida and Mexico. Likewise, Americans 
increasingly ate out in fast-food joints and restaurants, and even the home cooked meal often was 
produced out of boxes, bags, and cans. The history of the tomato provides a clearer picture of the
transformation of American food culture between these two phases of industrialization. Yet, industrialization is only part of the tomato story.⁹

**Agricultural “Progress” and the Tomato**

The story of the tomato offers a challenge to the conventional narrative of the development of American agriculture. Due to its limited cultivation during the seventeenth and eighteenth centuries, tomato breeding and improvement took place much later than other crops, and often happened alongside industrialization. As such, it provides a sharp contrast to more heavily cultivated crops like wheat, corn, or turnips where plant breeding was extensive for centuries prior to the industrialization of food. From the outset, then, even though enterprising farmers rather than corporate growers completed much of the early tomato breeding, it was completed with the market in mind. By the twentieth century, as the emergence of national markets forced both states and the federal government to devote increased attention and resources to agriculture, agricultural researchers at the state and federal level undertook much of this work. This research helped fuel the expansion of tomato cultivation outside of traditional areas of dominance, such as New Jersey, Indiana, and New York, and into Southern and Western states like California, Florida, Mississippi, and Arkansas.

The growing relationship between agriculture and the government is best demonstrated by the development of the mechanical tomato harvester in the early 1960s. The mechanization of many aspects of agriculture – including Cyrus McCormick’s reaper (1837) and John Froelich’s

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gasoline tractor (1892) – have generally been viewed as a response to shortages of labor.¹⁰
Developed by one or a few people, these innovations were often supported by the industries that stood to benefit. Agricultural historians have long viewed the early twentieth century as a pivotal period in the mechanization and industrialization of American agriculture. Mechanization of tomato harvesting, on the other hand, happened much later and was primarily the result of the land-grant college system. The complexity of successfully mechanizing tomato harvesting required the cooperation of a variety of actors within the university – agronomists, botanists, mechanical engineers, and others. The development of the first and most prominent mechanical harvester took place over the course of two decades at the University of California at Davis, where dozens of agricultural experts and other university personnel contributed to its success. Unlike many other innovations, the tomato harvester was not the direct result of industrial pressure to find a technological solution to labor problems; indeed, until the early 1960s, after nearly two decades of labor shortages in the state’s tomato fields, California tomato producers showed very little support for the project, opting instead to lobby the government for increased access to migrant and other cheap labor. Only after producers repeatedly failed to convince the federal government to continue allowing migrant labor into the country to harvest tomatoes did producers finally accept the need for a mechanical harvester. Thus the harvester itself was more the result of independent academic inquiry than market conditions.¹¹

The successful development of the harvester was quickly accepted and had concrete, real-world impact. Almost immediately, California, which already grew the majority of tomatoes

destined for canneries, dominated the production of canned tomatoes. Mechanization also forced many farmers out of business and encouraged existing growers to expand operations. The decentralized production of canned tomatoes that emerged during the early twentieth century quickly ceased, as other states and regions could not compete with California’s industry. Likewise, fresh tomato production became divided between California and Florida, as new technologies and agricultural practices helped tomato growers achieve a geographically centralized 12-month tomato. Despite these tomatoes often underwhelming consumers and food critics, regional and local tomato production struggled to exist as Florida’s industry, often protected by the federal government through trade policies and tariffs, continued to expand. These changes in the organization and operation of both canned and fresh tomato industries reinforced the larger transition towards a food culture based on convenience and homogenization.

While the tomato offers a challenge to the conventional history of agriculture, the tomato ultimately conforms to the story of centralized production and the homogenization of food culture. Yet the tomato suggests still another wrinkle on that narrative. The prevalence of the tomato to local and homegrown food efforts serve as a strong example of the importance of the tomato and tomato cultivation to resistance to the dominant food culture of the late twentieth century. Despite a temporary lull in home gardening during the postwar period, for example, it became a very popular hobby beginning in the 1970s as inflation and high food prices coupled with environmental and health concerns led many Americans to consider growing their own food. Likewise, although direct sales between farmers and consumers tapered off during the Depression and in the years following World War II, by the 1970s farmers’ markets surged in popularity. Both of these remain popular forms of food acquisition today. Contemporary interest
in food carts, ethnic food, and community-supported agriculture (CSA) programs all indicate a growing interest among consumers to challenge corporate control over food production and culture. While historians have also seen the counterculture as the primary challengers to the dominance of industrialized food in the decades following World War II, Americans from all walks of life practiced home gardening and shopped at farmers’ markets. Among home gardeners and at farmers’ markets, homegrown and local tomatoes give concrete expression to these challenges to the dominant commercial culture.\textsuperscript{12}

\textbf{Toward a New Understanding of American Food Culture}

In studying the rise of brand-name goods and advertising in the early twentieth century, scholars have focused great attention on advertising and marketing materials. It is no surprise, then, that scholars have found these materials to have great importance in the development of American food culture during the early twentieth century. In this project, however, I have sought out new sources in order to provide a more complete perspective on how American food culture changed over the course of the nineteenth and twentieth centuries. In doing so, I have sampled a wide variety of source material, including seed catalogs, restaurant menus, agricultural journals, cookbooks, and agricultural and mainstream periodicals. Many collections, including the Henry G. Gilbert Seed Trade Catalog Collection at the National Agricultural Library and Cornell’s Restaurant Menu Collection, were extensive, and required me to sample the available materials rather than complete an exhaustive survey. Likewise, this project utilizes many periodicals, most of which are available through online databases such as ProQuest, and in almost all cases, broad keyword searches and date sampling were used in order to limit the otherwise endless amount of

\textsuperscript{12} Much of the literature on challenges to the food industry during the postwar period focuses on the counterculture. See, for example, Warren Belasco, \textit{Appetite for Change: How the Counterculture Took on the Food Industry} (Ithaca, NY: Cornell University Press, 2006).
sources I found. I have shown in the notes where full runs of sources were examined. My primary methodology in developing source bases was to be as expansive as possible on the types of sources used rather than to be exhaustive in my use of each source.

The diet of early Americans, the subject of Chapter One, often suffered from a lack of diversity and an over-reliance on staple foods like pork and corn. The history of the tomato indicates that by the end of the eighteenth century, Americans sought new diversity and variety in their foods. In Chapter Two, I examine how American cooks adapted the tomato to existing culinary traditions and used the tomato to find ways of expanding those habits.

Similarly, the emergence of the tomato in early America and its popularization in the nineteenth century depended upon finding new ways of preserving the tomato and extending the tomato season. While twentieth century industrialization offered high-tech solutions to those problems, these ideas were already firmly rooted in early nineteenth century America, where inventive farmers and cooks used agricultural and cooking techniques that they developed to increase the availability of fresh and preserved tomatoes throughout the year.

Chapter Three explores the first wave of industrialization within both the fresh and processed tomato industries, and focuses primarily on the unique decentralized geography that emerged during the early twentieth century as both small and large tomato producers and processors emerged in nearly every region in the country. Decentralized production was a critical part of achieving a 12-month supply of fresh and processed tomatoes. The prevalence of a standardized minimally-processed product – canned whole tomatoes – enabled small canneries throughout the country the ability to can tomato products. The highly dispersed and unconsolidated tomato industry, along with the existence of minimally-processed fresh and
processed tomatoes, as Chapter Four shows, helped perpetuate a diverse tomato culture. Despite the growing economic influence of companies such as Campbell’s and Heinz, who developed much more heavily-processed tomato goods, tomato consumption was heavily influenced by the popularity of fresh and canned whole tomatoes, which enabled a host of actors, including middle-class reformers and cooks, immigrant groups, and farmers, to develop distinct tomato cultures.

During the second half of the century, however, tomato production became highly centralized and concentrated in Florida (fresh) and California (processed), as tomato production and processing underwent a second wave of industrialization. As Chapter Five indicates, continued labor shortages, the invention of the mechanical tomato harvester, and the development of a nationwide system of roads and highways all contributed to the demise of long-established tomato industries in many regions of the country. At the same time, the tomato played a large role in shifting American food culture away from culinary creativity and towards highly-processed convenience foods, such as DIY pasta and pizza kits, frozen pizzas, fast food burgers, and pre-seasoned and pre-spiced tomato sauce. Overall, then, the postwar period was pivotal in the transformation of the tomato industry into a highly concentrated affair, and in the emergence of a convenience food culture where time required in food preparation largely outweighed food quality and culinary diversity.

Yet, as Chapter Six contends, the second half of the twentieth century also saw the rise of alternatives to these dominant forms of production and consumption. Largely based on pre-existing traditions of marketing and gardening, by the 1970s many Americans sought to find alternative means of food acquisition and began frequenting farmers’ markets and practicing vegetable gardening at home. In both cases, small, but still significant swaths of the American
population – urban, suburban, and rural, affluent and poor, native and foreign-born – sought ways to acquire food outside of the dominant commercial culture. In more recent years, trends such as the slow and raw food movements, along with the growing popularity of food trucks and ethnic food, have continued to challenge the dominance of mainstream, corporate food.

The story of the tomato offers a perspective on American food history that contrasts sharply with the prevailing literature on American food culture. While contemporary observers often see the pink, plastic-looking tomato as representative of the worst of American agriculture, industrial, and cultural practices, the tomato, too, is the symbol of the organic farmers’ market and home garden, and is depicted as natural, wholesome, and tasty. These seemingly contradictory images epitomize the two extremes of a very diverse tomato culture.

This diverse tomato culture is the result of more than two centuries of tomato production and consumption in the United States, where rural farmers and cooks, corporations, government reformers, immigrant groups, and a variety of other actors, all participated in the development of diverse uses for and ideas of tomatoes. From commercially produced ketchup and frozen pizzas to fresh caprese salads and tomatoes stuffed with meats, cheeses, and vegetables, tomato culture in the United States has thrived on diversity, and its development was the result of a general broadening of the American diet during the nineteenth and twentieth centuries. There is little question that this culture suffered between the end of World War II and today, yet the persistence of alternatives to the dominant culture of heat and serve spaghetti and tomato sauce – farmers’ markets, home gardening, foodie culture, and the like – all indicate that this diverse culture remains alive. Even the idea of a year-round supply of tomatoes – an idea developed by
nineteenth century cooks and farmers and perfected by twentieth century industrial processes – has in recent times been challenged by alternative food culture as some Americans embrace the seasonal tomato. Despite the seemingly dominant nature of the corporate tomato and its integration into a convenience-based food culture, tomato culture remains defined by conflict and a diversity of ideas. Tomato culture, and American food culture more broadly, is consistently being made and remade as a reflection of the great diversity of ideas about food.
Chapter One

The Early American Tomato

In explaining why both the potato and the tomato were not cultivated in early America, American food historian Waverly Root answered succinctly: “They were not there.” Root’s explanation is only half true, and is in part derived from a mythology surrounding the introduction of the tomato that was widely disseminated and believed for much of the twentieth century. The tomato is not native to the present-day United States and only made its way here following a circuitous journey: first in the sixteenth century from southern Mexico to Europe, and then, during the eighteenth century, from Europe back to the New World, to the Caribbean and the American colonies. Although a late arrival to the American colonies, the tomato was very much present before the nineteenth century.¹

Upon its emergence in the American colonies in the eighteenth century, the tomato was not immediately integrated into the American diet. Instead, it took more than a century for the tomato to spread throughout the American colonies. By the late eighteenth and early nineteenth century, the tomato was at least accessible in most regions of the American colonies, but even then, it was not widely consumed. Several factors kept the tomato from being integrated into the American diet until the nineteenth century. One of the most important obstacles was the geographic isolation and culinary conservatism of the American colonies. Despite the New World possessing a cornucopia of plants and animals new to European cultures, American settlers often stuck to culinary traditions brought from the Old World. When at all possible, they imported European staple crops and domesticated animals, and when necessary, they adapted new foods into their diet. In short, early Americans hoped to transform the New World into a

culinary outpost of European cuisine as they or their predecessors from the Old World knew it. Even as the tomato became an accepted food in Europe, and this took time, geographic and cultural isolation slowed the spread of these culinary ideas into America. The New World was more conservative than the Old.

Another important part of this story, however, emerges from the tomato itself. As a soft-fruited plant, unlike many other fruits and vegetables popular in Europe, the tomato did not fit a dietary pattern where hard root and tough leave vegetables (like turnips and cabbage) and hard fruits (like apples) predominated. Moreover, as a member of the nightshade family, which includes several plants thought to be poisonous, Europeans and American colonists alike were deeply suspicious of the tomato. Even when that suspicion was abandoned, there were other reasons not to cultivate it. As a highly seasonal and perishable plant, the tomato ripened at a time of the year when food supplies were at their peak. Without adequate means of preserving the tomato for out-of-season consumption, either in fresh or preserved forms, most colonists had good reason to cultivate other, more durable crops like potatoes, cabbage, and beans.

Nevertheless, while colonists often attempted to retain strong ties to British cuisine, they eventually made important adaptations. After early struggles to grow wheat and other Old World grains, for example, New England colonists eventually adopted corn, which became an integral part of New England cuisine. At the root of many of these changes was a need to secure adequate food throughout the year. In the American colonies as elsewhere, even through the eighteenth century, food scarcity, especially during the winter and spring, was still a very real threat. This initially discouraged cultivation of a soft short-season crop like the tomato. Thus more important than the culinary conservatism of American colonists, the seasonality of the tomato limited its usefulness in a period marked by a need for food security rather than culinary diversity.
The Origins of the Tomato

The origins of the tomato were long subject to debate – from the sixteenth century onward, botanists, archeologists and others all theorized on the origins of the tomato plant. Though most serious scholars placed the origins of the *Lycopersicon esculentum*, the tomato species cultivated today in the United States, somewhere in South or Central America, for centuries these scientists and other scholars found it difficult to narrow down its exact origins. The most popular view—that the modern cultivated tomato originated in a narrow strip that began in Ecuador and went south into northern Chile—was generally accepted until the mid-1940s, when University of California geneticist J.A. Jenkins complicated this story. While Jenkins accepted that the original location for the emergence of the *Lycopersicon esculentum* species was likely around Peru, he argued that well before Columbus, the tomato, likely through accidental human interaction (e.g. carrying seeds on clothing, etc.) expanded northward into southern Mexico. In Mexico, Jenkins suggested, humans began experimenting with the species and cultivating it well before the arrival of Europeans. Thus, Jenkins argued that Europe’s first encounter with the tomato came in Mexico, south of the Tropic of Cancer, where it had already been improved significantly from its wild origins in Peru.²

In all likelihood, then, the first European contact with the tomato took place in Mexico in the twenty years between the conquest of Mexico in 1521 and 1544, when the tomato was mentioned in Italian doctor and botanist Petrus Andreas Mattioli’s first edition of his *Discourses*. While Europeans often went to the New World for silver and gold, they also collected genetic

materials from the New World, often for research on these plants’ medicinal value. The tomato’s inclusion in Mattioli’s _Discourses_ indicates that from an early stage, the tomato was being investigated primarily for its potential medicinal, rather than culinary, value.³

Mattioli’s heritage as Italian also points to a relatively quick spread from Spain to other countries, as botanists and herbalists shared ideas and genetic material in their quest for new medicines. Several countries in continental Europe, including Spain, Italy and France, began cultivating tomatoes as early as the 1540s, but they did not make an appearance in England until the 1590s, when they were first planted in Holborn at the College of Physicians gardens. Despite this, the tomato was likely not served at European tables in the sixteenth century. The most influential cookbooks and food guides of the sixteenth century give no mention of the tomato. In 1592, Spanish priest and gardener Gregorio de los Rios observed that “it is said that [tomatoes] are good for sauces,” suggesting that de los Rios had never tried them. Another early mention of the tomato include them being used in salads in Seville in 1608. Yet many major cookbooks of the period continued to neglect the tomato, making little or no mention of the fruit at all. As scholar Rudolf Grewe has argued, it “is not that [the cookbooks’] authors were out of touch with new trends in the culinary arts, but that in Spain, toward the end of the sixteenth century, the tomato, although known and eaten, was cultivated on a small scale, and its culinary uses were still experimental.” The first European cookbook to mention them was Antonio Latini’s _Lo Scalco Alla Moderna (The Modern Steward)_, which was not published until 1692 in Naples. This recipe, a Spanish-style tomato sauce, called for roasting and then mincing tomatoes with the addition of hot chili peppers, another New World crop. By the early eighteenth century, despite concerns among many botanists and other herbalists about the safety of consuming tomatoes, use

of the tomato for culinary purposes expanded dramatically as cookbooks across Europe began to include recipes for tomato-based dishes.⁴

Before being brought to Europe, the tomato was already cultivated in a modern sense. Part of Jenkins’ argument for Mexico being the site of Europe’s encounter with the tomato, in fact, was that while in Peru the tomato remained primarily a wild species, in Mexico it had been improved by human hands. Most notably, while tomatoes found in the wild were very small, sometimes smaller than one centimeter in diameter, in Mexico a variety of sizes of tomatoes could be found, including some that were five or more centimeters in diameter, indicating a long period of cultivation.⁵

Upon being sent to Europe, the tomato continued being improved. Its very existence in Europe required an unintended improvement in tomato stock, as most of the wild tomato stock required halictus bees in order to pollinate. By bringing tomatoes to the Mediterranean, where halictus bees were not present, only the somewhat rare self-pollinating tomatoes survived. By unintentionally remaking the tomato into a self-pollinating plant, Europeans made it far easier to replicate tomato plants with desirable traits, something that European botanists and gardeners continued to do after the arrival of the tomato in Europe. Thus the Columbian exchange brought the tomato to its first destination in Europe, where it eventually helped revolutionize several European culinary cultures, including Spanish, French and Italian cuisine.⁶

It did not, however, immediately revolutionize European cuisines, as through the end of the sixteenth century, it was generally looked at, according to Italian food historian David

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⁶ Smith, The Tomato in America, 16-7.
Gentilcore, as a “curiosity, a dietary extravagance” with potential medical benefits. During the seventeenth century, as much of Europe shed its suspicion of vegetables, tomato consumption increased. Italy and Spain, both in Mediterranean climates, were the first to integrate the tomato into their diets. By the 1660s, Englishman John Ray reported tomatoes to be a food that Italians ate that his own countrymen had not yet adopted. By the end of the eighteenth century, tomatoes made up a substantial portion of the diet in Naples. French cuisine, highly influential during the seventeenth and eighteenth centuries, did not adopt the tomato until much later, perhaps as late as the 1770s, when for the first time a seed catalog listed the tomato as a vegetable, rather than an ornamental. In Britain, too, the tomato was not generally eaten until the mid-eighteenth century, but by 1820 The Times confessed that “Love-apples are now to be seen in great abundance at all our vegetable markets.” Though the writer admitted that the middle and lower classes had not yet adopted them, he argues that “within this last few years it has come into great use with all our best cooks.” In soups and sauces, boiled, roasted, and fried, the tomato had become a significant part of British cuisine.7

The gradual integration of the tomato into European cuisine would repeat itself in America during the eighteenth and nineteenth centuries. Much like their European counterparts, American eaters were often skeptical of vegetables and dismissed the tomato as a mere curiosity. European and American cooks were also often conservative, preferring foods they knew. Finally, even as vegetable consumption increased, the tomato, especially in America – where food options were plentiful but a year-round diet was anything but certain – was often overlooked due to its seasonality and perishability. In an age and culture where food security was more important

than diverse food culture, the tomato was only very slowly integrated into European and American cuisines.

The Tomato Comes to America

The origins of the tomato in America were long shrouded in mythology, as numerous “introduction” stories, most dating back to the early nineteenth century, purported to explain the introduction of the tomato into the United States. These stories typically revolved around Great Men – wealthy, white, and leaders in their community – introducing tomatoes to their local areas in a very public fashion. One of the most prominent of these tales is that of Thomas Jefferson, reportedly introducing the tomato to the shocked citizens of Vicksburg, Virginia, though strangely he “introduced” the tomato by eating one out of someone else’s garden. The other prominent story is that of Robert Gibbons Johnson, who supposedly introduced the tomato to Salem, New Jersey in 1820. Though no accounts emerged of this event until the twentieth century, this has become an oft-told legend, even being featured in a segment of the CBS radio program “You Are There” in 1949. Much like Jefferson, Johnson was a prominent member of the community and later helped found the Salem County agricultural society. In this tale Johnson, too, introduced the tomato in a very public way, standing on the courthouse steps, while onlookers looked on in disbelief. The acceptance of these introduction stories helped obscure the longer history of the tomato in America, but they also served as reassurance to a hesitant public that the tomato, long considered poisonous or unhealthy, was in fact safe to eat.8

Despite the long-held belief that the tomato did not exist in America until well into the nineteenth century, the tomato was present in parts of America by the early eighteenth century and could be found in nearly all parts of the country within a few years of it gaining independence from England. By this time, the Columbian Exchange had reversed course, bringing the tomato back to North America where it found its way to the Caribbean and the American colonies. This process was slow, as culinary conservatism, geographic isolation, and the extreme seasonality and perishability of tomatoes made the fruit difficult to integrate into the American diet. Nonetheless, beginning in the early eighteenth century, the tomato was introduced to the colonies, and by the mid-nineteenth century, the tomato had solidified a place in American culinary culture.

The first known mention of tomatoes being cultivated in the United States comes from William Salmon’s 1710 *Botanologia*, where he observes that he has “seen them grown in Carolina.” It remains difficult to place the source of these early tomatoes: French Huguenots, British settlers and the Spanish all had settlements in the area. Trade between the southern colonies and the Caribbean, including the slave trade, could also have brought the tomato to the Carolinas. Nonetheless, by the early eighteenth century the tomato had at least made its way back across the Atlantic and onto American soil.9

Numerous other mentions of tomatoes in the southern colonies during the eighteenth century indicate that the tomato was expanding in popularity, even if only within the southern colonies. Though most of these accounts took place in North and South Carolina, the tomato’s

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9 William Salmon, *Botanologia: The English Herbal or, History of Plants* (London: Printed by I. Dawks for H. Rhodes and J. Taylor, 1710), 29; Linguistic evidence supports the idea that tomatoes went from Europe first to the Caribbean and then to the United States, as the term *tomato*, as opposed to *tomate* or *love apple*, appears to have originated in the Caribbean. As opposed to European countries, which tended to use *tomate* or *love apple*, the American colonies, especially those in the south, typically used the term *tomato*. See Smith, *The Tomato in the America*, 26.
reach had extended at least as far north as Virginia by the 1780s, as Thomas Jefferson mentions in his *Notes on the State of Virginia* that his extensive gardens “yield[ed] musk melons, water melons, tomatas [sic], okra, pomegranates, figs, and the esculent plants of Europe.” His inclusion of the tomato with other edible plants at least suggests that his household, and likely his slaves, all consumed tomatoes in one form or another. Jefferson continued growing tomatoes, and at least by 1809 he was cultivating them every year. They were served at the White House in 1806, and he noted numerous times that they were available for purchase at markets in Washington during his presidency. Jefferson created a spectacle in Lynchburg, VA when, upon visiting the town, he ate a tomato from a local garden in front of the townspeople, supposedly introducing “the edible delights of the tomato” to the local population. The tomato had also made its way as far south as Florida. Archaeological evidence from the excavation of Fort Matanzas, an eighteenth century fort on the East coast of Florida near Saint Augustine, indicates the presence of tomato seeds from as early as the 1740s. Archaeologist C. Margaret Scarry concludes that these seeds were most likely locally produced, rather than dried and imported from Spain, and were likely the result of the tomato’s “increasing acceptance as a food” within the Spanish empire. By the early nineteenth century, tomatoes were regularly grown in summer gardens in Florida, in some cases being reported as among the most popular vegetables grown.  

These areas of early contact with the tomato were all coastal areas in the south, areas which would have had regular contact with the outside world, and in particular, with French and Spanish colonists and the Caribbean. Most Americans, however, were much more isolated, both

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geographically and culturally. For them, first contact with the tomato came later. According to historian Andrew Smith, tomatoes spread to Philadelphia by the middle of the eighteenth century, and were offered for sale by several Philadelphia seed houses during the first two decades of the nineteenth century. From Philadelphia, the tomato spread across Pennsylvania rather quickly. The dissemination of the tomato in New York State followed a similar pattern, with the introduction of the tomato into New York City during the 1790s and their spread outward into the rest of the state in the years that followed. Likewise, the tomato was introduced in most established areas of the United States around the turn of the nineteenth century, including Massachusetts and the New England States, Louisiana and Ohio. Even inland states like Kentucky saw the tomato cultivated for culinary purposes by the 1810s. As Americans moved west, they often brought tomatoes with them and introduced them to new territories. Thus by the opening decades of the nineteenth century, tomatoes were readily available in America, for those with a desire to produce and consume them.\textsuperscript{11}

Yet, tomatoes hardly formed a substantial portion of the average American’s diet at this time. For most Americans, the tomato remained a curiosity, and for some, a food that was actively avoided. William Alcott, a well known reformer, public educator, doctor, and author of over one hundred books, claimed as late as 1838 that “no one, it is believed, regards [the tomato] as very nutritious.” Besides having dangerously high acid levels, the tomato also belonged to the same family of plants as the potato and mushrooms, “some of the individuals of which are extremely poisonous.” These fears were not unique to tomatoes, as many fresh vegetables were thought to be unhealthy during the nineteenth century. Many of these fears, as Richard Hooker explains, stemmed from the fact that vegetables “were sometimes washed in polluted streams or eaten in summer months when epidemics were common.” The concerns of Alcott and others,

\textsuperscript{11} Smith, \textit{The Tomato in America}, 29-36.
then, are part of a larger suspicion of fresh, uncooked vegetables that was particularly prevalent in New England, where vegetables were typically overcooked in the British tradition.\textsuperscript{12}

**Culinary Conservatism in Early America**

While debates raged on regarding the healthfulness of tomatoes, there were far more practical reasons for most Americans to have very little interaction with the plant. One major impediment to the integration of the tomato into the American diet was the culinary conservatism practiced by most Americans from the days of the first settlers until the American Revolution. This conservatism also helped keep the tomato from quickly revolutionizing the American diet.

When most colonists came to the Americas, they were not interested in adapting to new foods, but finding new land to plant the old. As historian Alfred Crosby argues, “The whole migration of Spaniards, Portuguese, and the others who followed them across the Atlantic … depended upon their ability to ‘Europeanize’ the flora and fauna of the New World.” From the outset, colonists’ reliance upon Old World foodstuffs posed very serious problems. Despite landing on the shores of an abundant continent, full of game, grain, fruits, and vegetables, most early settlements struggled with survival, in part, because they were reluctant to adapt to their new environments. In both Jamestown and Plymouth, two of the earliest English settlements on the continent, colonists faced starvation conditions for several years until they learned to adapt their diets to the culinary options available in the New World. Thus, as food scholar Waverly Root argues, “The first settlers had come upon a land of plenty. They nearly starved in it.”\textsuperscript{13}

One of the biggest changes in cuisine revolved around the substitution of corn for wheat. In New England, in particular, the Old World staple grains like wheat and rye were not


successful in the early years of the colonies. For many colonists, “the want of English graine, Wheate, Barly and Rie proved a sore affliction to some stomacks, who could not live upon Indian Bread and water,” but the first settlers of the Massachusetts colony struggled mightily to grow wheat. By the 1660s, Massachusetts’s colonists continued to plant wheat in vain. In 1666, Nathaniel Morton reported a near-complete loss of the wheat crop for the third year in a row. In its place, colonists in Massachusetts and around the colonies learned the necessity of substituting corn. Common meals in New England through much of the seventeenth and eighteenth centuries consisted of “pea and bean porridge, or broth, made of the liquor of boiled salt meat and pork, and mixed with [corn] meal, and sometime hasty pudding and milk – both morning and evening.” What wheat colonists could procure was saved for special occasions, for use in piecrusts and other baked goods.  

The culinary conservatism in early America was partly due to the homogenous nature of most of the early colonies. As David Hackett Fischer argues, the formation of American regional cuisines were a product of the English regions and cultures that early American settlers came from. While some areas of early development, including the Hudson Valley region of New York, brought diverse groups of people together, many of the colonies consisted primarily of culturally homogenous groups with similar culinary backgrounds in regional England. The foodways of Massachusetts, for Fischer, “emerged as the combined product of Puritan ideals, East Anglian tastes and American conditions.”

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Likewise, borrowing from their origins in Southwest England, Virginians created a food culture that was more complex, “highly seasoned, with much roasting, simmering and frying.” The plantation culture of the American South also played a critical role in the development of Southern cuisine. With the vast majority of the energy of Southern agriculture on the development of cash crops like cotton and tobacco, Southern planters and farmers chose against diversity. Instead, the food system of the South centered around two staple foods: corn and pork. Like corn, pork became a prominent foodstuff throughout the colonies. It was one of the few European domesticated animals to thrive, as cattle and sheep, in particular, struggled to adapt to New World conditions. “Hogs,” according to Robert Beverley in his early history of Virginia, “swarm like Vermine upon the Earth… [they] run where they list, and find their own Support in the Woods, without any Care of the Owner.” Largely able to fend for themselves, they became a valuable source of food in Virginia and throughout the colonies.\textsuperscript{16}

Though in all cases, staples like corn and pork formed a substantial portion of the diet, colonial cuisine also depended upon other plants and animals, many of them similar to what settlers knew back home but native to the colonies. In both New England and Virginia, rivers and the sea provided substantial sustenance, as colonists took to the waters to find fish, crabs, lobster and other seafood. Beverley reported that compared to Virginia, “both of Fresh and Salt-Water, of Shell-Fish, and others, no Country can boast of more Variety, greater Plenty, or of better in their several Kinds.” Francis Higginson, likewise, reported in 1629 that fisherman in New England “had caught sixteen hundred bass at one draught.” Native plants also helped diversify the diet. In eighteenth century Virginia, New World plants like watermelons, muskmelons, squash, and potatoes, complimented Old World staples like peas and beans in gardens. A

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generation later, additional plants from the Old World, including onions, broccoli, cabbage, and carrots, were reported as being regularly grown in Virginia gardens.\(^\text{17}\)

Of the three main regional cuisines that emerged during the colonial period, however, the Middle Colonies were the most dependent on fresh fruits and vegetables. In 1685, William Penn reported that “Upon Tryal we find that the Corn and Roots that grow in England thrive very well there, as Wheat, Barley, Rye, Oats, Buck-Wheat, Pease, Beans, Cabbages, Turnips, Carrots, Parsnups, Colleflowers, Asparagus, Onions, Charlots, Garlick, and Irish Potatoes.” The success that early Pennsylvanians had in growing fresh vegetables carried over into their cuisine. Yet, Dutch traveler Peter Kalm, who lived with a Dutch family in Albany for a week in 1750, still noticed the simplicity of the food in the house where he stayed. He noted that “there was the same perpetual evening meal of porridge made of corn meal. … After the porridge one ate bread and butter to hold it down.” He continued, saying that dinner was equally drab, usually consisting of “meat with turnips or cabbage.” Thus despite the diversity in foods available for consumption, the cuisine of many of the colonists in the Middle Colonies remained based around staples like corn, wheat, and beef.\(^\text{18}\)

The eighteenth century saw continued development of American culinary styles and ideas, but the emphasis on meat, corn, and hardy vegetables was mostly retained, as Kalm’s observation in 1750 reflects. The diet of most Americans consisted of a steady supply of meat,


corn, and a few vegetables, including cabbage and beans. As historian Richard Hooker has argued, “in the midst of an immense store of animals, birds, and fish, [Americans] set flesh-laden tables.” During the eighteenth century, however, native supplies of wild animals, birds, and fish all began to decline, at least somewhat, leading to an even greater reliance upon domesticated livestock, especially pigs.19

Despite these biases toward tradition and British ways, eighteenth century America was the site of increased cultural interactions, as new peoples and new cultural ideas came to the American colonies. Within decades of William Penn’s acquisition of Pennsylvania, for example, the colony was home to numerous ethnic and cultural groups, including Dutch and German as well as English and Scotch-Irish settlers. New foods, too, were introduced and became staples of the American diet. The white potato, for example, became much more prominent in the early eighteenth century, at least in the Middle Colonies and in New England, especially as Irish immigration increased. The American and French revolutions increased interactions with French culinary ideas, which at least impacted the cuisine of the elite, including Thomas Jefferson, George Washington and John Adams. Finally, by the end of the eighteenth century, America was beginning to pay more attention to agricultural improvements and culinary culture. In 1760, Jarod Eliot published the first American book devoted to the topic of agriculture. In 1785, the first agricultural society, The Philadelphia Society for Promoting Agriculture, was established in the colonies, and in 1811, Elkanah Watson organized the first American agricultural fair in Berkshire County, Massachusetts. Documenting and improving American cuisine also became

19 Hooker, Food and Drink in America, 52.
evident with a flood of American cookbooks being introduced, beginning with Amelia Simmons’ 1796 *American Cookery*.\(^{20}\)

The early American diet was not static. While early colonists generally attempted to stay true to their culinary heritages, environmental necessities and cultural interactions led to the development of diverse and complex American culinary cultures by the end of the eighteenth century. A combination of necessity and choice led these cultures to generally be much less refined than some European cuisines. French elite Constantin-François, after visiting America from 1795 to 1798, had very little good to say about it. His review of New England cuisine was unsurprisingly scathing:

“I will venture to say, that, if a prize were proposed for the scheme of a regimen most calculated to injure the stomach, the teeth, and the health in general, no better could be invented than that of the Americans. … They swallow, almost without chewing, hot bread, half baked, toast soaked in butter, cheese of the fattest kind, slices of salt or hung beef, ham, &c., all which are nearly insoluble. At dinner they have boiled pastes under the name of puddings, and the fattest are esteemed the most delicious: all their sauces, even for roast beef, are melted butter: their turnips and potatoes swim in hog’s lard, butter, or fat.”

One contemporary historian has accepted this assessment, asserting that “a monotonous round of badly cooked food … was the lot of most Americans.” Though these criticisms are simplistic and extreme, there is truth in the simplicity and crudeness of much of the food that passed over American tables. While the simplicity of the American diet was in some ways influenced by the culinary ideas of American settlers, the shaping of this cuisine over time was largely dependent upon the unique conditions of the American environment and a desire to stabilize the diet throughout the year.\(^{21}\)

\(^{20}\) Hooker, *Food and Drink in America*, 44-49; Root, *Eating in America*, 105-6, 114; Amelia Simmons, *American Cookery* or, the Art of Dressing Viands, Fish, Poultry and Vegetables… (Albany, 1796).

The Seasonality of the American Diet

This conservatism is part of the backdrop of American resistance to the adoption of the tomato. But even more important was its unsuitability for a diet built around providing a year-round supply of food. There is no overstating the importance of the seasonality of food to the development of American cuisine. Diversifying access to food throughout the year is a basic idea, and has long formed a major foundation of agriculture and animal husbandry. As cultural theorist Massimo Montanari has observed, one pillar of agricultural advancement has been “the multiplication of the number of cultivated species, the attention paid to the diversification of their time of flowering and growth aimed at overcoming, as much as possible, the natural limits of production.” Likewise, William Cronon argues that one of the main differences between European settlers and Native Americans was the European desire to transcend the seasonality of surpluses and shortages inherent in the natural world. But this was a daunting problem in the case of the tomato.²²

The need to find a stable food supply for out-of-season consumption was, of course, not unique to the American colonies. Human civilizations have often tried to avoid the seasonality of the harvest and to develop ways of preserving foods for off-season consumption. Many of these innovations were quite advanced: at least by 1800 B.C., for example, the Canaanite jar, an approximately thirty liter jar, was used throughout the Mediterranean to store wine, oil, and other preserved liquids. Recent evidence suggests that humans have been grinding wheat and other grains into flour in Europe for at least 30,000 years. In addition to storable grains (and flour), other techniques of food preservation included salting and drying meat; conserving milk as butter

and cheese, and fermenting fruits and grains into wine and beer. The desire to secure a year-round supply of food and efforts to accomplish this long preceded European colonization of the New World.\textsuperscript{23}

Before colonists even set foot on American soil, however, they were confronted with an increased necessity for food that was preserved or otherwise non-perishable. Inevitably they relied on grains and proteins that had long been subject to preservation techniques. On the long voyage across the Atlantic, these settlers were forced onto a diet of preserved staples, including bread, salted beef and fish. For many, their “land stomachs grew weary of ship diet” long before reaching the colonies, where they were often expected to have brought their own food supplies. A list of materials for one man to bring with him to Massachusetts, written in 1630 by Francis Higginson, was intended to provide a colonist with a year’s supply of food. It included eight bushels of meal, two bushels each of peas and oatmeal, along with butter, vinegar and oil. Cheese and bacon were optional, but suggested additions. The process of relocating from England to the American colonies required stripping down cuisine to its fundamental, bare-bones elements. In the seventeenth century, this included staple grains, preserved meat and dairy, and only the hardiest of vegetables (turnips, cabbage, beans, peas, and the like).\textsuperscript{24}

The evolution of American cuisine furthers this point. In every part of the country, major changes in the diet revolved around the desire to create a year-round supply of food. Corn, for example, became a staple in the American diet in no small part because it could be preserved for year-round consumption in the form of corn meal, hominy or grits. Pork, likewise, was not

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\textsuperscript{24} Alexander Young, \textit{Chronicles of the First Planters of The Colony of Massachusetts Bay, From 1623 to 1636}, 267, 477, quoted in Hooker, \textit{Food and Drink in America}, 9.
\end{footnotesize}
valuable simply because the pig could take care of itself, but because pork could easily be preserved for winter and spring consumption either through keeping the animal alive, or when necessary, through the use of copious amounts of salt. Salt pork, indeed, became a staple in several regions in the country, including Appalachia and the Midwest, where it was a mainstay along the Western frontier. Pork was often preferred over other available meats because, in the words of Richard Osborne Cummings, “its flavor actually improves as a result of preservative processes.” In New England, too, beans were dried and prepared at any time of the year. “Pease porridge” along with baked beans became staples in the New England diet in large part because peas and beans could be preserved for year-round consumption. Staple foods, according to David Hackett Fischer, “remained much the same throughout the year.” Even pies and other baked goods were utilized for their ability to delay spoilage, even if only for a few days. Aside from trying to retain ties to their culinary heritage, then, one of the defining elements of changes in early American cuisine was adapting their foodways and culinary styles to account for the seasons.  

Americans, like their European counterparts, were anxious to expand the arts of food preservation and extend the growing and harvest season to new crops like corn and potatoes. However, in the eighteenth century, the tomato was not well suited to this effort. Bernard M’Mahon, writing in The American Gardener’s Calendar in 1806, advised Philadelphia-area growers to plant tomatoes in the open field around the end of May in order to avoid damage from frost. The tomato stock available at the time was still relatively undeveloped by today’s standards. While estimated times until harvest were rarely discussed in publications, in all likelihood even the earliest tomato plant would take more than 100 days to produce fruit,

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25 Cummings, The American and His Food, 16; Fischer, Albion’s Seed, 137. For pies as a preserved food, see Sue Shephard, Pickled, Potted, and Canned: How the Art and Science of Food Preserving Changed the World (New York: Simon and Schuster, 2000), 185-90.
resulting in a harvest no sooner than early September. Thus the tomato ripened when most other summer vegetables were ripening. And, in comparison to other vegetables the tomato quickly rotted. On top of that, since Americans had little knowledge of tomatoes, they also had few means of preserving ripe fruits. Given its high perishability, then, tomatoes would need to be consumed soon after they were harvested, at a time when food supplies were high. In a culinary culture focused on efficiency in creating a year-round supply of food, the tomato was at a marked disadvantage.\textsuperscript{26}

As the colonies increased their food security, they often increased their fruit and vegetable consumption. But again the primary beneficiaries of increased vegetable consumption were hardy vegetables, tubers, root crops and greens that were not highly perishable or could easily be preserved for consumption during the winter and spring in root cellars or similar cool dry places. Upon visiting Swedish colonists in Pennsylvania in the 1750s, for example, pastor Israel Acrelius reported that gardens were well stocked with “beets, parsnips, onions, parsley, radishes, Turkish beans, large beans, peppergrass, red peppers, lettuce, head-lettuce, German lettuce, and scurvy grass.” Most of the plants cultivated, then, were capable of being stored or dried for off-season consumption. Any other plants found in the gardens, Acrelius confirmed, were “regarded as a rarity.” Thus even if Americans were willing to overlook the concerns over whether the tomato was healthy to consume, their focus on out-of-season foods and those able to be preserved for year-round consumption meant that little attention would be given over to tomatoes. Though some middle and upper-class Americans, especially in more developed areas,

\textsuperscript{26} Bernard M’Mahon, \textit{The American Gardener’s Catalog} (Philadelphia: B. Graves, 1806), 319. 100 days is a very rough estimate of the minimum amount of time from planting until harvest. Seed catalogs and other sources did not begin to identify this period until the end of the nineteenth century. At that point, a particularly early variety would be one that yielded tomatoes within 80 or 90 days. In 1806, on the other hand, there were not even established varieties, meaning that most tomatoes would be considered “main crop” as specialization within the seed industry had not yet begun. The 100 day estimate, then, should be seen as a minimum amount of days, rather than a prediction of the exact time frame until tomatoes could be harvested.
planted vegetable gardens, growing lettuce, spinach, and cucumbers, as historian Richard Hooker argues, “for most Americans the frontier experience, to be repeated in time across the continent, would discourage all but potatoes, pumpkins, cabbages, and a few root crops.” Vegetables, like the tomato, which could not be consumed outside of the peak harvest, were generally overlooked.  

The Rise of the Tomato in America

By the end of the eighteenth century, America’s culinary outlook was changing. While American cuisine remained conservative, it was no longer based simply on emulating English culinary ideas on a new continent. During the eighteenth century, political independence from England gradually led to a distinct American culture, including differences in farming and culinary practices, and continued settlement brought diverse immigrant cultures together in new communities. Increased interaction and experimentation with tomatoes by cooks and diners allowed them the opportunity to overcome their fear that tomatoes were unhealthy. The multitude of stories about tomatoes being introduced to small towns and cities throughout the country attest to the fact that the tomato was successfully imported into American culture during the late eighteenth and early nineteenth centuries, even if it was not regularly served at the kitchen table. Well beyond Thomas Jefferson in Lynchburg, VA and Robert Gibbon Johnson in Salem, NJ, Americans were experimenting with the tomato. These scenes, which played out again and again, serve as sites of cultural exploration and change. As more and more Americans were confronted with the tomato, its popularity continued to grow.

Yet, it would be many decades before the fresh-cut tomato would become the jewel of the green salad or the foundation of the sauce of pasta dishes. While the tomato had been introduced

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into nearly every part of the country by the early nineteenth century, it was still hindered by its existence as a seasonal vegetable. Its availability was increasing, as urban markets were beginning to offer the tomato for sale during the season, buts its short availability and high perishability continued to make it a novelty rather than a mainstay on American dining tables. While President, Thomas Jefferson took copious notes on the availability of vegetables in Washington markets, and reported that on average, tomatoes were available at markets from July 16 to November 17, making it available for about four months of the year. More important, the tomatoes became available in the days and weeks following the availability of numerous other fruits and vegetables, including squash, beets, potatoes, turnips and raspberries.\(^\text{28}\)

In the coming decades, as the following chapter will show, cooks and farmers vigorously addressed this problem, experimenting with agricultural techniques and culinary ideas in order to dramatically increase the time of the year that tomatoes could be consumed. Farmers utilized seed selection, hot beds, and other technologies in order to expand the fresh-tomato season. Utilizing new and existing preservative methods, cooks found numerous ways to preserve tomatoes for off-season consumption. These methods, often wedded to traditional means of food preservation – sauces, ketchups, preserves, and pickles – were not revolutionary; the remnants of the culinary conservatism of early America necessitated that the tomato be introduced to America through familiar dishes, methods and preparations.

By the 1830s and 40s, farmers’ and cooks’ efforts to expand the seasonality of the tomato were widely successful, and the tomato’s popularity had undoubtedly risen. In Robert Buist’s 1847 gardening manual, *The Family Kitchen Gardener*, he claims that

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“In taking a retrospect of the past eighteen years, there is no vegetable on the catalog that has obtained such popularity in so short a period as the [tomato]. In 1828-9 it was almost detested. . . . It now occupies as great a surface of ground as cabbage, and is cultivated the length and breadth throughout the year.”

The increased popularity of the tomato was fueled by increased experimentation with tomato cookery, as the wide variety of cookbooks published during the first half of the nineteenth century indicate. These cookbooks, which remained heavily influenced by their earlier British predecessors from the colonial period, nevertheless show a surprising amount of experimentation, cultural sharing, and the addition of a variety of new ingredients and cooking styles.

At the root of this experimentation was the desire to establish control over the seasonality of the tomato. For much of America’s history, its cuisine was determined by the need for a year-round supply of food. The culinary conservatism of many of the earliest settler’s was abandoned out of necessity. New World crops and animals replaced many Old World favorites out of a simple need to adapt and survive. Many of these foods, such as corn, squash, and potatoes, became major staples in the Americas. The tomato, above all because of its seasonality and perishability, remained at best a minor player in early American history. At the outset of the nineteenth century, however, this was set to change. Farmers and cooks, with new agricultural and culinary abilities set out to transcend the seasonality of the tomato and to radically diversify the American diet.

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Chapter Two

The Tomato on the Farm:
Culinary and Agricultural Advancements, 1820-1900

In 1834, Dr. John Cook Bennett, Professor of the Diseases of Women and Children at the Medical College of Lake Erie, in Chagrin, Ohio, gave a public lecture on the importance of tomato consumption to a healthy diet. In addition to it declaring it to be a good food for everyday consumption, he argued that it also had a unique ability to treat a variety of stomach ailments. In a lecture given to a class at his college, he called it one of “the most powerful deobstructants of the Materia Medica,” and one of the greatest remedies for liver problems, and correctly predicted that a tomato extract would soon be created that would result in a concentrated pill to treat those suffering from a number of ailments. Bennett urged all Americans, but especially those on the move, to eat tomatoes regularly, “either raw, cooked, or in form of a catsup,” because he had also successfully treated “serious” diarrhea, indigestion and dyspepsia with tomatoes. Reports of his lecture were quickly disseminated across the nation in agricultural journals and mainstream magazines. This lecture, and the subsequent reporting of it, represents a dramatic shift in attitudes towards tomatoes. Just a few years before, discussions often focused on whether or not tomatoes were poisonous.¹

Indeed, between the 1830s and 1900, the tomato achieved tremendous popularity. The larger effect of Bennett’s lecture was less a discussion on the healthfulness of tomatoes, as Bennett’s report was virtually accepted without discussion, but rather the fact that it publicized dramatic new uses of tomatoes. The recipes printed alongside reports of Bennett’s work were diverse. They included sauces, stews, traditional preservation techniques catered to the tomato such as pickling, preserves, and ketchup, but also new ethnic dishes and new forms of preserving tomatoes for the off-season, including a tomato paste often referred to as the “Turkish Method.” Much like with sugar, cola, and numerous other foodstuffs, the widespread adoption of the tomato as a popular addition to the diet was preceded by its (false) claim to be a medicine.2

This denotes a dramatic change: during the middle decades of the nineteenth century, housewives and cooks refashioned American cuisine, adapting old cooking techniques to the tomato, but also adopting new forms of tomato cookery. One of the most significant innovations was the focus on techniques to preserve the tomato for off-season consumption, during the winter and spring, when food supplies were already low. Not only cooks, but also farmers sought to improve the taste, texture, size and appearance of tomatoes, and to transcend the seasonality of this soft and perishable fruit, especially by helping fuel the surging popularity of the fresh tomato. By 1865, Fearing Burr confirmed the remarkable successes of both cooks and farmers in The Field and Garden Vegetables of America, stating that “[the tomato] is now so universally relished, that it is furnished to the table, in one form or another, through every season of the year.” Thus while the canning industry was still in its infancy, and corporations had little control

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over America’s immense agricultural industries, farmers and cooks largely succeeded in transforming the tomato from a seasonal novelty to a year-round staple.³

For the most part, the tomato did not radically alter the basic structure of American meals: most Americans, like most people everywhere, continued to eat a diet consisting of meat or other protein, and complex carbohydrates – bread or potatoes. But, where hard vegetables like squash, onions, or cabbage often helped subsidize this bland and monotonous diet in the past, during the nineteenth century, as both culinary and agricultural technology expanded, soft vegetables like tomatoes increasingly served as a condiment on American tables, livening up bland or otherwise unsavory dishes. The tomato led the way in this regard, first being adopted by cooks as a substitute for existing preservation traditions like pickles and ketchups. By mid-century, the tomato was being featured in dishes entirely new to American cuisine, including most importantly, the rise of fresh tomato consumption. This rise in the popularity of the tomato took place in the context of a changing American cuisine, shifting away from the colonial foodways that were limited by British influence, poor transportation networks, and often, subsistence conditions. In cases where other ethnic and national cuisines were influential, including Dutch and German influences in the Mid-Atlantic, fresh, seasonal vegetables were often much more heavily integrated into the diet. In its place formed a much more diverse American cuisine, where even the tomato, a fragile, soft vegetable, came to form a significant part of the American diet.⁴

Bennett’s claims of the healthfulness of the tomato did not alone change the status of the tomato in American kitchens, but they did provide an impetus for these larger innovations in how

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tomatoes were cultivated and prepared. His views are a reflection of the changing status of the tomato in America during the early nineteenth century, and the reporting of his ideas provided exposure and space in American agricultural and mainstream journals for the popularization of new culinary uses and agricultural techniques related to the tomato. By the end of the nineteenth century, the canning and seed industries commercialized what farmers and housewives had created, propelling the tomato towards being one of the leading vegetables in America.

**The Tomato in the Kitchen**

The reporting of Dr. Bennett’s ideas concerning the healthfulness of tomatoes set off a torrent of recipes being printed in American agricultural and mainstream magazines. As one writer indicated, tomatoes “are used in various ways, either raw, with sugar, or stewed for sauce, or in fricasses [sic] and soups; for catsup or gravy, for meat and for pies or preserves, as well as for pickles and sweet-meats.” The most heavily disseminated recipes during the early nineteenth century were traditional recipes adapted to the tomato, though innovative recipes, including several ethnically influenced dishes, also appeared. This combination of the old and the new account for the dramatic rise in tomato consumption after 1830.5

It isn’t surprising that cooks adapted the tomato to traditional cooking. In many cases, the tomato was simply prepared, or preserved, in ways similar to other foods. In this sense, it served as a substitute for other ingredients. At the same time, the tomato allowed for some entirely new dishes to be introduced, including several ethnic dishes that previously were not served on American tables. This led to a more diverse and interesting diet, and provided cooks with more options in food preparation.

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Moreover, the success of the tomato was largely dependent upon cooks’ efforts to preserve the tomato for out-of-season consumption. Fresh tomatoes did become popular, and tomatoes were used in a number of dishes that would need to be consumed shortly after being prepared, but some of the most popular tomato-based foods during the nineteenth century were those that could be preserved. Tomato ketchups were by far the most popular of these foods, but tomato preserves, pickles and even a very early version of tomato paste all helped fuel the surge in tomato consumption by expanding the length of the year that tomatoes were edible.

Through the extensive use of sauces and ketchups, the nineteenth century tomato was, first and foremost, a condiment. But the transformation of perishable vegetables into tomato ketchups and sauces was not new with the tomato. Nonetheless, tomato ketchup and sauce quickly made an impact on the American diet by adding flavor and diversity to an otherwise mundane cuisine. Englishman Launcelot Sturgeon, a member in the Beef-Steak Club, one of London’s dining fraternities, wrote rather satirically in his 1823 essay “On the Physical and Political Consequences of Sauces,” that “the duty of a good sauce is, to titillate the capillaceous extremities of the maxillary glands, and thus to flatter and excite the appetite.” While Physicians warn eaters to avoid sauces because they can lead to overeating, said Sturgeon, this amounts to “the finest eulogium that could be passed on” sauces. Sauces have other benefits as well, including serving a pre-digestive function. But, in early nineteenth century America, there was a great need and desire for increased variety in the diet. As meat remained dominant on American plates, tomato sauces and ketchups proved vital to salvaging dishes that were overcooked, utilized poor cuts of meat, or generally lacked flavor.  

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This advantage of tomato sauce and ketchup, of course, was hardly new. Condiments of various kinds had long served the need to add flavor or cover other inadequacies in the traditional European diet. In the ancient world, Romans used garum – a liquid base consisting of fish entrails – along with honey and spices in a wide variety of sauces. In the Middle Ages, dishes were heavily seasoned with saffron, ginger, nutmeg, cardamom and other strong spices, often in a haphazard way with little attention to how the flavor of a spice would affect the dish. Beginning in the seventeenth century, a large part of the revolution in cuisine introduced by French chefs and cooks was a revolution in sauce making. The traditional sauces of the middle ages, typically very heavily-seasoned, were abandoned in favor of sauces that included fewer spices and more locally available herbs and vegetables. As one historian of European food points out, new French cuisine focused on “subtle new flavor combinations based on herbs, mushrooms, and savory elements.” French cooks created the foundation of a new form of cookery, called “the modular system of cooking.” This form of cooking was based on a small number of ingredients and sauces that, when combined, allowed for the preparation of a wide variety of dishes. As historian Ivan Day argues, this approach “afforded tremendous flexibility to the cook, giving him scope to improvise new dishes and combinations of flavors with minimum effort.” Thus by the middle of the seventeenth century, the foundation for modern French cookery, with the creation of many new sauces at its core, had begun. By the nineteenth century, these advancements had led to dozens, and hundreds by some counts, of new French sauces that were used in virtually every meal.\footnote{James Peterson, \textit{Sauces: Classical and Contemporary Sauce Making}, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, 2008), 3, 5, 12; Ivan Day, \textit{Cooking in Europe, 1650-1850} (Westport, CT: Greenwood Press, 2009), 2, 11-12.}

The culinary revolution that began in seventeenth century France also affected British cuisine. British culture, which for a long time was reliant upon sauces made from what one
nineteenth century critic dubbed “the eternal melted butter,” became more diverse. Many new sauces emerged during the late eighteenth century, for example, many of which had vinegar as their primary ingredient. The focus on vinegar-based sauces fits with another key change in British cookery during the eighteenth century: the rising popularity of pickles. While today we usually think of a pickle as a form of cucumber, early pickles were far more diverse. This trend, which was derived from the custom of immersing a solid food into a vinegar or salt solution in order to preserve it for later use, eventually led to the emergence of ketchup. While the liquid remaining after the pickling process was usually discarded, eventually these liquids were used as sauces, or ingredients to sauces. In some cases, in fact, the vegetable or fungi (mushrooms) solid, was actually strained out and the remaining liquid was bottled. These strained, thin sauces, or essences, became known as ketchup (or catsup).  

The increasing popularity of pickles and ketchups in British cookery is displayed in eighteenth century British cookbooks, many of which were distributed (and later even printed) in the American colonies. In the well-known *The Compleat Housewife*, published in 1739, E. Smith provides numerous recipes for pickles, including those made from mushrooms, walnuts, cucumbers, beans, and red cabbage. She also gives a recipe “To make English Ketchup,” which was a fish-based sauce with anchovies and shallots. Likewise, the 1769 edition of *The Experienced English Housekeeper* gives several ketchup recipes, including two for walnut ketchup, a popular early ketchup variation, as well as others for mushroom ketchups. Another recipe, indicating the usefulness of ketchup as a preserved food item, was a ketchup that contained anchovies entitled “To make a Catchup to keep Seven Years.”

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The eighteenth century innovations in pickling and making ketchups in Britain were scarcely mentioned in many of the cookbooks published or distributed to America during that period. Amelia Simmons’ *American Cookery* included no recipes for ketchup, and very few for pickling, including one for pickled cucumbers. Yet, the continued existence and printing of British cookbooks in America ensured that British culinary trends would eventually make their way across the Atlantic. Hannah Glasse’s *The Art of Cookery Made Plain and Easy*, for example, a cookbook first printed in England in 1747 and reprinted in the United States in 1805, gave numerous recipes for pickled walnuts, cucumbers, asparagus, peaches, French beans, cauliflower and numerous other foods. Likewise, Glasse provides an American audience with two different recipes for mushroom ketchup.  

The initial development of both pickles and ketchups did not include the tomato. The first known mention of tomato ketchup was a recipe printed in James Mease’s * Archives of Useful Knowledge* in 1812, published in Philadelphia. Of note, tomato ketchup, from the outset, was unique among ketchups in that it was often not strained, and it was boiled down to produce a much thicker sauce than most other forms of ketchup. The 1820s appear to be a turning point when American and English cookbooks began regularly publishing tomato ketchup recipes, along with numerous other tomato-based dishes and sauces. Maria Eliza Rundell’s 1808 edition of *A New System of Domestic Cookery*, along with her 1823 edition of *American Domestic Cookery*, which was almost entirely a reprint of the former, offered numerous recipes for ketchups and pickles, but failed to include any that included tomatoes. William Kitchiner’s *The Cook’s Oracle* included tomato ketchup in its 1825 American printing, as did Mary Randolph’s first edition of *The Virginia Housewife*, published in 1828, and often regarded as the first truly

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“American” cookbook. In the decades that followed, tomato ketchup was a staple of most cookbooks, and increasingly, recipes for tomato ketchup became very prominent in agricultural and mainstream periodicals.\textsuperscript{11}

This suggests several things about the emergence of tomato ketchup. First, it seems highly probable that tomato ketchup originated in the United States, and was later imported back to England. While it is possible that recipes existed in England prior to 1812 that have not yet been located, this would mean that tomato ketchup, highly influenced by British culinary ideas, nonetheless emerged as a distinctly American interpretation of the British ketchup, and was indeed a good enough food to be exported back to Britain. Second, this points to tomato ketchup as an important solution to the seasonality of the tomato – a clear way of preserving the highly perishable tomato for off-season consumption. As the most popular tomato product or dish in early to mid-nineteenth century America, tomato ketchup, partly because it could be enjoyed throughout the year, helped fuel the expansion of tomato consumption in the United States.

The growing popularity of tomato ketchup may also suggest an increasing expectation in American cuisine that food be more diverse and less bland. As food historian Andrew Smith notes, ketchup served “to add zest, color, and flavor to other foods; and to camouflage the taste of unsatisfactory, unfamiliar, or monotonous foods.” Ketchup, then, emerged as a way to add variety to otherwise monotonous cuisine that was highly dependent on pork, beef, corn, and other staple foods. Cooks sought not to replace these foods, but to use the tomato as a condiment to these foods, to make dishes more flavorful and more diverse.\textsuperscript{12}


\textsuperscript{12} Smith, \textit{Pure Ketchup}, 25.
The recipes for tomato ketchup also indicate the diversity in flavors that could be achieved by mixing tomatoes with a variety of ingredients, further expanding the possibilities of American cuisine. About the only required ingredients were tomatoes and salt. But recipes also called for the addition of chopped onions, mace, and black pepper. One of the more popular recipes of the 1830s, offered by *The Cultivator*, among other journals, included “cloves, pepper and nutmegs” to the basic mix of tomatoes and salt. Much like the recipes for sauce, such a recipe would have a complex taste profile, with both salty and sweet ingredients. One of the more complex ketchup recipes comes in an 1835 article describing Bennett’s lecture. In addition to tomatoes and salt, this recipe calls for horseradish, mustard seed, ginger, pepper, cloves and mace. It also suggests that some people liked to add onions or garlic. Another called for the addition of sliced onions, black pepper, cayenne, mustard and cloves. After cooling, a large quantity of strong cider or wine vinegar was to be added as well. Tomato ketchup could be made in a wide variety of flavors - sweet, salty, and spicy - catered to the desires of the cook and the types of dishes the ketchup was to flavor. This inventiveness of American cooks is easily forgotten in the modern age when corporate-produced tomato ketchup has been reduced to a predictable uniformity,\(^1\)

At least by the mid-nineteenth century in the United States, ketchup was effectively wedded to tomatoes. While some continued to make it with other ingredients, perhaps most notably mushrooms, tomato ketchup was more prominent in cookbooks and agricultural periodicals, and was advertised for sale far more than any other ketchups. As one journal noted,

“it is much better than mushroom ketchup for all kinds of culinary purposes.” Cookbook Author Lydia Marie Francis Child echoed this sentiment in 1830 when she proclaimed that “the best sort of catsup is made from tomatoes.” During the nineteenth century it became a staple of the American diet across the country, as agricultural journals and cookbooks in the South, New England and the Mid-West all offered a wide variety of tomato ketchup recipes to the consuming public. It was also seen as a possible way for farmers to deal with excess tomatoes. As Edward James Hooper argued, “there can be no loss on this vegetable, for raise as much as you may, what is not sent to market can be converted into catsup, and will bring a price that will fully compensate the gardener.” Such an attitude helps explain the large quantity of ketchup available for purchase on the open market. Within just a few decades of its introduction, tomato ketchup emerged as an important way of preserving tomatoes and thus expanding access to them throughout the year, but also as important part of the expansion of the American diet and the evolution of American cookery.14

Tomatoes were also widely featured in sauces, as they too, promised to add new flavors to the American meal. One recipe in 1828, for example, called a dozen tomatoes to be stewed, with two teaspoons of brown sugar, some pepper, and a tablespoon of flour, thus thickening the sauce. The recipe also indicates that “some persons prefer pounded cracker instead of flour.” In many cases, too, sauces were to be prepared much like gravy. Overall, sauces could be flavored to be sweet, with the addition of brown sugar, or spicy, with the addition of pepper or peppers, or in the above case, a little of both. Yet, the tomato in sauce form did not address the need to transcend the seasonality of the tomato. In most cases, tomato sauce would need to be consumed

within a few days of it being prepared, and even then, only if it was kept in a “cool, dry place.” Thus tomato sauces, without vinegar, or copious amounts of salt, could only be used during a short time of the year. Owing to its similarity to British culinary tradition and its ability to expand the seasonality of the tomato, tomato ketchup emerged as the foremost use of tomatoes as a condiment.\footnote{Virtues of the Tomato,} \textit{Christian Register and Boston Observer} 14:54 (Boston: 1835), 216; “Tomato Sauce and Butter,” \textit{Maine Farmer} 18:36 (Augusta, ME: 1850), 1. See also “Tomato sauce,” \textit{The New England Farmer, and Horticultural Register} 7:22 (Boston: 1828), 174; “Love Apple – Tomato,” \textit{The Genesee Farmer and Gardener’s Journal} 2:14 (Rochester, NY: 1832), 107.

Still, there were numerous other methods for expanding the time of year that the tomato could be consumed. For the most part, these were not new methods of preservation. For much of the nineteenth century, tomato pickles, another borrowed idea, were common, especially in the South and Mid-West. As early as 1827, pickled tomatoes were mentioned as a dish favored among some in England. It soon made its way to America, where tomatoes were pickled either ripe or green, the latter perhaps indicating a need to find a culinary use for unripe tomatoes. Again, the presumed medicinal advantage of tomatoes appeared. Eliza Leslie, author of numerous cookbooks, went so far as to exclaim that “if kegs of these tomatoes were carried to sea, and liberally served out to the crew, the scurvy would be less frequent, even on long voyages.”\footnote{Kitchiner, \textit{The Cook’s Oracle}, 345; See, for example, A Boston Housekeeper, \textit{The Cook’s Own Book} (1832), 222-3; Eliza Leslie, \textit{Directions for Cookery…} (Philadelphia: Carey & Hart, 1840), 223; Thomas G. Fessenden, \textit{The New American Gardener} (Boston: J.B. Russell, 1828), 291; Eliza Leslie, \textit{Miss Leslie’s New Cookery Book} (Philadelphia: T.B. Peterson, 1857), 400.} Other dishes, including tomato preserves, and jelly were often made with excess tomatoes. A recipe for tomato figs, by a Mrs. Steiger was actually deposited at the U.S. Patent Office in July of 1841, and made its rounds through the agricultural press. The recipe promised that “they keep well from year to year, and retain surprisingly their flavor, which is nearly that of the best quality of fresh figs.” The tomato could also be preserved for year-round consumption by turning it into a wine or syrup. By the late 1840s, the popularity of many of these preservation
techniques was great enough for the Saturday Evening Post to publish an article discussing the progress made in these efforts. This article mentions not just tomato ketchup, which by then nearly all Americans would have known about, but also speaks of the pleasures of tomato wine, syrup, preserves, and even pies.\(^\text{17}\)

Significant effort was also made towards preserving tomatoes in such a way as they could be transformed into a sauce or stew at a later date. A woman from Brooklyn, NY wrote to The Cultivator in 1844, offering a recipe for dried tomatoes, using a common preservation method for fish and other foods. A peeling the tomatoes and cutting them in half, her recipe said to “lay them on plates and put them into the oven after the bread is drawn; if a good oven, by the time it is cool, or in 48 hours, they will be perfectly dried.” After that, she said, “put them into paper bags and keep in a dry place.” They could then be rehydrated for “a mince or stew” simply by dipping them into cool water. As an added benefit, she said, they “are very good to eat out of hand in the dry state,” making them serve a similar function to sun-dried tomatoes today.\(^\text{18}\)

The appeal of dried tomatoes may well have been limited (one of the motivations for early canning was finding alternatives to drying meats, fruits, and vegetables) and so it is not surprising that others provided recipes for preserving tomatoes “fresh.” In a recipe lifted from The Annals de la Societé D’Horticulture de Paris, the Workingman’s Advocate said that


tomatoes could be preserved simply by placing them in an earthen pot covering them with water that had a sufficient amount of salt added “to make it strong enough to bear an egg.” They were said to be able to keep for more than a year in such a state, and when they were desired in the kitchen, they simply needed to be soaked in fresh water for several hours to remove the remnants of the brine. The result would hardly be called fresh by modern standards, but tomatoes preserved in this way would have been soft and juicy.19

The nineteenth century also saw the first version of what might be described as tomato paste, a concentrated version of tomatoes, preserved in such a way as to allow for thinner tomato sauce to be created months, if not years, after the tomato was processed by adding water. One such method, dubbed the “Turkish Preparation,” as it supposedly originated in Turkey, called for taking the juice of the tomato together with salt, and evaporating it until it created a paste. The paste, the recipe said, would “preserve the true flavor of the fruit for several years.” A similar recipe, published in the Southern Planter, stated that “a bit [of the paste] not larger than a Lima bean will be sufficient to flavor the soup of a family of twenty persons; and a much smaller quantity for sauces.” Yet another recipe, from a woman in Georgia, named “Portable Catsup, or Tomato-Jelly,” likely resembled a bouillon cube. It called for straining the juice of the tomato, adding cloves, pepper, horseradish, mace, and shallots, and then baking the tomatoes, and finally drying them in the sun until they form into a hard cake. Afterwards, the cook was to cut the dish into two-inch squares. These squares, “deposited in a small quantity of warm water, will give a flavor to gravies or soups, equal to fresh Tomatoes.” In many ways, these recipes are a logical extension of the development of ketchup. As tomato ketchup was often viewed as a sort of tomato concentrate, where a small amount could season an entire dish, the tomato paste created

using the “Turkish Method,” could do so while taking up less space and without the need of sealing in a jar.  

In the 1850s, when the commercial canning industry was in its infancy, agricultural journals even encouraged families to can their own tomatoes using a process almost identical to that used by early industrial canners. This mixture of using industrially produced metal cans (in contrast to the glass “mason jars” later commonly used in home canning) combined with home-grown tomatoes offered families a potentially affordable method for preserving their tomato surplus for off-season consumption, thus giving families an added incentive to grow this seasonal crop. After filling a three-quart can with tomatoes, the cook was instructed to solder on the top, leaving only a small hole in the lid. After heating the can over a fire, the cook would finally seal the small hole, leaving a finished product not unlike the canned tomatoes that would soon be available in urban stores and mail-order catalogs. Another recipe, published in 1853, asserted that by canning in glass, rather than tin, a rather expensive material, would “bring it within the means of all.” After filling a glass bottle with cooked tomatoes, the bottles were first to be corked, and then to be covered in wax, thus protecting the jars contents from the air.

The major impetus for cooks experimenting with tomato recipes through much of the nineteenth century was a desire to overcome the brevity of the tomato harvest, a serious impediment to its growing popularity. Mostly by adapting existing culinary technologies, but also by devising new ones, at least by the 1870s, cooks had largely overcome the obstacle of seasonality, making preserved tomato products available on the kitchen table year-round.

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A further break on the popularity of the tomato at the onset of the nineteenth century was its alien appearance on the American dinner table. During the eighteenth century, the tomato was integrated into the American diet primarily as a substitute for other foods, by employing traditional methods of preparation, as in tomato ketchup and pickles. One recipe, for example, called for tomatoes to be “stewed with a little sugar, like cranberries.” In this case, the tomatoes were said to be preferable “as they require less sugar.” Tomato pickles, a favorite on many Americans’ tables, were a carryover from the English tradition of pickling a wide variety of vegetables, including cucumbers. Elsewhere, housewives directed readers to substitute tomatoes for peach preserves in years that the peach crop failed. “The flavor is almost the precisely the same,” one writer noted, “and is altogether an excellent article for the tea table.” Tomatoes could also be substituted for peaches in pies and tarts. Likewise, it was suggested that tomatoes be prepared raw, “sliced up in vinegar, like cucumbers, with a little pepper and salt.” Thus, as in the case of pickles, the tomato was considered an equal, if not better, ingredient for a traditional dish. In other cases, such as substituting tomatoes for peaches in preserves, it was seen as a valid substitute for when those crops, often more vulnerable than the tomato, were not available. And this substitution of one ingredient by another was very common in the US as in the extraordinary wide variety of vegetables and fruits that went into homemade beer and other alcoholic beverages.²²

The tomato also became a popular ingredient in soups during the nineteenth century. Much like with other dishes, tomatoes did not revolutionize soups – plain tomato soup or creamy tomato soup were not mentioned in nineteenth century recipes. Instead, much like with tomato sauce and ketchup, tomato soup was integrated into preexisting recipes when cooks added

tomatoes to soups that included meat or other vegetables. For example, Edward Hooper provided two recipes for soups that included meat and tomatoes. Likewise, Elizabeth Putnam’s 1850 edition of *Mrs. Putnam’s Receipt Book and Young Housekeeper’s Assistant* included a recipe for tomato soup that called for tomatoes alongside veal, onions, carrots, and turnips.²³

The tomato, however, did empower American cooks to introduce new dishes onto American tables, often with new ethnic influences. Not only was American cuisine expanded by the introduction of a new major foodstuff, but the tomato also opened the door for new styles and types of dishes. Many of these new dishes borrowed from ethnic cultures. Dishes like “Tomatoes en Salade,” “Tomatoes Fricandeau,” and tomatoes cooked according to the “Spanish Method,” reflected the continued influence of French and Spanish cuisine during the 1840s and 1850s. Likewise, with the growing popularity of okra, especially in the South and Mid-West, several recipes for gumbo, of which tomatoes form a vital component, were distributed during the period. A dish thought to have its roots in West Indies, it became increasingly popular in areas of French influence, such as New Orleans, but recipes for gumbo were distributed at least as far away as Cincinnati. These dishes challenge the idea that American kitchens were insular and conservative, and instead suggest that, at least by the nineteenth century, American cuisine was open to outside influences.²⁴


In their efforts to transcend the seasonality of the tomato, cooks found numerous ways to integrate the tomato into American cuisine, adapting the tomato to traditional American culinary ideas. But by bringing the tomato into American kitchens, American cooks became more experimental and open to cooking ethnically and culturally diverse foods. The tomato integrated itself so fully into the American diet in no small part because it could be prepared in such different ways. “It is among edible vegetables,” reported the Saturday Evening Post in 1849, “something like India-Rubber or Gum-Elastic and Gutta-Percha are for the purposes for which they are so extensively and variously used.” Put simply, the tomato could be molded and shaped by the cook, making it an exceptionally versatile foodstuff.25

Yet, adapting the tomato to the culinary traditions of the rutabaga or the squash was not enough. Through the early nineteenth century, continued fears that tomatoes might be poisonous or unhealthy led most to avoid eating uncooked tomatoes, and thus reducing the desirability of a long season of fresh tomatoes. Also simply because fresh vegetables were so rare (and the dangers of spoiled vegetables and fruits so great), there was a strong bias in favor of cooked (we might even say overcooked) vegetables as in stews. By the middle of the nineteenth century, however, these fears abated, and Americans began celebrating the fresh tomato and with this, of course, the demand for extended season tomato crops. Edward Hooper remarked in 1840 that “the tomato has become a great favorite sliced and seasoned as we do the cucumber, and has the advantage of being quite wholesome.” Elizabeth Putnam provided a recipe for eating raw tomatoes dressed with salt, pepper, and vinegar. Sarah Hale provided a similar recipe, labeling it “Tomatoes en Salade.” Thus, while cooks labored to adapt the tomato to traditional culinary and preservation techniques, they could not address the growing demand for fresh tomatoes. Though cooks made some efforts to preserve fresh tomatoes, as the recipe from the Workingman’s

25 “For Housekeepers,” Saturday Evening Post, 4.
 Advocate attests to above, increasing access to fresh tomatoes was largely outside the abilities of cooks. This desire, however, influenced farmers to make efforts to improve upon available tomato varieties, develop long-season tomatoes, and utilize agricultural techniques to expand the seasonality of the tomato.26

The Tomato in the Fields

Since the techniques used by cooks to preserve tomatoes required processing, and thus changing the taste, texture and appearance of tomatoes, culinary tactics could do little to address the increased desire for fresh tomatoes. By the mid-nineteenth century, as Americans were beginning to celebrate the fresh tomato, and with this, demand for extended season tomato crops, farmers responded in earnest, cultivating improved tomato varieties and utilizing existing agricultural technologies to grow better, and earlier, tomatoes. So strong was the demand for out-of-season tomatoes that the Genesee Farmer and Gardener’s Journal found it newsworthy to report the presence of tomatoes at Philadelphia markets as early as July 10 in 1833, a fairly remarkable feat. Several years later, in a rare early mention of greenhouse tomatoes, The New England Farmer reported that “a few tomatoes of green house culture, have made their appearance” at Boston’s Faneuil Hall Vegetable Market in July 1837. While it would be decades before greenhouse tomatoes were regularly available in American urban markets, long after greenhouse flowers and other products became available, the increased cost associated with greenhouse production nonetheless demonstrates a strong desire for early fresh tomatoes.27

Horticultural and agricultural journals also regularly listed prices for produce available at urban markets, presumably to give farmers information on how much profit to expect for their

26 Hooper, The Practical Farmer, Gardener and Housewife, 496; Putnam, Mrs. Putnam’s Receipt Book and Young Housekeeper’s Assistant, 67; Hale, The Ladies’ New Book of Cookery, 251.
own market crops. Today, these numbers offer another indication of the seasonal nature of many vegetables, including tomatoes. For example, at Faneuil Market in 1833, tomatoes dropped from 20 cents per dozen on August 7, to 12.5 cents per dozen on August 14 and 21. In 1835, the figures were even more telling: on July 29, tomatoes cost fifty cents per dozen. By August 19, the price had dropped in half, to twenty-five cents. On August 26\textsuperscript{th}, the price had dropped yet again, to twelve and one-half cents per dozen. Finally, by September 9, the price bottomed out at six and one-half cents per dozen. In the decades after 1820, a viable market for tomatoes emerged in urban areas, and the profitability of producing tomatoes for market depended largely upon harvesting tomatoes early in the season, when the prices were high. During this period, Edmund Morris, a former Philadelphia businessman, escaped the city for the New Jersey countryside, purchasing a ten-acre farm to live on and cultivate. Devoting one of his ten acres to tomato production, Morris very quickly understood the seasonal nature of the Philadelphia and New York vegetable markets and the dramatic advantage of an early harvest:

“For the first few baskets of early tomatoes I sent to market, I obtained two dollars per basket of three pecks each. Other growers coming in competition with me, the price rapidly diminished as the supply increased, until it fell to twenty-five cents a bushel. At less than this the growers refused to pick the [tomatoes]. … As the season advanced the supply diminished, and the price again rose to a dollar a basket, the demand continuing as long as any could be procured.”

These farmers, ever competitive capitalists, sought to maximize their profits, and thus sought new ways of achieving early (and late) tomatoes when the prices were high, and often let tomatoes rot on the vine when prices were at their lowest. Such was the profit potential of early tomatoes, stated Morris, that many New Jersey vegetable farmers “emigrated to Virginia for the purpose of taking advantage of the earlier climate of that genial region.” From the 1840s until the onset of hostilities between the Union and the Southern states, these farmers took advantage of improved transportation routes to the cities and were “rewarded by fabulous prices, from the
receipt of which large fortunes resulted” simply by providing Philadelphia, Washington D.C., and other northern cities with tomatoes and other vegetables a mere two weeks earlier than their local farmers could provide. Without viable home markets to sell tomatoes to after their period of monopoly in the urban markets, most of these Virginia farmers simply let their produce rot on the vines for the rest of the summer and fall.  

This trend continued through the end of the century. In 1889, Thomas Baird, a Kentucky farmer, reported to the *National Stockman and Farmer* that the tomato was “the most profitable garden crop [he had] ever offered to the market,” in part because he was successful at getting an early crop to market. Likewise, despite heavily criticizing the early varieties as poor tomatoes, one farmer reported in the *Michigan Farmer* in 1890 that “near large markets, with a demand for early fruit at good prices, some of these early sorts … may be grown with considerable success.” N. Hallock, a market farmer on Long Island, reported similarly that despite a smaller crop of tomatoes when aiming for the early market, “the first few pickings for market may bring a price that will over-balance the larger crop” that could be obtained later in the season. Thus the early crop remained an ideal for many farmers through the end of the nineteenth century, especially those close to growing cities and metropolitan areas.  

Farmers utilized a variety of techniques to get these early tomatoes and to increase their profits. Although many correspondents pointed out that a majority of farmers were not doing enough to improve tomato culture, nearly all of them pointed out that significant progress was

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within reach of farmers. One correspondent, writing for the *Maine Farmer*, conceded the difficulties in raising tomatoes in his state: “it is well known by those who raise tomatoes in Maine, that the season is rather short for them, and that a portion of them do not get ripe, unless artificial means be used to help them along.” In other words, in extreme climates, farmers understood that getting early tomatoes was a necessity just to guarantee a crop of tomatoes at all. Elsewhere, however, farmers were left to decide for themselves whether or not to utilize techniques to obtain early tomatoes. Most correspondents felt that many farmers, particularly early in the nineteenth century, were not proactive in trying to obtain early tomatoes, or to improve their stock in general. James Garnett, writing for the *Farmer’s Register* in 1841, observed that

> “strange to say, I have never yet met with any farmer or gardener who had ever taken the trouble, little as that would be, to ascertain how either tomatoes or peas could be rendered most productive; or which among our numerous varieties of the latter ripens the soonest; or which will yield most…”

William Chorlton, likewise, writing in the *Horticulturalist* in 1855, argued that, “Wherever the climate is sufficiently suitable to perfect the [tomato], it seems to be universally a favorite; and yet there is perhaps no other vegetable which is dressed in the kitchen, that represents so nearly the normal condition.” Chorlton, like so many agricultural and horticultural writers, beats the drum of improvement. Perhaps his strongest message is to advise farmers to improve their own tomato strains: by waiting until their plants are in full bearing, he argues that they should “pick from the very best, the most desirable fruit, and save them for seed.” Another writer, certainly valuing the earliest crop, advised the readers of the *Southern Cultivator* to “select the earliest and ripest” tomatoes for seed-saving.30

Certainly throughout much of the nineteenth century, tomato culture remained woefully behind many other horticultural and agricultural pursuits. As late as the 1840s, many seed catalogs still only offered a single variety of tomatoes. This was during a period when a dozen or more varieties were easily obtainable for a wide variety of vegetables. By the end of the 1840s and into the 1850s, several new varieties were introduced, but advancement remained slow. These varieties included the Large Red, the Large Red Smooth, Large Yellow, Small Yellow and Cherry Tomatoes. Simply named, with a clear emphasis on size, and in the case of the Large Red Smooth, by far the most prestigious of tomatoes, on shape and appearance, these varieties did little to address the desire for early tomatoes. This should come as no surprise. The tomato, a New World crop relegated to ornamental gardens even throughout much of Europe until relatively recently, was centuries behind other vegetables like the squash and turnip in breeding.31

By the 1860s, however, a host of new varieties were introduced, some of which promised earliness as a trait. In 1861, Henry A. Dreer, a Philadelphia seedsman, offered eight varieties for sale, including the Mammoth, an extra large tomato, the Myer’s Dwarf red, a plant noted for its short bushy growth, and the Extra Early Red, a plant known for its earliness. In 1865, David Landreth and Son, another Philadelphia seedhouse, offered a variety by the same name, noting


31 For catalogs listing only a single variety, see G. Thorburn & Son, Catalogue of Kitchen Garden, Herb, Flower, Tree and Grass Seeds (New York: Clayton & Van Norden, 1825), 14, STCC; John B. Russell, Catalogue of Kitchen Garden Herb, Tree, Field and Flower Seeds (Boston: New England Farmer Office, 1827), 15, STCC; Joseph Breck and Co., Catalogue of Vegetable, Herb, Tree, Flower and Grass Seeds (Boston: 1840), 12, STCC; Charles H.B. Breck, Catalogue of Vegetable, Herb, Tree, Flower and Grass Seeds (Boston: Tuttle & Dennett, 1842), 8, STCC. For early varieties listed for sale, see David Prouty & Co., Catalogue of Garden, Flower, Field and Grass Seeds (Boston: 1851), 95, STCC; Comstock, Ferre and Co., Descriptive Catalogue of Garden Seeds Cultivated and Sold at the Wethersfield Seed Garden (Wethersfield, CT: 1852), 42-3, STCC; James M. Thorburn, Thorburn’s Catalogue of Kitchen Garden Seeds (New York: William S. Dorr, 1853), 6, STCC. The National Agriculture Library’s seed catalog is extensive. I examined all of the available seed catalogs from prior to 1870. From 1870 through 1957, I selected boxes covering the letters L through O, typically in five-year increments. This allowed me to focus in on several seedhouses that were of great importance to the tomato trade, including Livingston & Co., while also tracing the offerings of numerous other seedhouses over time.
that it was a variety first cultivated in France. In 1866, the Springfield, Missouri seedhouse of Benjamin K. Bliss offered two varieties noted for their earliness, the Early Apple and Extra Early Red. While the latter was “the earliest grown,” it was both unevenly shaped and “deeply furrowed.” The Early Apple, on the other hand, was both “round” and “smooth,” thus offering a finer quality early tomato. Although the focus was shifting towards earliness, farmers (and consumers) were not willing to give up their aesthetically pleasing tomatoes for the earliest crop.  

By the end of the 1860s, the quantity of tomato varieties offered to growers had expanded vastly, with many seedhouses offering ten or more varieties, and at least one planting guide, Fearing Burr, Jr.’s *The Field and Garden Vegetables of America*, listed eighteen varieties. In some ways, these varieties were beginning to be divided into various types of tomatoes, based on their use, their color, and in their period of growing time. For example, the catalog of Edward J. Evans and Co. for 1868 offered a total of sixteen varieties. Of these, four were labeled as early, and three as late season tomatoes. Four of the others were new varieties, in which the catalog offered little detail. The point here was extending the season from early summer to mid-fall.  

Still, earliness remained a major factor in the growing practice and business of creating new tomato varieties. By no means the only variable, the early tomato became a distinct category of tomato by the 1860s and 1870s. In many cases, at least some negative aspects, including smaller size and less attractive appearance, were overlooked in the name of getting tomatoes to the market and kitchen table as quickly (and for as long) as possible.  

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harvest timing, farmers focused increasingly on cultivating varieties that were valued for the tomato’s weight, shape, color, and availability, rather than an aesthetic object of look, taste, and feel, reflecting the fact that tomatoes had become a market rather than personal garden crop. In other words, already by the 1860s and 1870s, before large corporations began dramatically reshaping the tomato, farmers were willing to ignore the aesthetic and taste qualities of the tomato in favor of more marketable and profitable varieties.

Despite their progress, many farmers and agricultural journalists believed that tomato culture, and the development of tomato varieties in particular, continued to lag far behind other crops. One farmer from Glen Cove, NY, on Long Island, asserted in 1884 that “except in catalogues, there is not much difference in the earliness of the different varieties, the fewness of seeds in the fruit, or, in fact, several other commended points of excellence.” In 1887, another farmer argued that there were only a few varieties worth buying, though he admitted that much progress had been made given that “a few years ago the tomato consisted of little more than a rind with seeds in the hollow centre.” Liberty Hyde Bailey, after working a joint project between his own Cornell Extension Office and the Michigan Agricultural College, offered an explanation, stating that “the tomato has been in general cultivation so short a time that varieties are not yet fixed.”

While these criticisms were common, even those critical of tomato culture and tomato variety development often celebrated the work of Alexander Livingston, an early tomato cultivator that played a critical role in the development of many of the earliest and most marketable tomato varieties. Even The Cultivator, which dismissed the vast majority of tomato

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varieties available on the market in 1884, celebrated Livingston’s Perfection as “the most even and symmetrical of all tomatoes, bright red and solid, and the plants [are] heavy croppers.” Born in 1822 on a farm near Columbus, Ohio, Livingston began working for a gardener when he was twenty-one years old, when he became interested in plant breeding. When he was twenty-four, he leased one hundred and thirty acres to farm and grow seed. He operated this small venture while conducting numerous experiments and studies of plants with the aim of creating improved varieties, particularly of the tomato. His goal, “from the first was to grow tomatoes smooth in contour, uniform in size, and better flavored.” After fifteen years work, however, Livingston felt that he had not had any success, so he decided to change his methods. Instead of crossing varieties to try to breed out undesirable traits (while breeding in desirable ones), Livingston searched for “leadings”, or special tomato plants in his fields. His focus shifted away from looking for “specimen tomatoes” and towards finding desirable tomato plants.\footnote{W.F., “Tomatoes – Varieties and Culture,” The Cultivator and Country Gentleman, 796; A.W. Livingston, Livingston and the Tomato (Columbus, OH: A.W. Livingston’s Sons, 1893), 9-15, 20-3.}

These efforts paid off. In 1870, after more than two decades of experimenting and studying the tomato, Livingston released the Paragon Tomato, a variety that Livingston dubbed “the first perfectly and uniformly smooth tomato ever introduced to the American public.” For decades, hundreds of seedhouses offered the Paragon variety in their catalogs, offering near universal praise for the variety. Livingston’s next introduction came in 1875, as he found and cultivated a variety that he believed met the desires of Western market gardeners for an early, purple tomato. Unlike early varieties before it, Livingston believed that the Acme represented the “earliest of the uniformly smooth varieties.” Livingston went on to produce more than a dozen
distinct varieties before his death in 1898, whereupon several of his sons carried out the business well into the twentieth century.³⁶

Despite the overwhelming success of many of Livingston’s creations, perhaps his greatest feat was to reconceptualize tomato varieties as serving particular functions. He sought tomato varieties that served well defined needs and filled specific market-niches. In his 1893 memoir and tomato-growing guide, Livingston articulated this very clearly. He defines six basic types of tomatoes, those for shippers, home use, market gardeners, canners, catsups and preserves, and greenhouses. More to the point, in explaining the development of his own varieties, he showed how he sought out new varieties based on their ability to fulfill specific market needs. For example, Livingston found the Perfection, released in 1880, because he “was urged to secure a new tomato because a good shipper was in demand.” Likewise, the Beauty, released in 1886, came after he “discovered that nearly all market gardeners, at least west of Pennsylvania, were determined to have a purple-colored tomato for their trade.” Thus, for Livingston, the development of tomato varieties was intricately linked to the very specific markets of farmers and consumers. Their development was not to be a haphazard effort or driven by Livingston’s own personal taste or abstract goal of perfection but by the specific desires of tomato farmers, canners, and consumers. One of Livingston’s leading goals, much like those before him, was to create varieties that could fulfill the demand for early tomatoes but he also sought to deliver seeds that produced tomatoes that had what later might be called “shelf appeal” in urban retail markets. These varieties included the Acme, Perfection, and the Aristocrat (released in 1893).

Livingston’s keen sense of market demand made him the most important tomato cultivator and seedsman in nineteenth century America and helped fuel the popularity of the fresh tomato.\footnote{Livingston, \textit{Livingston and the Tomato}, 28, 31-2, 42, 64-5.}

In addition to seed selection, farmers utilized a number of tactics to get early tomatoes. In Maine, it was suggested that farmers could get the earliest possible tomatoes that would ripen before the frost by clipping off large portions of the top of each tomato plant early in the season. The argument in favor of this practice was that “30 per cent (one-third) of the tomatoes grow within eighteen inches of the ground, and 90 per cent of the vine, containing 10 per cent of the fruit, grows above this point.” Thus, by cutting off the tops of the plants, the plants would not waste important energy on growing, and thus could devote themselves to ripening their fruit. Others, hoping to harvest multiple waves of ripe tomatoes, used clippings from full-grown plants from their seed garden to plant tomatoes at several times during the year. By doing so, the season of the tomato could be extended through the fall and even, possibly, into the winter.\footnote{“Hurrying Up the Tomatoes,” 1; “Cultivation of Tomato,” \textit{The American Farmer, and Spirit of the Agricultural Journals of the Day} 5:15 (Baltimore: 1843), 117.}

By far the most prominent tactic used to create a longer tomato season, especially in New England, the Middle Atlantic and the Mid-West regions, was the use of hot beds. In 1835, a writer for \textit{The Cultivator} urged farmers to take advantage of hot beds: “Hot beds, we are aware are very little employed by farmers; yet many would employ them, we believe, if they were aware of their advantages, and knew how to construct and manage them. – The expense is trifling.” Indeed, the technology of the hot bed was quite simple. In its most common form, a hot bed consisted of a wooden frame of about 8 feet wide and between three and four feet wide, with the longer pieces of wood made of slightly different widths, giving the frame an incline. Pieces of glass were then laid on the frame, creating a protected area for plants to be cultivated. The frames were then laid in a bed created by digging around 15 inches deep, and then covered with
30 inches or more of manure. Some correspondents called for covering the manure with a layer of soil (Illustration 1).  

![Illustration 1](image)


Thus, “the principle requisites” of building a hot bed were “a bed of horse dung of proper size for supplying heat by its fermentation, a bed of earth placed upon this, to sow the seeds in; a frame to hold this early and to support the sash [window glass]; and a sash of lights to place of the whole, to protect the young plants from the cold and throw off the rain.” All in all, *The Genesee Farmer* noted, “a bed of the size above stated can be made by a man in less than half a day, and the frame and sash may be made in a day by a common carpenter.”

More important, this small investment, farmers were told, could greatly increase their ability to grow a wide variety of vegetables, salad greens, and other crops for early harvest. Some crops, such as lettuce, could be raised in its entirety in a hot bed. Other crops, including tomatoes, would only be cultivated in hot beds until all fear of frost had passed, when they were transplanted into the open field. According to one journal, beginning plants and hot beds and transplanting them following the last frost enabled farmers to gain several weeks of time on Mother Nature. In the Mid-West, *The Western Farmer and Gardener* instructed their readers to

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sow tomatoes in hot beds during the first half of March, and to transplant them by the middle of May. *The Cultivator*, based in Albany, New York, advised its readers to plant their tomatoes during the second half of March. While many farmers in the South chose against the use of hot beds given their warmer climate, the editor of the *Southern Agriculturist* informed readers that he planted tomatoes in hot beds towards the end of January or beginning of February. Doing so, he urged, tomatoes “may be had a month earlier than by the plan usually pursued.” By the end of the nineteenth century, market gardeners were expected to have hot beds. Livingston himself saw hot beds as an absolutely vital part of market gardening, and considered the decision of where to put hot beds and how they were to be constructed as worth far more consideration than whether to have them at all.41

Some farmers would go to far greater lengths to secure an early supply of tomatoes. In 1852, the *Southern Planter* described a sort of smaller, portable hot beds used to raise individual tomato plants. Using such a device enabled the farmer to raise tomato plants in one location from seed to harvest, thus decreasing the chance of damage being done to plants during transplanting. In 1834, a farmer in *The Genesee Farmer* went to far greater lengths to maximize his early tomatoes. After planting tomato seeds in January or February in a pot in his kitchen window, he transplanted them to a hot bed in March or April. He later transplanted a portion of the plants to the open field, but kept some of the plants in the hot box “to produce the earliest fruit.” “In this way,” he argued, “I never fail to have an abundance of this wholesome and delicious vegetable,

ripe and in fine perfection, at that part of the season when it is most desirable.” In other words, he was able to maximize his crop of early tomatoes.42

Towards the end of the century, as hot beds and other season-extending technologies became more common, greenhouse culture became more widespread as well. Hot bed technology shares with greenhouses the principle of supplying sun to artificially heated plants. However, in contrast with hot beds, which were generally heated by copious amounts of manure, greenhouses were typically heated by burning fuel, allowing for the cultivation of plants for a much longer period of the year. By the late nineteenth century, many market gardeners that already owned greenhouses for lettuce and other crops, utilized any available space in them for tomatoes as well. In the 1890s, progressive market gardeners began exploring forcing tomatoes in greenhouses in earnest, and farmers regularly described very positive results. Meehan’s Monthly argued in 1892 that although “in many cases it is impossible to raise vegetables under glass that will profitably compete with those raised in the open air in the South, since methods of transportation have become so numerous, and intercourse so prompt... the tomato … seems to be an exception.” W.F. Massey, likewise, who operated a farm in North Carolina, reported that “the tomato crop is one of the most important of those in the culture of which a skillful use of glass will make all the difference between profit and loss.”43

For some, such as Massey, the greenhouse was to be used as a substitute for a hot bed – to safely grow seedlings and plants for early tomatoes. For others, however, the greenhouse was to be a permanent home for the tomato crop, allowing for the cultivation of tomatoes at any time

of the year. In September 1889, for example, John Thorpe informed readers of *The American Garden* that “it is not too late to start seed so as to have fruit by Christmas.” Likewise, W. Falconer reported that “tomato growing in winter for market I know to be a profitable undertaking. … So far, the supply of choice tomatoes in winter has not equaled the demand.” Liberty Hyde Bailey found in 1893 that tomatoes sown in the greenhouse in early August would begin yielding ripe tomatoes in the days before Christmas, and those started in November produced ripe fruits by early May. Others reported harvesting tomatoes in June, a full month ahead of non-forced tomatoes. Falconer even reported producing “first-class tomatoes for every day in the year, winter and summer.” By producing such early (and late) tomatoes, one Ohio farmer reported that growers near large cities could produce tomatoes without competition, “exception from Southern-grown, shipped tomatoes, and they cut but little figure when home-grown ones are in market.” Greenhouse tomato production was not extensive until the twentieth century, but at least some progressive farmers maintained greenhouse tomato operations. One such farm, in Richfield, Minnesota, located just outside of Minneapolis, had constructed a large greenhouse with almost 3,000 tomato plants by 1896. Such systematic use of greenhouses for tomato cultivation remained rare: most tomato growers continued using hot beds or available space in their existing greenhouses. Nonetheless, by the end of the nineteenth century, farmers were successfully challenging the seasonality of the fresh tomato by growing them far outside of their usual growing season, and the most progressive of these farmers could boast fully achieving the 12-month tomato.44

Conclusion

By the 1830s, just as Bennett was touting the tomato’s medicinal value, tomato production and consumption in the United States increased dramatically. This trend continued through the end of the nineteenth century. In part, this was due to a changing American culinary culture, one that the tomato slowly became a part of. Most important to the dramatic rise of the tomato during the nineteenth century, however, was the effort of farmers and cooks to transcend the seasonality of the tomato (and, as a corollary, bring tomatoes to the market more profitably). The naturally short harvest season and high perishability of the tomato stood as significant obstacles to the development of tomato culture. But, these obstacles were largely overcome during the nineteenth century, as cooks sought ways to preserve tomatoes for off-season consumption and farmers largely succeeded in harvesting early, late, and to a lesser extent, year-round tomatoes. The effect of these efforts, combined with the dynamism of the tomato itself, was the democratization in the production and use of tomatoes.

Long before the rise of Campbell’s, Heinz, and other national manufacturers of tomato soup, sauce, and eventually Spaghetti-Os, American cooks and farmers introduced American families to the extraordinary variety of uses of the tomato. This creativity was grounded in the need to find ways of extending the edibility of tomatoes beyond the few weeks between their ripening and rotting in the short season of harvest. Cooks met this challenge by adapting traditional forms of vegetable preservation to the soft tomato, but, in the process, also experimented with many new, if sometimes ephemeral, ways of introducing the tomato to the pot, skillet, and eventually the plates of American diners. British culinary influence brought with it pickling and the use of ketchups, both of which were well suited uses for the tomato in America. Likewise, the tomato was integrated into preserves, jams, jellies, wines and syrups.
To these innovations in culinary arts, came invention in breeding and cultivation by farmers. While cooks extended the edibility of tomatoes mostly through technology of preservation, farmers found ways of extending the availability of fresh tomatoes, a form of the vegetable that became increasingly popular in the nineteenth century, by finding ways of widening the harvest season. Seed selection played a pivotal role in the development of tomato varieties, a field that the tomato was woefully behind on in the early nineteenth century. Through carefully selecting desirable tomato plants for saving seeds, farmers improved the stock of tomatoes to include varieties with many different, desirable qualities, including better appearance, taste, and those able to produce ripe fruit earlier in the season. By the end of the century, farmers (and seed developers, like Livingston, who worked for them) produced dozens of distinct tomato varieties, and these varieties formed the basis of many of the advancements in the twentieth century. Likewise, hot beds, greenhouses and other technologies expanded the growing season by shielding plants from the elements in late winter and early spring. By the end of the nineteenth century, almost all market gardeners practiced some form of these technologies, transforming the tomato from a short-season crop to one available for much of the year, delivering fresh tomatoes to the dinner tables of millions of increasingly urbanized Americans through retail markets. In a few cases, farmers had fully transcended the seasons, harvesting tomatoes in every month of the year.

In the decades that followed, the 12-month tomato would become an industrial reality. The rise of the canning industry in the late nineteenth and early twentieth century made a 12-month preserved tomato a national treasure. Likewise, the continued development of greenhouse tomatoes, along with expanded production of tomatoes in nearly every region of the country helped expand access to fresh tomatoes at any time of year. But, once again, this development,
as we will see in the following chapter, was not the work of large-scale producers or corporate manufacturers distributing tomatoes and tomato products on a national scale. Rather, it was the effort of local farmers addressing the needs of cooks for fresh or processed whole tomatoes resulting in a year-round supply of what was quickly becoming America’s favorite vegetable.
Chapter 3

A Tomato For All Seasons:
The Development of the 12-Month Fresh and Processed Tomato Industries, 1880-1945

As the nineteenth century drew to a close, the tomato had become a widely popular food. As immigrants and rural Americans flooded American cities, eliminating much urban garden space, and as America became an industrial nation, reducing free time for home food production, the demand for commercially produced tomatoes increased dramatically. By the turn of the century it was not at all clear how farmers and industry would respond to the demand for tomatoes in urban areas. Over the next forty years, both farmers and industry responded to this desire, but in the end, their response did not fit with the pattern followed by other major food industries during the period. The development of both the fresh and preserved tomato industries during the opening decades of the twentieth century, indeed, followed a distinctly new path: one based on economic and geographic decentralization.

During this period, numerous other food industries, most notably meatpacking, grain, citrus fruit, and lettuce industries, responded to the same situation by consolidating into a few large companies and becoming geographically centralized in particular regions. By the 1880s, for example, over 90% of the Chicago meatpacking trade came under the control of just four Chicago-based companies: Swift and Company, Armour and Company, Fairbank Canning Company, and Libby, McNeil, and Libby. By revolutionizing the process of slaughtering and packing meat in factories rather than at butchers, the meatpacking industry served as a model for new production practices in industries across the country. The tomato industry, however, did not

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1 Portions of this chapter were published in John Hoenig, “A Tomato for All Seasons: Innovation in American Agriculture, 1900-1945,” Business History Review 88 no. 3 (Autumn 2014): 523-544. I would like to thank Cambridge University Press for permission to reprint, as well as the editors and reviewers for their very meaningful and helpful comments.
follow this model, as tomato production and processing took place in virtually every region of the United States. Most important, a wide cast of characters, from farmers, agricultural researchers, small-scale canners, to large corporations, all contributed to the organization of this emerging industry. Into the 1940s, these actors each defined the tomato – its proper growth, marketing and processing – in unique ways. The varied, sometimes even contradictory, ways of looking at and perceiving the tomato helped stave off the dominance of any one particular tomato – no single company, tomato product, tomato variety, or geographic location was able to gain or maintain complete control during the first half of the century.¹

This chapter traces the roots of the modern tomato industry beginning roughly in 1880 through the beginning of the Second World War. This period not only saw the rise of a modern tomato canning industry, but also the emergence and division of specific industries for the purposes of creating canned, fresh, and greenhouse tomatoes – each made up of different groups of farmers, mechanical and agricultural techniques, researchers, tomato varieties, and industry. While sometimes overlapping, increasingly these became separate industries with distinct varieties and agricultural practices.

This period also saw the rise in heavily-processed tomato products, most notably Campbell’s Tomato Soup and Heinz Ketchup. The emergence and success of these branded goods fits into the main narrative that scholars have focused on when examining American food culture and industrialization during the early twentieth century. The success of these and other companies rested on their ability to develop products able to be distinguished through advertising

and marketing. Yet despite the growing popularity of heavily-processed, brand-name tomato products, these remained much less significant than either fresh tomatoes, or minimally-processed canned tomato products, which together constituted the vast majority of tomato consumption through the 1940s.

Instead, the most significant aspect of the development of the tomato industry during the first half of the twentieth century was its sustained desire to create a year-round supply of tomatoes. As the previous chapters suggest, this was not a desire unique to the early twentieth century but instead was rooted in the desires and efforts of traditional farmers and cooks. Yet there is no question that industrialization – of canning, the seed industry, transportation networks, markets, and agriculture – all contributed significantly to the success of the 12-month tomato.

The quest for the 12-month tomato meant that the industrialization of the tomato followed a different pattern than that set forth by the meatpackers in Chicago, grain farmers and processors in the Midwest and in Buffalo, New York, or citrus and lettuce growers in California. The tomato, and the wide-range of actors involved in industrializing tomato production and processing, carved a unique path. Indeed, in stark contrast to these other industries, the most salient characteristic of tomato production during the early twentieth century is the presence of a high level of geographic and economic decentralization. The decentralization of the tomato industry during the early twentieth century was not simply a result of the persistence of traditional agricultural and processing practices, but the emergence of new ways of understanding the production of tomatoes. Particularly in the case of fresh tomato production, decentralized production was a direct result of the desire to extend the seasonality of the harvest.
Nearly every region of the country took part in tomato production, and this varied geography helped supply urban markets with tomatoes throughout the year.

The unique decentralized nature of tomato production during the first half of the twentieth century helped increase even further the amount and diversity of actors participating in the making of tomato culture. States all across the country, from New Jersey, Maryland, Indiana, West Virginia, Florida, Arkansas, Texas and Kansas all conducted their own research on the tomato. Seed companies and canners, both national and local, developed and marketed their own seeds and canned local tomato goods for diverse markets. No single group of farmers controlled the production of tomatoes, as well. Ultimately, the emergence of distinct industries focused on different types of tomatoes – canning, truck-farming, long-distance, and greenhouse – meant that throughout the first half of the century no single type or variety of tomato, or even groups of varieties, maintained a dominant position.

In the end, the desire to transcend the seasons and to produce a 12-month supply of fresh and processed tomatoes resulted in a broadening of the culture of the tomato. Consumers were offered a wide variety of tomatoes and tomato products – each of which was judged according to price, taste, quality, and a number of other factors. The diversity in the production of tomatoes helped further diversify the consumption of tomatoes, ensuring that the tomato in American food culture remained complex and many-sided.

**The Rise of Canning**

At the same time that farmers and cooks were seeking ways to transcend the seasonality of the tomato, enterprising merchants and scientists also sought industrial methods for extending the seasons for perishable foods. Growing through the second half of the nineteenth century, by the beginning of the twentieth century, the canning industry and the canned tomato emerged as
major participants in American food culture. These efforts began with Nicholas Appert’s discovery in 1810 that heating and sealing food inside of glass jars using corks could preserve many foods for an extended period of time, thus providing an alternative to traditional means of food preservation—drying and salting that left food leathery and acerbic. Canning left food, eventually including soft foods like whole tomatoes, relatively “fresh”—firm and flavorful. Appert’s discovery, which was made in response to Napoleon’s offer of a reward for anyone that came up with a new method for preserving foods, forms the basic principles by which modern canning continues to operate. It was quickly improved upon, however, by the English inventor, Peter Durant, who replaced breakable glass bottles with iron “cans” in 1810. Named after the traditional cane “canisters,” Durand coated his cans with tin to reduce rusting, thus, the “tin can,” which he sold to the Royal Navy.  

The growth of the canning industry did not immediately follow the inventions of Appert and Durant, however, as canning was expensive and often produced unsafe products. During the first half of the nineteenth century, a few industrious Americans started canning operations. William Underwood, America’s first commercial canner, began shipping fruit in jars from Boston overseas. Another, Thomas Kensett, first began packing fruit in jars in New York in 1825, and in 1840 moved his operations to Baltimore where he began canning oysters from the Chesapeake Bay. Despite these early innovators, however, the canning industry remained a very small affair until the American Civil War. Tin cans had to be constructed entirely by hand, with a skilled can-maker able to produce roughly 60 cans in a ten-hour workday. Canned food was often boiled (because processors lacked understanding of how much heating was required) which

turned meats and vegetables into flavorless mush and (often correctly) consumers questioned the safety of canned food. Thus canning remained an expensive and potentially dangerous process.  

The Civil War was the first big test for the canning industry, as the Union bought a large volume of canned foods for use in military expeditions. The increased demand fueled by the Civil War continued after the war, as thousands of soldiers returned home and “told others about canned foods and bought them,” driving up demand in the 1860s and 1870s. By 1870, the total US pack of canned goods was nearly thirty million cans per year, a six-fold increase from pre-war numbers. The number of canning establishments also ballooned, numbering 100 by 1870.

Even as the canning industry expanded, however, it was limited by two technological and scientific impediments: first, a lack of understanding of bacteriology (which was not fully understood until the 1890s) meant that early canning processes were largely developed by trial-and-error. Spoiled products remained common. Second, the rudimentary technology implemented in canneries made canning a labor and resource intensive process. To construct a can, a can-maker had to manually bend and cut each piece of tin by hand, and solder them together, leaving a large hole in the top to fill the can. This process was laborious, but also expensive, as constructing 10,000 cans required as much as 25 lbs. of expensive, lead-based solder (which sometimes tainted and even poisoned the canned food). After the can was filled with food, which had to be skinned, shucked, or otherwise prepared by hand, a cap was soldered

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onto the hole in the top of the can, and it was cooked for between four and six hours, seriously limiting the capacity of any canning factory. After this, the hole was soldered shut.6

Between the 1850s and 1905, innovators within the industry overcame some of the most significant obstacles to the mass-production of canned goods. They did so by improving upon and speeding up both the manufacturing of cans and the processing and canning of foods. The late 1840s saw several patents issued for small, hand or foot-powered machines that stamped or cut out tin for can construction. In 1858, canniers began utilizing a method for can construction where the ends were soldered on by being rotated in a solder-bath that increased the average output of a can-maker from 60 cans per day to about 1,000, while also reducing the amount of solder required. During the 1880s, can construction received renewed interest. In 1887, J.D. Cox, a Baltimore canner, created a capper that could cap and solder six cans at a time, further reducing the labor needs in can construction. While Cox’s Capper, as one canning expert recalled in 1903, was a “small machine,” it helped reduce the labor cost of capping cans to roughly one-third of the previous cost. Other innovations soon followed, and by 1900, the can-making industry was largely mechanized, mass-producing cans at a very high rate.7

The technology of canning, however, had significant limitations. The use of large amounts of solder to seal the body and lids and a continued high rate of spoilage produced suspicion of the healthiness of canned foods. These problems were overcome by the introduction of the “Ams” can in the opening years of the twentieth century by canniers Max Ams and Amos Cobb. The “Ams” can, later renamed the “sanitary” can, replaced the practice of soldering the

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6 May, The Canning Clan, 12, 21, 28, 87;
7 May, The Canning Clan, 28-9; Howard, Canning technology, 4; Edward S. Judge, “The Past, Present and Future of the Canned Food Industry,” in Arthur I. Judge, A History of the Canning Industry; by its most Prominent Men (The Canning Trade: Baltimore, 1914), 55; May, The Canning Clan, 29. For references to other important, but similar, innovations, see Stanley Macklem, Interview, 1963-4, Cornell University, Division of Rare and Manuscript Collections, Stanley Macklem Oral History, Collection 2378, Transcript #1199, 42.
exterior seams of the body and lids with a can with a double-seam construction, eliminating the need for all but a small bit of solder in sealing the can. With crimped double seams replacing the lapped side and sealed with a rubber compound, only a thin coat of solder needed to be applied on the outside of the can, safely away from the food contents (Illustration 2). Output from a single machine soon exceeded twenty-five thousand cans per day and within a decade the “sanitary” can was the dominant style of can in American canneries.⁸

The overall success of the canning industry was also dependent upon the emergence of new technologies to help automate food processing and make canning safer. The primary achievements of the canning industry in technological advancement through the end of the nineteenth century were not in creating highly specialized equipment, but in changing general
cannery procedures and processing technologies. In 1861, for example, Isaac Solomon discovered that the addition of calcium chloride to the water used to process cans allowed the water to reach 240º, a significant increase above the boiling point of 212º. By this method, processing times were reduced from four to six hours, to as little as 25 to 40 minutes. This very small improvement allowed a “first-class cannery” to increase production from 2,500 to 20,000 cans per day, and with higher processing temperatures achieved, the rate of spoilage dropped significantly. The effort to decrease the processing time of canned food was furthered again in 1874, with the introduction of A.K. Shriver’s steam-kettle cooker, which utilized externally produced steam in a pressure-controlled kettle to increase cooking temperatures (and thus reduce processing times). The high pressures used to process cans also incidentally reduced waste because it helped offset the high pressures created in canned food when heated, which on occasion led to cans exploding during cooking and formerly forced canners to process their cans with a hole in the top. These innovations were rooted in a general need within the canning industry to reduce processing times and increase the quality of their pack.9

While many of the most significant innovations within the canning industry during the late nineteenth century applied to all (or most) canning products, some within the industry began to develop machinery designed to make the preparation or processing of certain food items more efficient. As the most popular canned food during the period, and among the most labor-intensive, technology in processing corn led the way. One of the leaders in corn processing technology was Welcome Sprague, progenitor of the Sprague Canning Machinery Co., a leading canning manufacturing company in the early twentieth century based in Chicago. In 1888, Sprague created a corn-cutter capable of processing upwards of 15,000 cans per day. Others,

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including Volney Barker and John Winslow Jones, had already created relatively effective corn-cutters, but by using rubber teething rings as springs, Sprague was able to devise a chain-fed corn-cutter that was flexible enough to account for differences in the size and shape of individual cobs of corn. The mechanical corn cutter helped overcome the very labor-intensive task of individually removing corn from the cob by hand. Their most lasting innovation, however, was their development by the turn of the century of the “automatic line.” Eliminating the need for manually transporting products from station to station, Merrell & Soule utilized conveyor belts and an organized factory layout to automate transportation of corn to produce a continuous line of production. While their setup was for canned corn, the idea of a continuous line, developed in the years before Henry Ford’s assembly line, was easily adapted to the tomato and other cannery crops.  

The tomato industry, already popular by the late-nineteenth century, was not as dependent upon specialized technological innovations for its success and benefitted greatly from general technological innovations like Shriver’s steam kettle and Merrell & Soule’s continuous line. The only real requirements of a nineteenth century tomato cannery were cans, boilers – one for scalding tomatoes and another for processing cans, and a means to remove the tomato skin and close the lids. This made canned tomato production relatively easy and inexpensive, though there were high labor costs in peeling the tomatoes. The addition of new equipment, including conveyor belts, offered increased efficiency, but did not require factory specialization. Indeed, as John D. Cox remarked in 1914, the “ease of production and small capital requirement” fueled canned tomato production. Canning machines were mostly generic and canneries could process a variety of local vegetable and fruit crops in succession as they were harvested. Canners had good reason to produce canned tomatoes, as it required little additional investment. Likewise, for

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those interested in canning, opening a tomato cannery, even if on a very small scale, was within the means of many.\textsuperscript{11}

By the end of the century there were numerous improvements in tomato processing, including most notably the invention of tomato scalders and fillers. An 1890s catalog for the Canners’ Supply Company of Bridgeton, NJ, for example, offers numerous models of steam powered tomato fillers, which could be used to automatically fill cans with tomatoes. One model, the Moore and Bristol’s Tomato Can Filler, which was “improved for 1894” lists an operating speed of 40-60 cans per minute, or 30,000 cans per day. The Haines Perfect Can Filler, patented in 1890 and advertised by the Canners’ Supply Company as “the best machine for packing tomatoes,” was offered for only $110 (slightly less than $3000 in 2014)(Illustration 3). While not a requirement for a tomato-canning factory, a tomato filler could be used for foods other than tomatoes, making an inexpensive and dynamic addition to any cannery that had upgraded to belt-driven power. Likewise, tomato scalders, to aid in the process of skinning tomatoes, were not required, but could be had for as little as $40 (just over $1000 in 2014).\textsuperscript{12}


These innovations helped fuel increased canned food production. In 1891, the total pack of canned tomatoes alone dwarfed the entire canning industry of 1870, producing more than three million cases, or 79 million cans. The five-year average for the final five years of the nineteenth century totaled nearly 4.9 million cases. The development of the canning industry during the late nineteenth century was initially centered in Baltimore. Close proximity to large population centers, access to the sea for both seafood and shipping, and a good climate and fertile soil all benefited the region. Yet, the canning industry, and tomato canning in particular, existed across the country. As early as 1860, one enterprising farmer, Thomas Duckwell, opened a canning factory near Cincinnati, Ohio. Likewise, in 1890, tomato packing began in rural Georgia. By 1900, there were at least 1,800 canneries in the country, up from 100 in 1870. Technological innovations in the canning industry during the late nineteenth century helped drive up (and meet) consumer demand for canned goods, but the proliferation of inexpensive, multi-
functional equipment, combined with relatively standardized, minimally-processed goods, ensured that the tomato canning industry would not immediately be highly centralized economically or geographically. The cannery, like the garden, remained dispersed and local.  

**The Corporate Tomato**

The technological innovations in canning that occurred during the late nineteenth century allowed canners to mechanize and increase the speed of production, a fulfilling the growing demand for canned whole vegetables and fruits. Yet another trend in food production paralleled these technological innovations and offered the opportunity to revolutionize the canned food industry as well: the rise of convenience foods.

The emergence of heavily processed convenience foods has received significant attention from scholars. Susan Strasser, for example, argues in *Satisfaction Guaranteed* that hyper-competition created by new industrial methods of mass-producing food necessitated the emergence of more heavily-processed foods that could be branded, thus making individual products distinguishable from one another. The success of companies such as Campbell’s and Heinz was dependent upon their development of very distinguishable products like Campbell’s Tomato Soup and Heinz Tomato Ketchup. For Strasser, then, advancements in food processing technologies like canning were quickly succeeded by the rise of convenience foods, which played a pivotal role in economic centralization within the food industry, the development of marketing and branding techniques, and the evolution of American food culture.  

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Heinz and Campbell’s are important examples of changes in American food processing during the late nineteenth and early twentieth century. In 1869, Joseph Campbell, a young farm boy from Bridgeton, New Jersey, who as a young man became a fruit and vegetable purchasing agent, teamed up with Abraham Anderson and founded Anderson & Campbell in Camden, NJ, a canning enterprise. The pair operated until 1877, when the two parted ways over disagreements on whether the company should expand beyond a local or regional affair. During this time Anderson and Campbell canned a number of products, including their well-known “Celebrated Beefsteak Tomato,” a tomato so large it was said that a single fruit filled an entire can. They also canned “Strictly Fancy Small Peas,” “Fancy Asparagus” and a number of other products. Also in 1869, in Pittsburgh, Harry Heinz, a young man from Sharpsburgh, PA who had been bottling and selling surplus horseradish from his mother’s garden since he was eight, teamed up with L.C. Noble and began a small condiment business. The partners, under the “Anchor” brand, started with Heinz’s prized horseradish, but soon expanded their line to include pickled cucumbers, sauerkraut, vinegar, and other condiments.\footnote{Douglas Collins, \textit{America's Favorite Food: The Story of Campbell Soup Company} (New York: Harry N. Abrams, Inc., 1994), 13, 21, 24; Andrew F. Smith, \textit{Souper Tomatoes: The Story of America’s Favorite Food} (New Brunswick, NJ: Rutgers University Press, 2000), 84; "The House of Heinz," \textit{Fortune} (Feb 1941), 74; Robert C. Alberts, \textit{The Good Provider: H.J. Heinz and his 57 Varieties} (Boston: Houghton Mifflin Company, 1973), 8-9; Eleanor Foa Dienstag, \textit{In Good Company: 125 Years at the Heinz Table} (New York: Warner Books, 1994), ciii, 24, 26; Charles Robson, ed. \textit{The Manufactories and Manufacturers of Pennsylvania of the Nineteenth Century} (Philadelphia: Galaxy Publishing Co., 1875), 383.}

From the outset, then, both Heinz and Campbell understood the importance of distinguishing their products from competitors. In part, their success in this was that they offered distinctly labeled and specialty products. Heinz in particular packaged processed goods – sauces and condiments. By 1875, Heinz had emerged as one of the largest condiment companies in the nation. His original $\frac{3}{4}$ acre of farmland had expanded to 160 acres. His company’s production capacity had increased similarly. The company annually produced 3,000 barrels of sauerkraut,
15,000 barrels of pickles, and 50,000 barrels of vinegar. After going bankrupt, Harry Heinz reformed the company in 1876 with his cousin Frederick, and they specialized in cucumber pickles and tomato ketchup. In 1887, after just two decades in operation, the company’s sales exceeded $100,000. By the turn of the century, Heinz had built the largest condiment company in the United States: the company was the largest American producer of pickles, vinegar, and ketchup.16

While Campbell originally packed mostly raw ingredients – minimally processed vegetables – he nonetheless tried to market them as unique products unavailable elsewhere on the market. In 1893, Arthur Dorrance bought the Joseph Campbell Company and quickly sought a new direction for the company. In 1897, Arthur’s nephew John, who received a degree from MIT and had recently earned a PhD from the University of Göttingen, began working for the company and immediately began experimenting with condensed soups. Campbell’s first introduced five varieties of condensed soups in late 1897, including tomato, consommé, vegetable, chicken, and oxtail, and they were an immediate hit. The year that John Dorrance came to work at Campbell’s, the company lost $60,000. Within a year, the business was profitable. Condensed soup dominated the company’s sales: As early as 1905, of total sales of $900,000, condensed soup sales were almost $750,000. Most of the several hundred products sold by Campbell’s in the 1890s were soon discontinued to focus on the soup business. In 1907, just ten years after their introduction, sales of condensed soup topped $1 million per year. By the late 1910s, sales had increased to 12 million cans per year. Thus, much like Heinz, Campbell’s

success depended largely upon finding niche markets for heavily-processed, highly-distinguishable goods.\textsuperscript{17} 

Both Heinz and Campbell’s played a pivotal role in expanding agricultural research related to tomatoes. John Dorrance, who had experimented with tomato cultivation at his Cinnaminson, NJ farm before coming to Campbell’s, hired Harry Hall, a leading agricultural expert, to conduct agricultural research on the major crops used in their soups, especially tomatoes. As the Superintendent of Campbell’s Soup Farms, his primary job was to advice farmers on proper agricultural techniques and practices. As Campbell’s factories were often overloaded during the tomato harvest season, even having to shut down all other production during the peak of the tomato harvest, one member of Hall’s staff, R. Vincent Crine, came up with the idea in 1918 of having tomato plants planted in Georgia in January and February and having them shipped north to be planted to New Jersey after the last frost, thus extending the harvest season and reducing stress on Campbell’s overloaded plants. Likewise, Heinz was from a very early date also interested in advancing the quality of their tomato varieties. As early as 1901, Heinz annually planted 18,000 acres of its own land for the production of vegetables. The company completed its first tomato yield trials in 1916 and hired a full-time agricultural researcher in 1920. Much like Campbell’s, Heinz was committed to thoroughly controlling the production of its raw ingredients: in 1924, Heinz oversaw 150,000 acres of cropland. Through 1936, the company annually grew their own tomato plants and distributed them to farmers contracted to grow the crop. In 1949, Heinz provided seed and seedlings for upwards of 50 million tomato plants to around 40,000 farmers, mostly on a contract basis.\textsuperscript{18}

\textsuperscript{17} Collins, \textit{America’s Favorite Food}, 13, 37, 39, 82; Smith, \textit{Souper Tomatoes}, 87, 89.

In addition to the control that both Heinz and Campbell’s exerted on the cultivation of the raw ingredients used in their products was their early recognition of the importance of marketing and branding their products to find consumers for their increased production. This marketing effort encompassed not only brand differentiation, but also the introduction of new foods and dietary habits to the American consumer. This included an expanded line of Heinz condiments, but also soup itself, which was not a part of meals of many American before Campbell’s and others introduced it. Many other process product manufacturers introduced Americans to a variety of other new foods and ways of serving them (Jell-O flavored gelatin, Kellogg’s Corn Flakes, Post Postum, etc.).

Of course, even as Campbell’s and Heinz innovated by creating highly processed tomato products - one Heinz biographer labeled them “reciped products” to distinguish them from products like canned whole tomatoes that did not require a complicated recipe - they were not alone in this venture, as numerous other companies began producing similar products during the late nineteenth and early twentieth century. Franco-American, who was later bought out by Campbell’s, manufactured canned soup well before Campbell’s began marketing condensed soup. Heinz, too, was a major seller of soups through the first half of the twentieth century. In each case, Heinz and Campbell’s sought to increase the value of their product, increase consumer loyalty, and reduce the effects of competition by carefully marketing and advertising their products. By appealing directly to consumers, as Strasser has noted, businesses like Heinz and Campbell’s increased sales and ensured that storekeepers would carry their items. Arthur Dorrance understood the need for this when he wrote,

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“When you have the consumer sold you have finished the worst part of the campaign. If the consumer makes the demand, the dealer will stock, and if the dealer stocks, the jobber is bound to get the business, and if he lists it for the dealer, we have to make the soup. It is perfectly simple and eliminates a complexity of selling methods.”

With the understanding that the way to drive up sales was through connecting directly to consumers, Campbell’s was able to keep a small sales office with only a few hundred employees. In its place, Campbell’s spent its money on advertisements. From a budget of only $10 thousand in 1899, it ballooned to $50 thousand in 1901, $400 thousand in 1911 and $1 million, roughly 5 percent of sales, in 1920. Likewise Heinz’s advertising budget ballooned to $4 million in 1933, in the midst of the Great Depression.20

Advertisements for Heinz and Campbell’s products abounded, especially in mainstream national publications like The Ladies Home Journal and Good Housekeeping. Both companies understood the growing power of women as the primary purchasers of food, and sought ways to advertise directly to them. For Campbell’s one very popular image was of the “Campbell’s kids,” two pudgy red-apple-cheeked youngsters in overalls created by Grace Drayton, that first appeared in 1905. These advertisements, labeled by advertising historian Roland Marchand as “the paradox of the captivated child,” appealed to women as mothers who wanted to delight their offspring with child-pleasing food that also was wholesome and promised to produce vital and healthy youngsters at a time when parents were still fearful of high child and infant mortality rates.21

Heinz, on the other hand, often appealed to the healthfulness of their tomato ketchup, especially in light of the Pure Food Movement of the early twentieth century and the subsequent

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banning of benzoate of soda as a preservative in ketchup. In 1908 and 1909, in some of the company’s first advertisements placed in national magazines, Heinz repeatedly attacked its competitors who “drugged” their ketchup with benzoate of soda. In a period when advertising in magazines was fairly new and when many magazines had only a few full page ads in each issue, Heinz took out numerous one and two page ads in several of the leading magazines citing the results of government investigations into the effects of the chemical and questioning whether the Pure Food and Drugs Act of 1906 had gone far enough. Seeing the use of benzoate of soda as a sure sign of other adulterations, Heinz added a sticker to the neck of its ketchup bottle proclaiming it was free from the substance. And to its competitors it asked, “If there is any good in it when used in Ketchup, why doesn’t the manufacturer who uses it blazon it in great letters on the label instead of whispering it in the smallest type he can find?” Or put simply, “The labels tell the story.” To ensure the healthfulness of their products, Heinz regularly invited consumers to their factory in Pittsburgh, where they received a first-class tour to see for themselves how clean and pure their products were produced.22

With burgeoning advertising budgets, Campbell’s and Heinz advertisements took diverse forms. Both advertised in magazines, newspapers, and on streetcars. Heinz, in particular, advertised on nearly any medium it could find: in 1893, at Chicago’s World Columbian Exposition, they handed out tens of thousands of pickle pins, a symbol which became a trademark for the company for decades. Both companies regularly advertised their agricultural research: by the 1920s, Heinz commonly mentioned that their tomatoes were grown from their own seeds, and the name of their variety, the “Aristocrat,” was a marketing tool in and of itself.

Similarly, Campbell’s displayed images of its agricultural experiment station and claimed that “this work of the Campbell experts has established a definitely higher standard of tomato perfection everywhere.” In newspapers and magazines, on streetcars and city buildings, even on the boardwalk at Atlantic City, consumers were flooded with images of the corporate tomato during the opening decades of the twentieth century. The success that both Heinz and Campbell’s had in developing highly-processed tomato products and marketing those products to the public is significant, and by the second half of the twentieth century, both of these companies was among the largest food corporations in the United States.23

The Canned Whole Tomato

Despite the growing influence of companies like Heinz and Campbell’s in branding tomato products, defining tomato consumption, and even in designing and shaping the tomato itself, their importance has been overstated. These companies, above all, stand as early, and thus important, innovators in the fields of marketing, advertising, and product development, but they did not dominate American culinary culture during the first half of the twentieth century. Despite the power of their advertising and innovations in processed convenience foods, Americans hardly abandoned traditionally-prepared meals and the ingredients that went into it. This is evident in considering just what Americans purchased, even in the modern form of the can.

In the case of tomatoes, canned whole tomatoes and other minimally-processed tomato products made up the vast majority of processed-tomato consumption in the United States before 1945. In 1905, for example, Campbell’s sold around 24 million cans of soup, a truly impressive

23 Alberts, The Good Provider, 119-122, 127; Dienstag, The Good Provider, 127; For examples of Heinz advertising its “Aristocrat” tomato, see “Advertisement,” Good Housekeeping (May 1926), 116; “Advertisement,” Good Housekeeping (April 1926), 240. For Campbell’s advertising its own work on tomatoes, see “Advertisement,” Good Housekeeping (May 1919), 75.
number. Yet, that constitutes less than one can for every four citizens in the country, hardly
evidence of Campbell’s soup as an essential part of the daily meal. In 1909, the U.S. Department
of Agriculture (USDA) estimated that consumers purchased a per capita average of six pounds of
canned whole tomatoes but only three-tenths of a pound of canned soups (of all varieties, not just
tomato soup). Ketchup use was limited enough so that the USDA did not estimate its
consumption at all. Dorrance, long dismissive of tomato juice due to it being minimally-
processed and hard-to-brand, capitulated to market pressure in 1931 and Campbell’s began
selling tomato juice as an alternative to condensed soup. It was only in 1948, as the trend
towards value-added and heavily-processed goods picked up steam, that Campbell’s purchased
V8, a more heavily-processed and branded version of tomato juice. Likewise, by 1940 Heinz
could boast $8 million in ketchup sales. The trend was toward more processed canned foods.
Yet as late as 1950 per-capita consumption of all ready-made tomato products remained less than
five pounds annually. On the other hand, for an American population of roughly 132 million
people, the canning industry packed around 600 million cans of tomatoes in 1940, in addition to
more than 360 million cans of tomato juice and 50 million cans of tomato pulp. The ready-made
products, including both soup and ketchup, would have contained less water than canned whole
tomatoes, and thus given a consumer more pounds of fresh tomatoes per pound of processed
food. Nonetheless, these statistics demonstrate that consumers purchased these processed
products far less often than whole tomatoes or minimally-processed tomato products.24

This is evident in looking at the publications of the canning industry itself. In the 1918
dition of the Almanac of the Canning Industry, canned whole tomatoes, ketchup, and tomato

puree are the only canned tomato products mentioned. Likewise, despite the growing popularity of ketchup during the early twentieth century, and evidence that suggests the beginnings of tomato paste production between the World Wars, the National Canners Association, which annually printed statistics on the total pack of tomato products, only kept track of numbers for canned whole tomatoes, juice and pulp through 1943, when it began printing statistics for ketchup. At least through 1948, it did not publish numbers for tomato paste or other tomato products. Apparently, they were simply not important, even at that late date.25

This suggests that Americans before World War II primarily consumed minimally processed goods like canned whole and pureed tomatoes. This had several significant effects: first, as will be discussed in the following chapter, by canning minimally-processed goods, canned tomatoes remained versatile and could easily be adjusted to the needs of the cook. In effect, canned tomatoes remained raw ingredients that could be used for most purposes. Second, the popularity of minimally-processed tomato products encouraged and enabled a dispersed and localized industry to survive, despite the advantages that Heinz, Campbell’s and other national name-brand food corporations had in manufacturing, advertising, and retail distribution. It made processing tomatoes for canning relatively easy, where little expertise or specialization was necessary, Because of the basic uniformity of the canned tomatoes, the advantages of name-brand and product-differentiating advertising (as done by Campbell’s soups) was minimized. This allowed tomato canning to be taken up by both large and small producers nearly anywhere in the country. With minimal equipment requirements, tomato canning could be completed in

25 The Canning Trade, Almanac of the Canning Industry: 1918 (Baltimore: The Canning Trade, 1918), 23; National Canners Association, Canned Food Pack Statistics: 1943 (Washington D.C.: 1944), 18; National Canners Association, Canned Food Pack Statistics: 1948 (Washington D.C.: 1949). There is evidence that tomato paste was imported into the United States prior to World War I, for consumption primarily by Italian-Americans. During World War I, with trade cut off between the United States and Italy, a few American producers began producing paste. This will be discussed in greater detail in the next chapter.
buildings of almost any size. The efforts made by the National Canners Association and others to rationalize production beginning after its founding in 1907 furthered this cause, as canned tomato production, even for more heavily processed goods like chili sauce and ketchup, became more standardized. To help canners successfully process these goods, Clyde Campbell, a twenty-year veteran of Heinz and a former food chemist for the Pennsylvania Department of Agriculture, first published *Campbell’s Book* in 1929, effectively a how-to guide for canning. In addition to describing how to successfully prepare and process tomatoes for canning, he offered standard recipes for chili sauce and spaghetti sauce, explained to canners how to instruct farmers to grow tomatoes, how they should be graded and handled during shipment. He encouraged mechanization, arguing that the most successful plant was one with an “automatic method of handling [tomatoes] from time of the arrival until packed in cans,” yet admitted that “hand-packed” tomatoes were often “used for special or fancy grade,” indicating that a non-mechanized setup, where tomatoes were still hand-packed, were often viewed by consumers as a superior canned product. Ultimately, this guide, along with numerous others, served as a textbook for current or potential canners to follow to be successful. Thus rationalization and standardization, two trends that have often resulted in centralized and concentrated production in many food industries, in the case of the canned tomato industry actually made tomato canning more accessible to a larger group of people.\(^{26}\)

Equipment for tomato canning, much like in the late nineteenth century, remained minimal. Washers, scalders, fillers, and mechanized conveyer belt systems formed the major tomato-specific equipment suggested to run a tomato cannery. Yet, as before, much of this

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equipment was inexpensive and could be multi-purposed. In the early 1910s, for example, the Sprague Canning Machinery Co. sold a tomato scalder capable of scalding 7,500 cans worth of tomatoes per day for $85 and a double capacity model for $125. Likewise, a Remington washer, able to wash enough tomatoes for 70,000 cans per day, sold for $150. Unlike the tomato scalder, the washer could be used with tomatoes, along with numerous other fruits and vegetables, making it a very versatile investment. Thus, even into the 1910s, equipment for tomato canning required minimal investment and often could be used for other types of canning. Many tomato canneries continued operating with only kettles, manually heating the tomatoes before processing them. Stanley Macklem, manager of production for the Curtice Brothers cannery during the 1920s, recalled that during this time it was still possible to “jump into the canning business” with little cash or credit. As the peeling of tomatoes remained the most labor-intensive aspect of tomato canning, efforts were made to automate this process as much as possible. Edward Judge wrote in 1903 that “there [was] an opportunity for an exceeding great fortune to anyone who will give us a practical tomato peeling machine.” Into the late 1910s, this had not been achieved, but canning machinery companies sold specialized conveyer belt systems to speed up the peeling process, such as the Triumph Platform Conveyor Peeling Table offered by Sprague around 1913 (Illustration 4). Fast turnover of canning equipment, as canneries sought to expand or replace their existing machinery, likely led to a very affordable second-hand canning equipment market as well.27

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The increasingly standardized but minimally-processed canned tomato, along with the relatively low cost of (and need for) canning equipment, led to the emergence of thousands of canneries across the United States. Many of these canneries operated only seasonally and produced a small pack, often specializing in one or a few products. Farmers, too, were often encouraged to start their own canning operations. In 1911, the Georgia Experiment Station experimented with a home canning kit that cost as little as fifteen dollars. For many farmers, the *Market Grower’s Journal* reported in 1908, canning on the farm offered a profitable way to dispose of the remainder of their crop after the choices tomatoes had been sold and the market was no longer favorable. Manufacturers of home and farm canning equipment advertised regularly in the journal, and in 1910, in an issue largely dedicated to the topic of “Saving the Surplus,” farmer George Demuth asserted that with a minimal investment he was operating a small outfit out of his farm producing, on average, 500 cans of tomatoes per day. While clearly a very small outfit, he claimed that local grocers were happy to sell his wares, deeming them superior to the larger canning companies’ products. In other cases, such as those of Mrs. Harry Brown of Pennsylvania and C.W. Brown of Massachusetts, women practiced home canning and sold their products on local markets. Unlike Heinz and Campbell’s, tomato canners of all sizes
often marketed their products under numerous labels or brands, sometimes their own, but often also brands of wholesalers and other purchasers. One cannery, the H.S. Mill Canning Company, located in Bucks County, Pennsylvania, canned tomatoes under numerous labels during the first decade of the twentieth century, including “Luxury,” “Iron Mountain,” and “Spring Mountain.” They were also willing to can under private labels if supplied by resellers. Similarly, as late as the 1940s the canneries operated by the Curtice Burns Corporation in New York canned under both their own label and those of wholesalers.28

Thus tomato canning stood between the practices and economics of traditional cottage industry and those of modern mechanized industry. Yet the tomato canning industry in the early twentieth century was not simply in a transitional phase between small-scale and large-scale manufacturing. Instead, the continued existence and persistence of small-scale tomato canners created a thriving industry that expanded across most regions and states in the country in the early twentieth century, especially after 1900, precisely at the time when other industries were being centralized. In addition to the comparatively low cost needed to operate a tomato cannery, the adaptability of the tomato to be grown in nearly every American climate and environment encouraged tomato production and the proliferation of canneries across this wide geography.

Before 1900, tomato canning was centered in New Jersey and Maryland, with each state packing more than 800,000 cases of tomatoes in 1892. By 1900, both fresh and processed-tomato production had spread west along the 39th parallel – from New Jersey, Maryland, Delaware and

Virginia across to Indiana, Ohio, Illinois, and Missouri. The four Atlantic states planted almost 48 percent of the nation’s commercial-tomato crop. The total acreage of all eight states represented nearly 70 percent of the nation’s total. This geographic distribution existed for several reasons, including proximity to eastern and midwestern urban markets, fertile soil, and temperate climates. Even into the 1920s, many farmers and agriculture experts believed these areas were destined by natural advantage to remain the dominant sites of production for the nation’s tomato supply. In a 1922 bulletin for the Maryland Agricultural Experiment Station, Henry James declared, “Maryland is destined by location, soil and climate to be an important tomato producing state. The large consuming markets are close at hand favoring Maryland in the competition with the western states which must ship their goods longer distances.” Likewise, Frank App and Allen G. Waller, writing in 1921 for the New Jersey Experiment Station, argued that high shipping costs prohibited the development of tomato canning outside of these regions. While New Jersey canners could ship a ton of canned tomatoes to New York for $2.64, shipping would cost Oakland, California canners more than thirteen dollars, and even Indiana growers upwards of seven. Thus, despite higher production costs near population centers, App and Waller argued that New Jersey producers “should be able to grow tomatoes at an advantage over the more remote regions.” This geography persisted during the first two decades of the twentieth century, and the government’s need for canned tomatoes during World War I maintained the Atlantic states’ dominance in processed-tomato production through the war years. Benefitting from proximity to Atlantic ports, acreage of processing tomatoes in New Jersey more than tripled from 101,000 in 1915 to 317,000 in 1918.29

However, this dominance changed in the 1920s and the predictions of agricultural experts proved to be wrong. The four Atlantic states, which produced nearly 45 percent of all processing tomatoes in 1918, produced less than 35 percent between 1925 and 1929, and less than 30 percent between 1930 and 1934. In 1921, the USDA’s James Beattie declared, “The very fact that the tomato can be so easily produced under a wide variety of conditions has in the past led to the development of the industry in sections where there have been and are few economic reasons for its continuance.” But, by the 1920s, as nationwide transportation became quicker and more efficient, Beattie’s assessment proved incorrect. Tomatoes continued to be produced widely in the US and tomato production outside the Mid-Atlantic and Midwest became increasingly profitable, leading to the expansion of production in nearly every region in America.\(^{30}\)

Although many food industries became highly concentrated in the late nineteenth century, the tomato-processing industry became more decentralized between the end of World War I and the end of World War II. While Ohio, Indiana, and California reaped the biggest rewards from this shift, tomato canning extended into a host of states led by small canning factories and companies. In sum, common factors encouraged the expansion of canneries all over the country—the comparatively small amount of capital to open a cannery, the need for canneries close to tomato production because of the vegetable’s rapid deterioration, the capacity to grow tomatoes nearly anywhere in the country, and the relatively simple and standardized practice of canning whole tomatoes. By 1925, the National Canners Association reported no fewer than 1,530 businesses operating canneries that processed tomatoes (many with multiple

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factories). Although half of these were operating in the Atlantic states, tomato canning took place in twenty-nine states, with at least thirty businesses operating in twelve states, and at least ten in nineteen states (Figures 1-3).³¹

Figure 1. Acres of Tomatoes Planted, 1919. Data Compiled from U.S. Census Bureau, *Fourteenth Census of the United States: 1920; Agriculture* (Washington, D.C.: Government Printing Office, 1922). Unfortunately, the census does not distinguish between tomatoes produced for fresh and processed production, but it does indicate a general trend away from the traditional areas of tomato production into new states and regions through the early twentieth century.

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³¹ *Canners Directory 1925* (Washington, D.C.: The National Canners Association, 1925). It should be noted too that the *Canners Directory* did not list every cannery in operation. I discovered this omission while researching canning in northeast Pennsylvania and working on the Pennsylvania Agricultural History Project led by Sally McMurry. Often, the directory did not mention smaller canneries, especially in areas that were not dominant sites of food production.
The development of the processed-tomato industry also helped lead to specialization in agricultural research, as the goals of canned tomato production became distinct from those of the fresh-tomato industry. Much like with the geography of production, however, this did not result in a radical narrowing of the varieties available. As research was spread across numerous state
Agricultural Experiment Stations, no single institution, corporate or government, had complete control over the direction that tomato research would progress. As such, no single variety gained dominance from the research to find tomatoes that produced high quality canned products suitable for mass production. Indeed, at least until the 1940s, canners all over the country continued to use dozens of varieties. There were often several preferred varieties within a single state or county. Some longstanding late-season favorites were Stone, Bonny’s Best, and Matchless, but other varieties – including Red Rock, Greater Baltimore, Royal Red, Perfection, Paragon, and dozens of others – were also grown to be sent to canneries.

Over time, however, the varieties that were planted for canning were increasingly similar tomatoes. The need for a standardized product and particular cultural ideas of the tomato led both farmers and canneries (as well as consumers) to expect a uniform tomato. The ideal canning tomato became almost universally a red tomato. Despite the existence of other colors, each having unique taste properties, the red tomato came to dominate the canning industry. Advertising, in effect, branded the ideal tomato as red – representing ripeness and juiciness. In a 1912 bulletin issued by the Delaware Experiment station, C.A. McCue dismissed as a potential canning tomato any variety that did not produce red tomatoes. Likewise, among the dozen or more varieties used as canning tomatoes in 1915 all across New Jersey, Charles Arthur did not list a single variety of tomato that was not red. Research on the canning tomato industry did not yet emphasize a single variety as the perfect canning tomato, but it did begin to narrow the options available. Of great importance for many canners, for example, was producing varieties that ripened during a short period so as to save on labor and transportation costs. Increasingly research following Livingston’s example -focusing on a particular set of attributes, including
color, shape, size, and texture – to create a more predictable, standardized tomato based on specific ideas of taste and aesthetics.\textsuperscript{32}

Ultimately, unlike the fresh tomato industry, whose geography and research was a vital component of providing consumers with unprocessed fresh tomatoes across the year, the canning industry relied primarily on the technology of the can to create the 12-month tomato through \textit{preservation}. Despite this, the decentralized nature of tomato canning produced an industry unlike most other food industries. Canning produced not widespread distribution, but yearlong access to locally grown tomatoes. As late as the 1940s, the canning industry remained largely a regional affair. In 1939 and again in 1944 the Purdue University Agricultural Experiment Station conducted a study of canned tomato products available at Indiana retailers. In 1939, a total of 390 different brands of canned tomatoes were purchased during the three-year survey period. Interestingly, however, more than 85 percent of those brands were packed in Indiana. Though tomatoes packed in Maryland, Virginia, California and Delaware, among others, were all available, the Indiana canned tomato dominated, even over nearby states like Michigan and Ohio. In the 1944 survey, there were similar results with around 85 percent of the canned tomatoes consumed in Indiana canned there. Canning of tomatoes, in this period at least, did not necessarily led to national distribution, but instead to anytime access based on localized production and consumption.\textsuperscript{33}

Thus the geographic decentralization of the tomato industry, which was fueled by readily-available and inexpensive canning equipment, helped ensure that no single tomato


\textsuperscript{33} F.C. Gaylord and K.I. Fawcett, “A Study of Grade, Quality and Price of Canned Tomatoes at Retail in Indiana,” Purdue University Agricultural Experiment Station \textit{Bulletin} 438 (West Lafayette, IN: 1939), 5, 9; F.C. Gaylord and K.I. Fawcett, “A Study of Grade, Quality and Price of Canned Tomatoes Sold at Retail in Indiana,” Purdue University Agricultural Experiment Station \textit{Bulletin} 495 (West Lafayette, IN: 1944), 3, 7.
producer or group of producers would control the production and processing of canning tomatoes during the first half of the twentieth century. Similarly, the continued popularity of minimally-processed tomato goods, like canned whole tomatoes, in addition to ensuring the tomato remained a dynamic ingredient in the kitchen, also helped encourage increased competition in the marketplace, as anyone with canning equipment, and a little know-how, could successfully can tomatoes. The result was the proliferation of hundreds of canneries and brands of canned tomatoes during the early twentieth century.

The 12-Month Fresh Tomato

Despite the tremendous growth in canned tomatoes, Americans hardly abandoned the fresh tomato. Consumption of fresh tomatoes (both commercial and homegrown) remained remarkably stable until after World War II (Figure 4). There are a number of possible explanations for this: some consumers likely continued to perceive a quality difference between canned and fresh tomatoes; others likely continued ethnic traditions of cooking and preserving fresh tomatoes themselves; finally, and perhaps most persuasively, there remained distinct uses for both fresh and preserved tomatoes (the latter two will be discussed in the next chapter). And, while producing fresh tomatoes for the dinner table raised different problems and required different solutions than canned, the goal of both sides of the industry were the same—transcending the seasonality of the vegetable, and the results were similar—a geographically dispersed and localized industry.
In contrast to the canned-tomato industry, the fresh-tomato industry focused far more on constructing the right tomato and the right environment for producing fresh tomatoes throughout the year. The look and taste as well as the harvest time and shelf life of the fresh tomato were far more important than the canned. To meet these and other stringent requirements, the fresh-market tomato drew heavily on agricultural research. Much as in the nineteenth century, significant research focused especially on creating varieties that produced the earliest tomatoes. The names of many varieties, including Earliana and First of All, stressed the primacy of earliness as a desirable characteristic in fresh-market tomatoes. These helped farmers supply local consumers several weeks earlier than with main-crop tomato varieties. In their
advertisements, claims of earliness featured prominently. In a 1908 advertisement for May’s First of All Tomatoes, for example, the seed house of L. L. May & Co. proclaimed the tomato “The Earliest in the World,” promising that First of All tomatoes would ripen “a week to ten days ahead of any other known variety” (Illustration 5). While having other qualities as well, then, earliness was deemed the most important.  


While big seed houses like Livingston and W. Atlee Burpee, of Philadelphia, created many of the most important varieties during the early twentieth century, varietal development continued to come from a number of sources, including farmers themselves. One of the most important early varieties during the early twentieth century, the Earliana, dubbed by Burpee to be “the most famous and actually the ‘Earliest of All’ first-early tomatoes,” was developed by George Sparks, of Salem County, NJ. Often referred to as Sparks’ Earliana, this variety was distributed by virtually every seed house in the country. Likewise, Chalk’s Early Jewel, a popular early variety during the early twentieth century, got its name from James Chalk, of

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Montgomery County, Pennsylvania, who developed the variety during the late nineteenth century. Thus despite the growth of several large seed houses during the early twentieth century, significant varieties were developed by a number of actors, including farmers themselves. The USDA and numerous state Agricultural Experiment Stations, too, conducted regular tomato variety trials and created vitally important tomato varieties, including the Rutgers tomato, developed at Rutgers University and released in the Fall of 1934.\(^{35}\)

The lack of patent protection for developed varieties, too, meant that even varieties developed by Livingston or Burpee were quickly picked up by others and sold. While Livingston himself believed that some form of patent protection was necessary to encourage variety development, such protection was not achieved for the tomato until the second half of the century, after the rise of hybrid varieties made such protection far less important. In the interim, Livingston, Burpee, and others tried to brand their products as higher quality. While concerns over seed quality and the existence of copycat varieties remained prevalent during the early twentieth century, the lack of patent protection of varieties did not seem to limit new varieties being developed. Instead, what resulted was a flood of new varieties, some of which became very popular, especially those that were among the earliest on the market.\(^{36}\)

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\(^{36}\) A.W. Livingston, \textit{Livingston and the Tomato} (Columbus, OH: A.W. Livingston’s Sons, 1893), 34-5, 59; The Plant Patent Act of 1930 offered patent protection for sexually reproducing plants but did not extend protection to asexually reproducing plants, like tomatoes. There are numerous reasons why asexually reproducing plants did not receive such protection. A big part of the explanation is that asexually reproducing plants are much harder to isolate than sexually reproducing plants, making “proving” that one variety is distinct from another and that it is stable very difficult. For a great discussion on patent protection in plants, and in particular on asexually reproducing plants, which did not receive patent protection until the second half of the century, see Jack Kloppenburg, Jr., \textit{First the Seed: The Political Economy of Plant Biotechnology, 1492-2000} (New York: Cambridge University Press, 1988); Cary Fowler, “The Plant Patent Act of 1930: A Sociological History of Its Creation,” \textit{Journal of the Patent and Trademark Office} 82 (2000): 621-644.
The success of seedsmen, farmers, and government researchers in developing earlier strains of tomatoes is evident based on comparing the average time tomatoes took to ripen from the late nineteenth century and the early twentieth century. In 1890, N. Hallock reported on some of the most valuable tomato varieties on the market, including an analysis on the days each variety took to ripen. In general, most varieties at that point took between 125 and 140 days from the time of planting until ripe fruit could be picked from the vine. By 1900, D. Landreth & Sons, a Philadelphia seed house, offered several varieties that reportedly ripened around 100 days. In 1905, the Nebraska Seed Company marketed seed of the Extra Early Advance variety that they claimed would ripen in a mere 95 days. By 1915, Landreth offered several varieties, including the Earliana and Chalk’s Early Jewel, that could be harvested within 90 to 100 days of planting. More telling, in 1920, the Leonard Seed Co. in Chicago promised that their Red Rock tomato, which it deemed especially useful as a main-crop tomato, would begin ripening within 110 days. Thus by the 1920s, at least some main-crop tomato varieties were producing tomatoes faster and earlier than the early tomatoes of the late nineteenth century.\footnote{N. Hallock, “Experiences with Tomatoes: Results of a Large Experiment,” *The American Garden: A Monthly Illustrated Journal Devoted to Garden Art* (May 1890), 292; D. Landreth & Sons, *Catalog 1900* (Philadelphia: D. Landreth & Sons, 1900), 30-1, STCC; The Nebraska Seed Company, *Catalog 1905* (Omaha, NE: The Nebraska Seed Company, 1905), 21-2, STCC; D. Landreth Seed Company, *Landreth’s Garden Seeds, 1915 Catalogue* (Bristol, PA: D. Landreth Seed Company, 1915) 89-94, NAL. Leonard Seed Co., *Leonard’s Seeds, 1920 Catalog* (Chicago: Leonard Seed Co., 1920), 44-5, STCC.}

Consumers’ desires for fresh vegetables throughout the year drove the push for the early tomato. In an attempt to diversify their diet, and to transcend the traditional limitations on obtaining fresh produce, increasingly affluent northern urban consumers were willing to pay significantly higher prices for tomatoes and other vegetables outside of the traditional harvest season. At the very least, regardless of whether or not they actually profited from producing early tomatoes, farmers believed that they had an economic incentive to produce out-of-season,
especially early tomatoes. As *The Market Growers’ Journal* remarked in 1912, “The first two weeks of marketing bring the cream of the prices.” In a report of a survey of tomato growers, the journal reported that farmers received as much as 25 percent less after the first two weeks of the harvest, with a similar drop in prices following a few more weeks. Thus, a few weeks’ delay in ripening could determine whether or not a year’s crop was profitable at all. In addition, an early frost (in the North) or stifling heat or drought could also cut short the tomato-harvest season. By finding tomato plants that would produce early tomatoes, the number of tomatoes on each plant necessarily increased. Farmers, trying to produce a profitable tomato crop, adopted common practices—using early variety seeds, starting plants in hot beds, and even obtaining plants germinated in the South and shipped north. Many of these techniques required minimal cost. For example, a single hot bed frame could germinate several hundred plants, a cheap way of getting the jump on the early harvest market. In pursuit of profitable sale, farmers and agricultural researchers well into the twentieth century tried to alter the tomato and its growing environment to expand its harvest season.38

And, just as the tomato canning industry shifted out of Atlantic states, production of fresh tomatoes for market also expanded out of this region. Before 1900, because of the limitations in transportation, fresh tomatoes had, in fact, been grown locally for sale in nearby cities and towns, and the population density of the urban northeast made the Atlantic states critical sites of fresh tomato production. During the first half of the twentieth century, however, the production of fresh tomatoes expanded to regions across the country and among tropical areas such as the west

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coast of Mexico. By 1928, the Atlantic states had lost their position in the fresh-tomato industry. While New Jersey produced 1.75 million bushels, a little more than 10 percent of the national total, Florida, Texas, and California combined to produce more than 40 percent of the nation’s supply of fresh tomatoes. Overall, ten states scattered across the country produced at least 500,000 bushels of fresh tomatoes (Figures 1-3).\(^{39}\)

At the root of this geographic redistribution of fresh-tomato production was the quest for the 12-month tomato, the sale of which was made possible by reduced costs of transportation. Agricultural research encouraged this trend toward extending the tomato-production season by introducing tomato cultivation to new regions, especially in the South and West, thus providing major urban markets with tomatoes throughout the year. Florida emerged early as a dominant leader producing winter and spring tomatoes. Already by 1918, Florida was shipping thousands of car-lots of tomatoes to urban markets in the Northeast and Midwest, mostly between March and June. In the years that followed, Florida pushed seasonal boundaries, producing greater quantities for shipment in the winter months. By 1924, more than half of shipments from the eastern shore of Florida came in February and March, representing a much earlier crop than five years before.\(^{40}\)

During the early twentieth century, the production of fresh tomatoes and other vegetables for American consumers extended outside American borders. Guatemala, Cuba, England, Canada, and other nations exported fresh tomatoes to the United States, but this emerging international production centered on the west coast of Mexico. In a single season’s time, between 1923 and 1924, Mexico increased its tomato imports into the U.S. by almost 20 percent, from a


substantial 47 million pounds to more than 56 million. During the first half of 1925, total imports of fresh tomatoes from all foreign nations increased 25 percent over the previous year. Much as in Florida, the demand for winter and early spring tomatoes drove the rise of the imported Mexican fresh tomato. High transportation costs limited Mexico’s shipping season to times of the year when fresh tomatoes were in short supply. Mexican tomatoes were shipped in large volumes into the U.S. between December and June, peaking in April and May, when there was significantly less competition.\(^{41}\)

The early summer months, too, became periods of intense competition between many states, particularly in the South. During these months, numerous states sought a time when they faced the least competition and earned the highest prices for their tomatoes in urban markets. Gibson County, Tennessee, illustrates this marketing strategy. Commercial-tomato production began in the county during the late nineteenth century, and, by 1910, Gibson County remained the only county in Tennessee with substantial tomato production, thanks in part to three railroad lines running through the county that sent several hundred car-lots of tomatoes to northern cities each year. Yet Gibson County’s position in the market was fragile. As S. H. Essary explained in a Tennessee Agricultural Experiment Station bulletin, “Tomatoes ripen in the Gibson section just after the close of the shipping season in states further south and before tomatoes began to ripen north of the Ohio. This gives the section only a few weeks of open market, usually from about the middle of June until the first of August. After this time, it is not profitable to ship them.”\(^{42}\)


Similarly, the state of Mississippi emerged as a dominant site of production for early tomatoes. As early as 1918, Mississippi tomato growers, based almost entirely in Hinds and Copiah counties, were providing several thousand car-lots of tomatoes to urban markets almost exclusively during the month of June when it had an advantage. In 1924, Mississippi growers shipped tomatoes to 102 cities in 31 states, several dozen car-lots even making their way into Canada. By 1930, rail shipments of fresh tomatoes were providing urban northerners, and increasingly urban dwellers elsewhere, with a relatively constant supply of fresh tomatoes all year long. To do this, regions, states, and even counties carefully carved out a slice of the newly expanded tomato season that they could profitably provide urban markets with long-distance fresh tomatoes. As a result, during the 1920s, the difference between the availability of tomatoes in summer and winter declined. For example, in 1918, New York City received eleven carloads of tomatoes in January, or a mere 2 percent of the 466 carloads unloaded in June. From 1928 to 1930, by contrast the city received an average of 472 carloads of tomatoes in January, representing more than a third of the 1,409 carloads unloaded in June per year (Figure 5). These changes in the geography and timing of tomato production during the early twentieth century were critical components of achieving a year-round supply of tomatoes. While today the 12-month tomato comes from centralization and concentration, at least until the end of World War II, the primary method for achieving year-round access to fresh tomatoes remained geographic decentralization and the dividing up of the “natural advantage” in tomato production of different regions and climates corresponding with different times of the year.\(^{43}\)


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The Southern Tomato vs. the Greenhouse-Tomato Industry

While southern states such as Florida, Tennessee, Texas, and Mississippi successfully delivered out-of-season fresh tomatoes to urban markets, consumers were often disappointed. In a 1920 USDA bulletin, Charles Sando admitted, “In spite of the fact that thousands of cars of Florida tomatoes are shipped to the North each year, the quality of a large percentage that reaches the consumer is admittedly inferior.” Likewise, in 1912, horticulture expert W. F. Massey found the entirety of the early crop of Florida tomatoes “pink and hollow,” and argued that he had “not seen a solitary red Tomato from Florida.” The consistent problems with producing quality tomatoes led many Florida growers to use ripening houses in the late 1910s, both to ensure that their tomatoes ripened prior to getting to market and to make sure that diseased and bruised tomatoes would be sorted out prior to being shipped north. But these complaints and efforts to rectify them suggest that as the out-of-season tomato became readily
available, consumers expected these winter and spring tomatoes to be of high quality: firm, ripe, red, and juicy.\(^{44}\)

Yet, the advantage of all-season tomatoes often prevailed over quality, assuring a dominance of the southern product in northern urban markets. Any tomato in January for a salad was better than none. In 1924, for example, almost 80 percent of the tomatoes reaching New York City markets via rail came from the South, California, Mexico, and other distant places, compared to less than one percent arriving from New Jersey. While these numbers are distorted by the fact that many were brought to New York City from New Jersey via truck, E. V. Wilcox noted in 1925 that a “craze for early stuff” helped undermine New Jersey tomato production in favor of more distant sites of production. “Thus,” he argued, the urban New Yorker “is willing to pay 15 to 30 cents a pound for the pale pink, anemic, sweat house ripened tomatoes of the premature birth, simply because they come in January and can’t see 50 cents value in a bushel of real tomatoes in July [emphasis added].”\(^{45}\)

But mid-Atlantic and midwestern tomato producers did not give up without a fight. And they responded by attempting to address the aesthetic failings of the out-of-season tomatoes from the South and West as well as compete with them by extending their growing season. Northern farmers, recognizing the poor quality of the Southern winter tomatoes, as early as 1900, began to force tomatoes under glass (starting plants in greenhouses before their usual growing season). By 1910, while virtually every state produced some vegetables in greenhouses, New England, the Middle-Atlantic, East North-Central, and West North-Central regions produced almost 14 million of the nation’s 15.5-million-dollars worth of greenhouse vegetables. Greenhouses of all


sizes devoted to tomatoes, among other vegetables, emerged in many of these states, often in close proximity to major cities. Despite the large capital investment required for construction and maintenance, James Beattie of the USDA argued that with proper planning and placement, greenhouses “are usually able to compete successfully with tomatoes grown at distant points out of doors.”

The success of greenhouse tomatoes depended on the superior quality of the early greenhouse tomato over Southern early tomatoes. Beattie noted, “When ripened on the vine, greenhouse tomatoes are far superior in quality to those grown outside in warm sections, where it is necessary to pick the fruit green in order to get it into the hands of the distant consumer without undue loss.” In fact, the superior quality of greenhouse tomatoes relatively close to market allowed producers to demand and obtain high enough prices for their product to offset the high costs of building and maintaining greenhouses. Here, the expectation of winter tomatoes (made possible by rail transport of southern tomatoes to northern urban markets) created the possibility of selling high-priced hothouse tomatoes during these months. As early as 1908 C. W. Waid of the Ohio State Experiment Station observed that greenhouse tomatoes, produced earlier than other locally and regionally produced tomatoes, could secure significantly higher prices than Southern-grown field tomatoes.

More important than whether or not greenhouse tomatoes were in fact of superior quality was whether consumers perceived greenhouse tomatoes to be superior to Southern-grown tomatoes. In 1908, Waid commented, “It requires considerable argument to persuade some people, who have not had an opportunity to test the quality of hothouse Tomatoes, that Tomatoes grown under glass should bring higher prices than Southern grown Tomatoes on the same

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markets.” In order to foster consumer recognition of the value of hothouse tomatoes, in 1912, Waid urged greenhouse growers to use standardized packaging and labels that would distinguish greenhouse tomatoes from Southern-grown field tomatoes. He argued that greenhouse growers should package their tomatoes to accentuate their difference from the Southern field-grown alternative with “an attractive trademark or stamp attached to each package [to] help to make identification easy.”

Waid was not alone in this marketing strategy. Soon after, E. E. Adams, a grower from the Lake Erie section of Ontario, responded to Waid’s article, describing his firm’s container and the image of the logo affixed to each box (Illustration 6). Although growers in his area did not use standard packages, Adams suggested that his firm’s “smooth pine” boxes, measuring 6 x 9 ½ x 19 ½ inches with a capacity of twenty pounds, had produced satisfactory results. They lined the boxes “with corrugated paper, sides, top and bottom, and [wrapped] each Tomato in tissue paper, on which is printed in red a picture of a Tomato and the grower’s name.” Overall, these early efforts by greenhouse growers to use packaging and labels to distinguish their products demonstrates their understanding of the larger changes taking place in the American economy and consumer culture and their willingness to adapt in order to compete in the emerging food industry. The perception of quality through packaging had become more important than the actual characteristics of the hothouse tomato itself.

Although the hothouse tomato never displaced or seriously threatened the market for Southern-grown tomatoes, it did emerge as a viable industry in its own right, one that continues to hold significant cultural and economic value. During the first half of the twentieth century, a variety of sizes of greenhouses emerged to fulfill the growing demand for greenhouse tomatoes. By the mid-1920s, numerous large greenhouse complexes supplied northern cities with spring and early summer hothouse tomatoes. In 1924, with fifteen greenhouses comprising more than a quarter of a million square feet under glass, Zuck Greenhouses, in Erie, Pennsylvania, produced 15,000 ten-pound baskets of tomatoes, along with other vegetables. With more than twenty-nine acres of greenhouses, Davis Gardens in Terre Haute, Indiana, claimed to be the world’s largest greenhouse facility in 1925. Producing around 350,000 pounds of tomatoes annually, Davis Gardens shipped their product all over the nation, as far north as Alaska and even to the southern tip of Florida.⁵⁰

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Conclusion

Unlike the beef, corn, citrus and many other food industries, the commercialization of the tomato during the late nineteenth and early twentieth century did not result in an economically and geographically concentrated industry, where production and processing took place in one or a few geographic regions and was controlled by a handful of companies. Instead, through the 1930s, tomato production and processing became decentralized, with almost every region of the country growing and processing a significant amount of tomatoes and tomato products. The low capital costs of opening a tomato cannery, and a need to can tomatoes close to where they were produced, coupled with the ability to grow tomatoes in virtually every American environment, ensured that small and large tomato canneries were present in numerous states and regions in the country. The desire to create a 12-month fresh tomato helped further decentralize fresh-tomato production, as states carved up the harvest season to find times when they could profitably sell fresh tomatoes in urban markets. The greenhouse tomato industry, which emerged during the final decades of the nineteenth century, grew during the early twentieth century in part as a response to the lower quality off-season tomatoes offered by Southern states. Thus the longstanding desire for a 12-month tomato, an idea conceived and largely achieved during the nineteenth century, culminated in the early twentieth century by the creation of a diverse and widely distributed tomato industry that was relatively unique.

All this meant that a diverse tomato culture continued to thrive, despite the rise of Heinz and Campbell’s, with its large cast of characters—local farmers, agriculture extension officials, seed entrepreneurs, and others. Because large-scale growers and processors did not control the production of tomatoes, no single idea of the tomato prevailed. Instead, tomato production expanded to include new farmers, canners, and agricultural researchers. Both fresh and processed
tomato production remained strong throughout the period. Despite the growing significance of Heinz, Campbell’s, and other large companies producing soups, pastes, and condiments, the primary tomato products during the early twentieth century remained fresh and minimally-processed tomato products, like canned whole tomatoes. The tomato industry, decentralized, diverse, and driven by a quest for the 12-month tomato and coupled with minimally-processed tomatoes helped ensure that corporate interests would not control the tomato and its many uses, at least before the middle of the twentieth century.

In addition to changing methods of tomato production, tomato consumption, the subject of the following chapter, changed dramatically between the late nineteenth century and the onset of World War II. With an increasing urban population, especially among Italian and other ethnic immigrants, tomato culture continued to expand. Moreover, a home gardening culture featuring the tomato as its most celebrated crop actually grew during the World Wars. In surprising ways, during these years the canning and fresh tomato industries promoted innovation in home use of tomatoes as the vegetable in both canned and fresh form became accessible (and more affordable) throughout the year.
Chapter 4

Consuming Tomatoes:
Culinary Creativity and Expansion in the Age of Industrialization

During the nineteenth century, major changes in tomato production and consumption primarily came from rural farmers and cooks, and they mostly took place on the farm. By the late nineteenth century, however, an emerging urban culture set off a revolution in American culinary culture, and new uses for the tomato led the way. As chapter two indicates, by the 1830s American cooks, with roots in rural crafts, adapted the tomato to traditional ways of preserving and serving food and discovered the joys of fresh tomatoes. And, as chapter three shows, American farmers (with help from an assortment of experts) found ways of providing processed and fresh tomatoes to American consumers across the year. After the Civil War, however, tomato culture was transformed by the introduction of new players – immigrants, corporate promoters, and middle-class homemakers, mostly located in cities, developed new ways of consuming tomatoes. Between the 1870s and the end of World War II these different groups produced an unusually diverse tomato culture that prevented any narrow corporate or nutritional notion of the tomato.

The story of the tomato, then, stands in stark contrast to the picture painted by many historians on the major trends in food history during the first half of the twentieth century. On the one hand, scholars of consumer culture like Susan Strasser see the rise of corporate advertising and early convenience foods as signs of a changing food culture, one that was largely controlled by corporate interests during the period. On the other hand, Harvey Levenstein argues that in addition to corporate forces, middle-class and elite reformers and government policymakers and
bureaucrats formed a near omnipotent triumvirate that was able to “Americanize” and standardize American food culture as early as the 1920s.\(^1\)

As the previous chapter demonstrated, despite the successes of early food processing companies like Campbell’s and Heinz in creating and marketing brand name goods, they did not exert control over tomato production during the first half of the twentieth century. Likewise, despite their influence on the consuming public, national brands did not control the ways that tomatoes were cooked, processed, or consumed during the period either. By focusing on the rise of corporate advertising and companies’ tremendous success during the postwar period, historians have overvalued these corporate food products.

Similarly, reformers along with government policymakers and bureaucrats had only limited success at “Americanizing” or standardizing the American diet during the early twentieth century. As Levenstein notes, these reformers were often met with staunch resistance from the working class and immigrant groups. They were much more successful in shaping middle-class culinary habits, but the result was less the standardization of American cuisine, as many reformers sought, and more a vast expansion in American food culture.

Likewise, new immigrant groups brought with them their own ideas of tomato culture. Despite the efforts of reformers to persuade them to abandon their ethnic cuisines, many ethnic cuisines flourished in the early twentieth century. The tomato, in part because of its preexisting popularity in the United States, became a staple of Italian-American cuisine, as Italian immigrants developed a unique cuisine based on regional Italian food traditions and American conditions. Italian food, in particular, not only flourished during the early twentieth century but also greatly influenced middle-class American cuisine. By the middle of the century several

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major Italian American dishes, including spaghetti and pizza, were popular dishes among many Americans.

By the early twentieth century, as tomato culture widened and reformers sought changes in the American diet, the tomato was a key component in making the American diet far more diverse. Long used as a way to add variety and flavor to otherwise monotonous dishes, by the beginning of the century the tomato also became a featured component of many new dishes, especially as new ideas of nutrition and the discovery of vitamins led nutritionists and other food experts to reevaluate the value of fruits and vegetables in a healthy diet.

These new ways of consuming tomatoes were built on and adapted to the 12-month tomato. The influx of fresh tomatoes throughout the year enabled cooks to prepare tomato-based dishes from scratch and to consume tomatoes raw. Similarly, the dominance of minimally processed tomato goods like canned whole tomatoes allowed cooks great flexibility in the preparation of tomato dishes, and helped spark a revolution in tomato culture during the first half of the century.

**Transitioning From Rural to Urban America**

America’s transition from a rural to an urban nation around the turn of the twentieth century is well documented. Already by 1870, America had 226 cities with a population of at least eight thousand. In 1880, almost 13 million Americans (out of a total population of just over 50 million) lived in incorporated areas of at least 1,000 people, with many million more living nearby. By 1900, the trend towards an urban America was even clearer. There were 212 towns, for example, with a population between four and five thousand, almost the same number of towns that exceeded four thousand residents just thirty years before. While in 1870 there was not an American city with a population greater than one million, by 1900 there were three, and three
more had populations greater than half a million. In 1900, fully 47 percent of the population lived in incorporated places and in some areas, including the North Atlantic, North Central, and Western Divisions, more than half of the population lived in such areas.²

Two distinct processes fueled urbanization: first, migration from farm to town and town to city brought many Americans into urban environments as they sought new opportunity in industry and business. Second, there was a dramatic expansion of immigration beginning in the late nineteenth century and continuing through the 1920s, and the majority of these new immigrants found permanent homes in cities and towns. By the late nineteenth century, immigration into the US shifted from Western European nations, including England, Ireland, and Germany, to Eastern Europe and the Mediterranean. While during the 1850s German immigrants accounted for almost 1 million of the 2.6 million immigrants, Italians accounted for less than 10,000. By the 1880s and 1890s, this trend had changed: during the 1890s, more than 650,000 Italian immigrants entered the United States compared to only around 500,000 German immigrants. Similarly, immigrants from these new immigrant groups were far likelier to live in cities. Thus despite making up about 1% of the urban population in 1880, dramatically increased Italian immigration during the final two decades of the century and into the twentieth century, Italian immigrants soon had a dominant place in a number of American cities.³

During the late nineteenth and early twentieth centuries, urbanization and immigration helped tomato culture spread into American cities. While the largest transformations regarding tomato culture during the nineteenth century took place on the farm, as both farmers and cooks sought to expand the uses and seasonality of the tomato, the rise of the American city and a

burgeoning middle-class by the early twentieth century brought with it expanded uses and ideas of tomatoes. This trend was furthered by the proliferation of cookbooks and magazines geared towards progress in domestic spaces. Thus while tomato production was still largely a rural phenomenon – farms, canneries, and seed firms were primarily rural enterprises – tomato consumption and culture blossomed in American towns and cities during the early twentieth century.

**Nutritional Reform and the Tomato**

At the same time that Americans and immigrants flooded America’s cities, reformers sought to overcome the many urban problems these cities faced, including poverty, poor health conditions, a lack of open public space and, increasingly, they also sought to shape urban residents’ culinary habits. Of great importance to these efforts, as numerous scholars have pointed out, was the rise of the fields of nutrition and home economics. The USDA, through the Department of Chemistry, became heavily involved in the nutrition movement during the late nineteenth century, and Wilbur Atwater, Wesleyan University’s first chemistry professor, became the primary voice on nutrition for the USDA. Atwater is perhaps best known for his invention in the 1890s of the calorimeter, a device that could accurately determine the caloric content of food. Seeing the ‘urban crisis’ of the late nineteenth century, Atwater’s interest in nutrition was primarily in what he called “food economy,” or the maximization of nutritional food for the lowest possible cost. He believed that taste should have little influence in human diets and that the poor were some of the most wasteful when it came to food. Undoubtedly a revolutionary device, the calorimeter is telling of the biases and limitations of early nutrition studies. Atwater likened the proper maintenance of the human body to the operation of a machine, where nutrition amounted to the study of “definite quantities of income and
expenditure,” or what he aptly termed, “chemical book-keeping.” Central to this chemical bookkeeping was the counting of calories. This new way of evaluating the value of various articles of food suggested that many vegetables, including tomatoes, were of little food value. Atwater distinguished between different types of foods, including proteids (proteins), carbohydrates and fats, but in his estimation, proteins and fats were of far greater importance than carbohydrates, a readily available source of energy.⁴

This is not to say that Atwater suggested a one-sided diet, one made up primarily of meat. Indeed, he argued consistently for a “mixed diet,” one that included a variety of foods. Yet, his idea of a mixed diet included less fatty cuts of meat, wheat products, and potatoes. Beans also served as an inexpensive source of protein. Other vegetables, according to Atwater, were generally of little nutritional value. These positions were codified as USDA policy in 1894 with the publishing of Atwater’s food guide, *Foods: Nutritive Value and Costs.*⁵

Atwater’s position on the tomato along with most other vegetables was clear. They were, by and large, of little nutritional value, and to be consumed only sparingly due to their high cost compared to their nutritional value. During the late nineteenth century, reformers attempted to turn Atwater’s nutritional guidelines into culinary reality by opening public kitchens that would supply working-class urban residents with inexpensive, but nutritious foods. Boston became the

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⁵ Atwater, “Foods: Nutritive Value and Cost.”
center of such activity, with Helen Richards and others providing inexpensive soups and stews to the working poor. Fortunately, both for the fate of the tomato and the nutrition of these poor urbanites, the efforts at reforming the diets of the poor largely failed. As Harvey Levenstein has pointed out, poor Americans, especially immigrants, mostly ignored the public kitchen movement. As the story of the tomato during the late nineteenth century attests, Americans had little interest in reformers’ dictating their diets, altering their ethnic identities, or dismissing the value of foods, like tomatoes, that they deemed both healthy and useful additions to the kitchen table.

Despite the early failures of the nutrition movement to radically redefine American cuisine, it did have several lasting impacts. On the one hand, it continued a precedent of high consumption of meat, wheat and potatoes that continues to this day, offering scientific legitimacy to a diet that many Americans already practiced. On the other hand, it created a tradition of the scientific study of food. While this initially was confined only to counting calories, by the 1910s, this led to the discovery of new compounds in food products – vitamins – in which the tomato stood out.

In the years leading up to World War I, scientists from the United States and Europe discovered the existence of a small substance in foods that they called the vitamin. Almost immediately, this discovery undermined Atwater’s sole reliance upon the calorie and in its place nutritionists came to believe that vitamins and other minerals played a vital part in proper nutrition as well. In 1911, Dr. Casimer Funk of the Lister Institute began research that resulted in the discovery of vitamins. Soon Funk, along with Dr. E.V. McCollum of Johns Hopkins University, became leaders in the field. The original discovery of Vitamins A, B, and C expanded into 5 with Vitamin A being split into A and E, and Vitamin B split into B and D. As

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6 Levenstein, *Revolution at the Table*, 44-59.
late as 1921, scientists remained unable to isolate vitamins from other compounds in food, but they could ascertain their existence by determining whether certain foods prevented the harmful effects associated with a lack of vitamins.⁷

The discovery of vitamins led to a revolution in nutrition studies. It meant not only a shift away from calories and the idea of food as fuel, but also a move toward appealing to the middle class rather than challenging working class/immigrant diets. Nutritionists quickly deemed the vegetable to be a vital component to a healthy diet and with this won a middle-class audience. Although these vitamins were sometimes found in meat, dairy products and major staple grains, it became clear that they were often most prevalent in fruits and vegetables. Already by the 1910s the tomato was fully accepted into the American diet, but with the discovery of vitamins, and the tomato’s high content of Vitamin C and other vitamins, the nutritional value of the tomato quickly received scientific backing.⁸

While Atwater’s concept of nutrition focused almost exclusively on calorie intake, his daughter, Helen Atwater, was forced to reconcile the existence of vitamins in her own 1918 food guide. Whereas W.O. Atwater’s nutrition guide dismissed vegetables as having little nutritional value, Helen’s nutrition guide called for the daily consumption of more than a pound of fruits and vegetables. Moreover, Helen’s work indicates a clear link between the nutrition and home economics movements by the 1910s. Her husband dismissed the value of “taste” in food, but Helen’s experience in the home economics movement led her to understand far more the value of producing appetizing meals. Flavorings, seasonings, and condiments, while often not adding extensively to the nutritional value of a meal, “may, however, be very useful in making an

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⁸ For the shift towards reforming middle-class eating habits, see Horowitz, The Morality of Spending, 67-84.
otherwise unattractive diet taste good.” Thus, for Helen Atwater, proper eating was a combination of nutritious and appetizing meals.\(^9\)

The discovery of the vitamin was not a necessary part of the tomato becoming accepted by mainstream America. By the late nineteenth century, of course, it was already a major part of the American diet. Yet, whereas Atwater’s work sought to undermine generations of effort to expand the variety of the diet to include more fruits and vegetables, the discovery of the vitamin actually encouraged the further expansion of the American diet. And home economists and nutritionists challenged Atwater by actively promoting this diversity during the early twentieth century. Scholars have focused on reformers’ efforts to “Americanize” immigrants and criticize their food budgeting, yet many published cookbooks, while providing recipes they deemed acceptable to the mainstream, nonetheless encouraged increased diversity and variety in the American diet. While many of their recipes drew on traditional American cookery, as the following recipes will show, the nutrition and home economics movements gave these writers a very valuable platform and medium in which to distribute recipes and ideas, and helped foster a dramatic increase in tomato consumption.\(^ {10}\)

Compared to their efforts to remake the working-class diet, reformers had many successes in remaking the middle-class diet during the early twentieth century. Significant gains were made in increasing the cleanliness of American kitchens and in teaching homemakers how to budget and plan meals. Most of all, however, these reformers helped oversee a tremendous broadening of the middle-class diet away from Atwater’s meat, bread, and potatoes, towards a diet consisting of more variety in fruits, vegetables, and other foods. Thus despite their efforts to elevate middle-class cuisine under new standards of propriety and to “Americanize” the culinary


\(^{10}\) Levenstein, Revolution at the Table, 98-108.
habits of ethnic groups, reformers, intentionally or not, helped create a more expansive, experimental American cuisine. Middle class, increasingly urbanized, women learned from these experts (and from each other) in and through a wide expansion of cookbooks. But they were also aided by mass-produced magazines directed toward the modern homemaker from the 1880s, but especially after 1900 (*Ladies Home Journal, Better Homes and Gardens, American Family Home*, etc.)¹¹

The example of the tomato demonstrates the movement of many of the advances in American cuisine from the farm into the city during the early twentieth century. By the end of the nineteenth century, especially as market gardening became more prevalent, the popularity of tomatoes exploded in urban areas, especially among elites and the middle-class. In many ways, the uses of tomatoes followed the traditions set forth by rural nineteenth century cooks and farmers – fresh tomatoes, ketchups, sauces, and other side dishes, Yet the growing influence of home economics and other reformers helped expand the uses of the tomato as magazines and new cookbooks all sought to find new ways of preparing and using the tomato.

**Innovation in the Kitchen: The Cooked Tomato**

Many of the uses of tomatoes in the late nineteenth and early twentieth century followed traditional methods of preparing tomatoes, and could easily be prepared using commercially available canned or fresh tomatoes. Recipes for homemade ketchup, for example, continued to be widely available in cookbooks and periodicals even as commercially prepared ketchup rose in importance. Much like in the middle of the nineteenth century, these recipes tended to be complex, with several ingredients and offering a variety of tastes. Most recipes called for a combination of sweet, salty, and spicy flavors. One recipe, for example, called for onions, garlic,

salt, cayenne, and vinegar, giving it a salty, spicy flavor. The ketchup was then balanced with the addition of brown sugar. A few recipes, including one titled “Old-time Tomato Catsup,” appealed to the tradition of American ketchup making. This recipe, like the last, gave the dish a complex flavor profile, calling for vinegar, onions, cayenne and salt, but also required port wine (great for helping to preserve the ketchup), cloves, mace, and nutmeg to sweeten the mixture.

While recipes tended to call for red, ripe tomatoes, some, including one called “Southern Catsup,” required green tomatoes, giving cooks a new way of using tomatoes either early in the season, before tomatoes had ripened, or late in the season, as green tomatoes were salvaged before the first frost. For those without access to fresh tomatoes, one 1915 cookbook offered a recipe for making tomato ketchup from canned tomatoes. This indicates that even in the age of processed tomatoes, some still preferred their more heavily processed products, including ketchup, to be made at home, even if it meant buying commercially canned whole tomatoes.

After the final product was complete, housekeepers now had more options with what to do with the ketchup. As in the nineteenth century, they could simply put them in jars. But, with the rise of home canning during the late nineteenth century, housekeepers could now put up their ketchup in jars using new canning methods to store their ketchup more reliably and for longer periods of time.12

Similar to ketchup, recipes for tomato pickles continued to be widely available during the early twentieth century. These recipes reflect a wide variety of tastes, but most of all they reflect the ability of the tomato to take on complex flavors. While most flavored green tomatoes over ripe tomatoes, at least as late as 1917, both yellow and red tomatoes were considered suitable for

pickling. Some recipes favored salty and spicy flavors, perhaps closer to what many of us are
used to today with cucumber pickles. One recipe, for example, called for the addition of a dozen
white onions and 6 red pepper pods to one peck of green tomatoes. Combined with the vinegar,
this would have produced a relatively salty tasting pickle with a decent hint of heat. Ground
pepper, red peppers, green peppers and onions were all common ingredients in spicy pickle
recipes. Interestingly, another common ingredient used to add flavor and spice to pickled
tomatoes was horseradish. While often only calling for small amounts of grated horseradish, one
recipe actually calls for the addition of a pint of horseradish to a pickled mixture of one gallon
green tomatoes, four green peppers and a dozen onions. This recipe certainly packed punch.\footnote{13}

While the previous recipes focused on flavoring the tomato pickle primarily through salty
and spicy flavors, a larger portion of recipes for tomato pickles combined both salty and sweet
flavors. Sugar, cinnamon and cloves were common ingredients to these pickles. In many cases, a
large volume of sugar was added. In one recipe, eight pounds of sugar was added to twenty
pounds of tomatoes. Another called for two pounds of brown sugar for every gallon of tomato
and vinegar mixture. In most cases, however, the sweetness of these recipes was countered with
horseradish, red pepper or mustard to help balance out the sweetness with a little spice. Despite
the introduction of standardized and limited selection of manufactured condiments by the likes of
Heinz and soups by Campbell’s, American cooks continued to experiment and innovate
with an astonishingly wide variety of ingredients in their tomato dishes.\footnote{14}

The long tradition of pickling tomatoes provided housewives with numerous established recipes, often associated with different regions and places. Thus the tomato served as a canvas for cultural sharing as different culinary ideas were presented to mainstream American for consumption. The Mid-Atlantic and Southern regions of the US were particularly well represented, with recipes for the “Pottsville Pickle” (of Pennsylvania), Philadelphia Pickle and Maryland Pickle. Virginia, too, had its own pickle, as one recipe was named “Virginia Mixed Pickles.” These recipes, while sometimes similar, did have distinguishing characteristics. The Pottsville pickle, for example, contained both green and red tomatoes, onions and peppers. The Philadelphia pickle, on the other hand, added raisins, peppers, brown sugar and celery to the mix. Likewise, the Maryland pickle called for a wide variety of ingredients, including brown sugar, red and green tomatoes, horseradish, yellow mustard seed, cabbage and red peppers. Recipes were also commonly given for tomato pickles influenced by other nations’ cuisines, including several for pickled tomatoes in the French style, the Spanish style, and one for a Japanese pickle, the latter containing tomatoes, sugar, and a substantial number of limes.15

Yet, Americans did not simply rely upon traditional pickling culture during the early twentieth century. Cooks embraced the innovations promoted by the Home Economics and Nutrition movements. One of these was the introduction of mixed pickles and relishes. While tomato ketchups of the late eighteenth and early nineteenth century were popular adaptations of folk pickling traditions, mixed pickles and relishes were introduced in the twentieth century through the printed recipes of university experts in the field of home economics. Especially in the case of mixed pickles, these recipes likely emerged as a way to get rid of leftover produce, a

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large theme of home economics. One recipe, aptly named “Rummage Pickles,” called for both green and ripe tomatoes, cucumbers, onions, celery, and red and green peppers. Yet these were very loose recipes, allowing the cook to substitute what they had on hand. Other recipes, for example, called for cauliflower and cabbage in addition to tomatoes.\(^\text{16}\)

Far more common than mixed pickles, however, was the introduction of various relishes which could be described as a combination of chopped or diced vegetables that were then pickled. A wide variety of relish recipes were published during the early twentieth century, but the two dominant categories of relishes were piccalilli, a Western take on the Indian pickle, and chow chow, a relish developed in the Americas. In reality these two dishes could result in nearly identical products. While today chow chow is more commonly associated with a relish containing a green tomato base, and piccalilli is more likely a pickle or pepper relish common in the Northeast and Midwest, the distinction in the early twentieth century was not at all clear. While on occasion a recipe for piccalilli called for no tomatoes, the vast majority of recipes had tomatoes as a main ingredient. Much like with pickles and ketchups, recipes for relishes contained a wide variety of vegetables and spices. Yet, these condiments did provide something new: they offered another way for tomatoes to be integrated into American cuisine in a bright and flavorful combination, and increasingly these new uses for tomatoes were developed and experimented with by the American middle-class cook. Served as a garnish or a side to a meat entrée or sandwich, much like ketchup, these relishes offered new and more complex tastes to the standard American diet, and they helped integrate the tomato more fully into mainstream, middle-class American cuisine. In many of these recipes these innovative cooks were able to take advantage of the growing supply of canned whole tomatoes to fashion unique dishes. Once

again, this points to the limited impact of corporate food processing. Industrial production facilitated more complex culinary preparation and creativity.  

This surprising trend is further illustrated in another form—the fact that many housewives continued to preserve tomatoes at home, and in increasingly used store bought tomatoes rather than homegrown. Though many canned tomatoes from their own gardens, the low prices offered in urban markets at the peak of the harvest also offered opportunities to can commercially produced tomatoes. In fact, this helped make it possible for the rural tradition of preserving tomatoes to migrate to the city. As reported in *Good Housekeeping* in 1896, “in September tomatoes can be purchased for thirty or forty cents the half bushel and easily canned. … If many tomatoes are used, it is both economical and satisfactory to spend a few hours” canning them. Between the late nineteenth century and through the 1910s, recipes for canning tomatoes were commonly offered in domestic periodicals, cookbooks, and nutrition guides. Most called for canning whole tomatoes, just as was commonly done by commercial canners. Although a few recipes called for the addition of ingredients such as sugar, most of these directions for canning called for tomatoes, water, and in some cases, salt. The process sometimes differed slightly, as some called for the tomatoes to be cooked and then put in jars, and others to be cooked completely in the jars, but few home canners did more than preserve whole tomatoes, and thereby providing the cook a ready and dynamic base or addition to a wide variety of meals.

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Whether commercially packed or homemade, these products were minimally processed, maximizing its usability by the cook.\(^{18}\)

At the same time, some cooks developed more heavily processed canned tomato products, including chili sauce, tomato sauce, pulp and paste. As discussed in the previous chapter, these were not “new” products, but their preservation did represent something new, especially for sauces, which traditionally were more perishable than other preserved tomato products. Rather than limiting the use of tomatoes in cookery, however, the emergence of these products as homemade products reflected a shift in tomato cookery to use tomato purees and sauces in recipes. In effect, canned purees and sauces, whether commercially produced or homemade, simply enabled cooks to do more of their prep work in advance – while canning – rather than waiting until opening the can during the off-season.\(^{19}\)

Whether prepared in advance or from fresh tomatoes, tomato sauces continued to be seen as an important way to add variety to otherwise monotonous and bland dishes. Yet compared to the nineteenth century, the early twentieth century saw even more diverse uses and recipes for tomato sauces. Scores of tomato sauce recipes can be found in cookbooks and periodicals from the early twentieth century. Different recipes could create dramatically different taste profiles, including some that called for sugar and cinnamon and many others that included gravy, beef fat, onions, or green peppers. Most interesting about these recipes, however, is that they display a


\(^{19}\)There were also a number of canning recipes for mixed vegetables, often including tomatoes and okra, among other vegetables. These, however, were far outnumbered by both canned whole tomato recipes and sauce, pulp and paste recipes. For mixed vegetables, see Hughes, *Everywoman’s Canning Book*, 28. For tomato sauces, pulp and paste, see Hill, *Canning, Preserving and Jelly Making*, 35-6; Hughes, *Everywoman’s Canning Book*, 29; Cruess, *Home and Farm Food Preservation*, 177-8, 206, 239-40; E. Wagner, *Recipes for the Preserving of Fruit Vegetables, and Meat*, trans. Chas. Salter (London: Scott, Greenwood & Son, 1908), 91; “Meals for the Many of Moderate Means,” *Good Housekeeping* (1 Oct. 1887), 259; Scovil, “Tomatoes,” 223.
wide array of applications for the tomato. Many recipes did not specify what the sauce should be used with, but those that do make clear the wide variety of dishes that tomato sauces could be used in. Perhaps most common were recipes for beefsteaks, chops, lamb and veal. In general, these sauces tended to have a thickening agent like flour. Sauces used with seafood were also common. Cocktail sauces, much like the recipes we use today, were in use at least by 1917. Numerous other recipes existed for cod, haddock, bass and other types of fish. Unlike those intended for beef, these were generally thinner sauces, though at least one called for using “the same tomato sauce that is prepared for meats.” These sauces were not exclusively used for meat, poultry and fish, however. Recipes for tomato sauce with polenta, eggs, and cauliflower were also readily available. Thus the tomato remained seen as an important component of diversifying the diet and relieving eaters from the monotony of many dishes.20

Much like in the nineteenth century, cooked tomatoes were also often served as a side dish to meats and other staple foods. Recipes abound for “Hamburger Steak with Tomatoes” and beans and tomatoes. The latter were especially popular during World War I, when meat shortages made food substitution necessary. One particularly inventive recipe for a baked bean loaf with tomato sauce was printed during the 1910s. Stewed tomatoes, much like in the previous century, were also commonly prepared with other vegetables, including corn, okra, and potatoes. Despite being a relatively easy dish to make, essentially calling for skinned tomatoes to be

cooked down, and several spices and breadcrumbs added, cookbook writer Christine Herrick warned that stewed tomatoes prepared properly took quite a bit of time. She contended that “the flavor of the tomato is brought out and greatly improved by long stewing.” Other dishes, including curried tomatoes and tomatoes with rice were also common, and, much like in rural tomato culture, tomatoes were experimented with in a number of desserts, including tomato and cheese pudding and tomato custard. These recipes indicate a continued willingness on the part of cooks to experiment with new uses for the tomato. And, as in the case of World War I, when shortages forced cooks to devise new entrees without meat, the tomato was used to make these dishes more appetizing.21

Tomatoes also continued to be used as a complimentary ingredient in soups. Much like with sauces, these recipes often combined tomatoes with either carbohydrate staples like rice or potatoes, or sources of protein, including chicken, beef, and beans. Others called for the combination of vegetables, including okra and corn. Tomatoes were an especially important part of the development of gumbo and okra based soups from Creole cuisine that emerged around New Orleans and made their way into mainstream cookbooks. Simpler soups that combined tomatoes and rice likely emerged from a similar culinary impulse, as much of the area of the United States that grew rice, including South Carolina, also had heavy French influences. Many other recipes sought to combine vegetable-based protein foodstuffs, particularly beans, with the tomato. Recipes for tomato and bean soup were common, but others included more unlikely

21 For Hamburger steak with tomatoes, meatloaf and the bean and tomato dishes, see Florence Nesbitt, Low Cost Cooking: A Manual of Cooking, Diet, Home Management and Care of Children... (Chicago: American School of Home Economics, 1915), 87, 97; Frances Stern and Gertrude T. Spitz, Food for the Worker: The Food Values and Cost of a Series of Menus and Recipes for Seven Weeks (Boston: Whitcomb & Barrows, 1917), 92, 103, 106. For examples of stewed and curried tomatoes and dessert preparations, see Herrick, Consolidated Library of Modern Cooking and Household Recipes, 97-99; Hester M. Poole, “Vegetables,” Good Housekeeping (23 Jul. 1887), 137; Mary Currier Parsons, “Canning Vegetables,” Good Housekeeping (21 Aug. 1886), 193; D.H.R. Goodale, “Company Dinners for One,” Good Housekeeping (30 May 1885), 17; Nesbitt, Low Cost Cooking, 68; Hill, Practical Cooking and Serving, 287.
sources of protein including peanuts (or in one case, peanut butter) and lentils. The tomato was implemented in recipes most for its flavor, but, as in the case of pickles, it also served as a vehicle for culinary sharing and exploration, allowing cultural and ethnic dishes to be popularized for mainstream consumption.\footnote{For Creole influenced dishes, see Herrick, \textit{Consolidated Library of Modern Cooking and Household Recipes}, 30-1, 80; Green, \textit{Better Meals for Less Money}, 35. For rice and tomato soups, see Herrick, \textit{Consolidated Library of Modern Cooking and Household Recipes}, 87; Green, \textit{Better Meals for Less Money}, 31-2; Margaret Burroughs, “Seasonable Menus – VIII,” \textit{Good Housekeeping} (Aug. 1899), 84. For soups combining tomatoes and vegetable proteins, including beans, see Hill, \textit{Practical Cooking and Serving}, 184; Green, \textit{Better Meals for Less Money}, 33; Herrick, \textit{Consolidated Library of Modern Cooking and Household Recipes}, 47, 75-6; Nesbitt, \textit{Low Cost Cooking}, 52; “The Kitchen Table: Good Soup Without Milk,” \textit{Good Housekeeping} (Dec. 1896), 270.}

Yet, in many cases tomato preparations evolved significantly as tomato culture moved into the cities and, thus, a community of middle-class homemakers and cooks willing to experiment with a more cosmopolitan diet. An example of this is the rise of tomato soup in a vast array of forms. While the above soup recipes in many ways follow the trend set during the nineteenth century of using tomatoes as a complimentary ingredient in soups, tomato-based soups also became quite popular by the end of the nineteenth century. Many have credited companies like Campbell’s and Franco-American with popularizing soup in the United States. At least by the 1860s tomato soups were already commercially available in the United States. The initial introduction of tomato soup and Campbell’s introduction of condensed tomato soup by the end of the century certainly helped fuel an increase in tomato soup consumption, but these companies did not have a monopoly on the production of tomato soup. Wealthy Americans, who often served soups as a course at dinners, also heavily influenced the growing use of soup by the middle-class. At least by the 1880s, American cookbooks and periodicals began printing recipes for tomato-based soups. One of the most common forms of this dish was a minimalist tomato soup. These recipes called for the addition of beef stock and a number of vegetables, often including onions, carrots and on occasion beets and turnips. Otherwise, many of these recipes
were quite plain, calling for a few spices, including sugar, salt, and pepper. As one writer suggested, their simplicity is what made them wholesome and delicious, especially on a hot summer day. The increased availability of tomatoes year-round, however, also made it a popular dish even during the dead of winter. While most recipes were quite simple, appearing similar to commercially available tomato soup, others called for the addition of milk or cream in order to make a cream of tomato soup or bisque. In all these variations, tomato soup became a popular dish in middle-class homes by the 1880s and blossomed during the first half of the twentieth century. As one nutrition writer commented, tomato soup was “simple but excellent,” and these qualities made tomato soup a very popular middle-class meal. This increasingly urban middle class again embraced the advice of independent food experts. As home economists and nutritionists increasingly sought to reduce the amount of meat in the American diet by encouraging increased vegetable consumption, dishes featuring the tomato as the dominant ingredient became much more common.23

Middle-class Americans also commonly prepared stuffed tomatoes. Tomatoes were often stuffed with other vegetables, including onions, but they were also used as a vehicle for serving meat. One such recipe offered by Christine Herrick, for example, called for tomatoes to be stuffed with ham and mushrooms. Calling it “a very nice dish for a luncheon, or Sunday evening

or informal supper,” Herrick admitted that the unique qualities of the tomato made this dish very versatile. If ham was unavailable, “cold chicken or veal, or any nice cold meat may be used.” Herrick’s willingness to substitute for the other ingredients indicates the primacy of the tomato to the dish. Tomatoes could also be baked, not unlike the Irish and sweet potatoes. As American cuisine continued to expand, integrating elite cuisine with those of middle-class reformers and new immigrant cultures, middle-class Americans increasingly used the tomato not simply as a minor ingredient but as a featured ingredient in their diets. ²⁴

Recipes for stuffed tomatoes also brought out the tremendous flexibility in tomato preparations and allowed for regional and ethnic differences in culinary tastes. One recipe, titled “Tomato Farcie” (Stuffed Tomato), called for tomatoes to be stuffed with cold meat, spices, lemon juice, onion, breadcrumbs and cold rice. Then, the dish was topped with a dressing of soup stock, wine, currant jelly and extract of celery. The complexity of the dish and the use of stock as the base hint at its French influence. Elsewhere, a Sicilian version of stuffed tomatoes was offered. This dish consisted of sautéed tomato pulp with mushrooms, onion and meat. After stuffing the tomatoes, the dish was covered with grated cheese and breadcrumbs. Finally, a recipe for “Stuffed Tomatoes a la Caroline” demonstrated the importance of local agriculture in the development of cuisine. While the previous recipes called for a rather complex stuffing made from a variety of herbs and other items, this recipe, based in the Carolinas, called for only stuffing the tomato with rice, a local staple, before baking and covering with a tomato sauce. ²⁵

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²⁴ Herrick, Consolidated Library of Modern Cooking and Household Receipts, 102-3.
The Fresh Tomato

The culinary curiosity of the early twentieth century was not limited to cooked or processed tomato products but extended to raw tomatoes as well. A study of the menus of America’s premier restaurants suggests a trend from the cooked to the fresh. Already by the 1890s, the tomato was fully integrated into the menus of some of the finest hotel restaurants in America. At New York City’s Waldorf Hotel in 1897, for example, cooked and processed tomatoes were offered every day of the year. Stewed tomatoes, likely prepared from canned tomatoes, made their appearance on every daily menu. Tomato sauce, too, formed an important part of a variety of entrees, including fried calf’s brains, pig’s feet, fried mutton chops, veal, Hamburg steak, cucumbers and fried lamb chops. Tomatoes were also offered in baked and numerous stuffed forms. Most important, however, fresh tomatoes were on the menu as a hors d’oeuvre almost every day of the year. This restaurant took advantage of the trend toward the 12-month fresh tomato to offer it as an hors d’oeuvre every day until mid-November, when it was replaced briefly by hothouse tomatoes and in December by tomato pickles (except for a surprise delight of fresh tomatoes for Christmas day).

The Waldorf’s menus provide a clear indication that America’s wealthy had a growing desire for fresh tomatoes by the end of the nineteenth century. While such extravagant dining experiences were above the means of most Americans, the culinary tastes of America’s elite classes proved influential by the early twentieth century. Increasingly, just as the middle-class borrowed from elite cuisines to prepare tomato-based soups, middle-class Americans also showed a desire for luxuries like fresh tomatoes, and as the previous chapter argues, they were in a far better position to obtain them over an extended period of the year.

26 Restaurant Menu Collection, Collection 6452, Box 2, Folder 9(a), 9(b), 9(c), Cornell Special Collections Library (Ithaca, NY).
During the early twentieth century, the unique taste qualities of the tomato ensured that numerous ways of preparing and eating fresh tomatoes became popular then. One recipe, for example, called for tomatoes to be sliced and eaten raw, either plain, or with the addition of “sugar and cream as a desert.” As the author of this recipe noted, the tomato served in a sweetened dish was considered by many to be “a close rival to strawberries, the sugar and cream seeming to combine with them to bring out a flavor similar to that delectable berry.” If the cook preferred a non-sweetened version of the dish, the author warned that the tomato, due to its high acid content, “needs very little vinegar,” and excessive spicing or vinegar might irritate the mouth and stomach. Many of these dishes, such as serving tomatoes with sugar and cream as a dessert, never caught on, yet they reflect the culinary inventiveness cooks were willing to use during the early twentieth century, a trend that declined with the disappearance of the homemaker and the growing acceptance of convenience foods in the latter half of the century.27

Encouraged by the growing popularity of fresh tomatoes, one of the biggest transformations of the late nineteenth and early twentieth century American diet was the rise of salads. Heavily influenced by French cookery and the cuisine of American elites, the salad became a mainstay on middle-class tables during the opening decades of the twentieth century. Already in 1905, home economist Christine Herrick declared that “the salad is the prince of the menu, and though the dinner may be perfect in every detail, it is incomplete without a good salad.” Early forms of salads typically included only one primary ingredient – lettuce, cucumber, or tomato, for example – and were usually dressed with oil or mayonnaise. Only rarely would one find a salad with a combination of ingredients like lettuce and tomato. Dinner and banquet menus from the Hotel Bellevue in Philadelphia in 1886 and 1887, and several banquet menus

from New York City’s famous Delmonico’s in the same years list lettuce salad (or in the case of Delmonico’s “Salade de laitue”). Published recipes from the late nineteenth century also indicate this trend. One recipe, printed in Good Housekeeping in 1886, for example, described a tomato salad that consisted of sliced tomatoes topped with a dressing of oil, vinegar, mustard, salt and pepper. Likewise, in 1887 the magazine printed a recipe for raw tomatoes “as served and eaten in San Francisco.” This recipe called for tomatoes to be skinned, chilled and served topped with a “thick mayonnaise sauce.” Similar recipes continued to be printed by Good Housekeeping and other periodicals well into the twentieth century. As late as 1913, for example, the American Food Journal printed a recipe for tomato salad that consisted of sliced tomatoes, thinly sliced Spanish onions, and covered with spices and an oil and vinegar-based dressing spiced with tarragon. 

By the first decade of the century, however, salads were beginning to evolve from a single-ingredient dish to more complex mixtures of different ingredients. As early as 1895, a Good Housekeeping author reported that “one of the prettiest and most palatable dishes for a summer lunch is a fresh tomato salad.” While in the past this would have most likely indicated a salad made up almost entirely of fresh sliced or chopped tomatoes, this recipe called for each tomato to be placed on its own bed of lettuce. Thus lettuce became a principle ingredient in many salads, while the tomato became a featured ingredient, providing important diversity in flavor and texture. Good Housekeeping also reported on a dinner held for Chauncey Depew during the 1896 Presidential Nominating Convention in Chicago at Kinsley’s, dubbing it “the Delmonico of Chicago.” Shortly before announcing that he would no longer be a candidate for the Presidency,

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Depew dined on a salad consisting of lettuce and tomato. During the first decade of the twentieth century, this was a common dish at conventions and upscale restaurants. In June 1905 the upscale Hotel Astor in New York City offered “Salade de laitues et tomates” on their dinner menu. Likewise, at the Annual Dinner of the National Wholesale Grocers’ Association, held at the Marlborough-Blenheim in Atlantic City in June 1908, diners began their meal with a salad of lettuce and tomato. Likewise, the Pennsylvania Railroad offered riders a similar dish at least as early as 1911.29

By the 1910s, as home economists encouraged increased vegetable consumption and home cooks continued to expand their culinary palate, the category of salad expanded dramatically to include dozens of new potential ingredients, and increasingly, recipes for salads included two or more main ingredients. As Emma Conley reported in her Principles of Cooking, “salads are made of cold meat or fish, eggs, cheese, raw or cooked vegetables or fruits, combined with a salad dressing.” Ruth Wardall, in A Study of Foods, made a similar observation: “a salad is a wholesome and a favorite way of serving vegetables, both fresh and cooked. Combinations of meat, eggs, fruit, nuts, and cheese with vegetables are frequently made in salads.” Despite the growing complexity and diversity of salads and their ingredients, however, the tomato remained a very important part of salad culture. Whether combined with cucumbers and lettuce, stuffed with crab and served on lettuce, or served in the “Spanish” style with lettuce, cucumber, onions, pickles, and topped with French dressing, the tomato became one of the most common ingredients in the burgeoning salad culture. For Americans interested in proving their patriotism by preparing an Independence Day-themed salad, the tomato was absolutely vital. Christine Herrick, author of several volumes of recipes, provided not one but two recipes for such a salad, 29 “The Kitchen Tables: Tomato Dishes,” 253; “The Best Dinner Chauncey M. Depew Ever Sat Down To,” Good Housekeeping (May 1896), 240; Restaurant Menu Collection, Cornell Special Collections Library, Collection 6452, Box 4, Folder 74, Box 4, Folder 72. Box 11, Folder 3.
both relying on tomatoes for their bright red color. Herrick, unable to find an appropriate blue-colored ingredient, opted instead for the use of a blue serving plate. For those unable to obtain a supply of fresh tomatoes in time for Independence Day, one of Herrick’s recipes provided a solution: instead of using raw tomatoes, one could easily substitute this by creating a “red tomato jelly” from cooked tomatoes combined with gelatin. Numerous other recipes called for similar tomato jellies, one even using a mold to create a tomato aspic, typically used today to make a fruit flavored Jell-O dish.  

Whether in fresh or cooked form, the early twentieth century was a time of significant expansion in uses of the tomato by the American middle-classes, a trend that mirrored a broadening of the American diet in general. While popular uses of the tomato were heavily influenced by the tomato culture developed by nineteenth century rural cooks, new uses also emerged from middle-class magazines and reformers. Tomato dishes with ethnic influences, too, helped expand the uses of the tomato. Overall, the culinary expansion and innovation of the period was made possible by the dramatic surge in tomato production and the success of the fresh and processed 12-month tomato. Rather than limiting the American diet, the industrialization of the tomato encouraged culinary creativity and the expansion of middle-class food culture.

The Italian Tomato, 1880-1945

Others, especially immigrants, shaped America’s early twentieth century tomato culture. Several ethnic groups brought tomato culture to America. Spanish, Mexican, and even German and Polish immigrants utilized tomatoes in a number of meals, but none were as important as the

influence of Italians on tomato culture in the United States. The sudden influx of Italian immigrants that reached American shores after 1880 laid the foundation for significant cultural influence. Despite the efforts of nutritionists and reformers to “Americanize” and standardize the immigrants’ diets during the period, Italian immigrants went their own way, creating an Italian-American cuisine that was a mixture of their local, Italian food habits with the American environment. The result was a distinct cuisine that not only defined the food culture of Italian immigrants and their offspring, but also had an extensive influence on new American eating habits. Americans of every stripe embraced pasta and other Italian uses of the tomato.

Between 1870 and 1945, at least five million Italian immigrants arrived in America. Interestingly, the Italians that came to America during the late nineteenth and early twentieth century did not eat “Italian” food. As numerous historians have commented, even after the Italian nation was created in 1861, Italy was more a political construction than a cultural reality. For most, including peasants, “there remained nothing of ‘Italy.’” Indeed, as Donna Garbaccia argues, “no sooner did Italy have its own state than Italians began to abandon it in record numbers.” The Italian immigrants that flooded America during the late nineteenth and early twentieth century brought with them regional cuisines and culinary ideas. Northern and Southern Italy, especially, had fairly distinct cuisines. Ironically, as David Gentilcore argues, modern Italian food as a unified cuisine was in many ways constructed in the United States by Italian immigrants. Gabaccia argues that this is true of Italian culture more broadly, as “it is quite possible that peasants and workers more often came to think of themselves as Italian while abroad than at home.” But, this was especially true of food, given the primacy of food in Italian-American culture. The Italian-American cuisine that emerged in the United States was created by Italians, for Italians, and was an evolution of regional and local cuisines in Italy combined with
the abundance of food available in America. In the words of Hasia Diner, “by engaging with American food realities, immigrants created an Italian American cultural system heavily centered on food.” In America during the late nineteenth century, far more than in Italy, Italians of different regions blended in cities and shared their culinary traditions and created a new cuisine, distinctly Italian but heavily shaped by the American environment.31

The first Italian immigrants to arrive en masse to American cities were mostly men, often hoping to save enough money to return to their homeland with money in their pockets to spare. Despite the lack of women, who, like in America, were the traditional food preparers in Italy, these Italian men worked together to prepare their own food. Often living together in groups in boarding houses, these men resisted the urge to simply adopt the eating habits of their new homes, and ate food that mostly resembled their traditional fare as much as possible. In many cases, groups from the same regions, and even towns, gathered together, allowing them to stay true to their own regional and local diets. When this was not possible, they almost always stuck with other Italians, allowing them to exchange and share their different regional and local diets and form a suitable compromise. In many cases, Italian neighborhoods were virtually self-sufficient, and immigrants had little need or desire to leave them. As women arrived in the country, as one immigrant named Rosa recounted, they typically filled the role of food preparer.

Even as Italian families began to settle and find their own homes, they often took in Italian immigrants as boarders, who they generally accepted as part of the family.\textsuperscript{32}

Replicating “Italian” cookery in America was difficult, especially given that Italian (and even regional) cuisines were in flux just as immigration rose in the late nineteenth century. Pasta, a Neapolitan specialty dating back to the sixteenth century, was transitioning from a very soft (even overcooked) dish topped with dry ingredients like nuts, or cheese, or served with milk or cream, towards a more lightly-cooked version with liquid sauces, including tomato sauce. The tomato, likewise, while already widely consumed, was just beginning to be served as a sauce on pasta during the 1850s, just a few decades before the rise in immigration to the United States. Much like in America, the full integration of both pasta and tomatoes into Italian diets did not take place until late nineteenth century industrialization increased access by reducing the cost of production. Thus, Italian immigrants to the United States, especially those arriving before 1900, had less than a generation of spaghetti with tomato sauce being a tradition in Italian cuisines.\textsuperscript{33}

Thus just as Italians from different regions and localities of Italy came together in American cities and created Italian-American cuisine, the popularity of pasta with tomato sauce was greatly increasing in Italy. Some of the largest groups of immigrants came from southern Italy, where pasta and tomatoes were most prominent. This helps explain the popularity of pasta and tomato sauce among these immigrants, but immigration came from every part of Italy. The Italian-American restaurant, which also appeared during the late nineteenth century, brought together the culinary ideas of Italian immigrants and helped create a relatively consistent food culture that appealed to commonalities in different regional styles. It was a commercial


\textsuperscript{33} Gentilcore, \textit{Pomodoro!}, 71, 76, 78-9.
establishment designed as an alternative to boarding house cooking, and thus sought to find a common denominator in the food preferences of its customers. Given the importance immigrants placed on food, these restaurants quickly became important cultural institutions in Italian-American neighborhoods of American cities. Italian restaurants popped up in American cities from New York to San Francisco, and from Chicago to Tampa. These restaurants catered to Italian, rather than American eaters. At least into the 1920s, these Italians restaurants’ main clientele were Italians.\(^{34}\)

The developing Italian-American cuisine was affirmed and reinforced by other cultural institutions, including the Catholic Church, mutual aid societies, and community festivals and gatherings. At Italian-American gatherings food, rather than alcohol, was the centerpiece. Food, too, was an integral part of religious life from baptism to the funeral. Meetings of community organizations commonly featured large amounts of Italian food. Community festivals, often held on religious holidays and other days important to Italians, helped present a unified Italian cuisine. In the words of one scholar, “the \textit{feste} showcased the emergence of an Italian consciousness in America through food.” In most cases, these institutions remained popular with immigrants’ children. Despite their gradual acceptance of many American ideas and consumer goods, second and third-generation Italian immigrants by and large held fast to the culinary ideas practiced by their parents and grandparents. Even in later generations, one scholar argues, “most [Italians] prefer pasta over potatoes and wine over beer or hard liquor.” Over time, many Italians came to celebrate Thanksgiving with a turkey, but they did so after eating an antipasto salad, and

\(^{34}\) Diner, \textit{Hungering for America}, 75.
the turkey was served alongside Italian dishes like spaghetti or lasagna, and it was followed up with Italian desserts like spumoni or cannoli.35

The influx of Italian immigrants to the United States came at the same time that American food industries were beginning a massive expansion. Despite this, “authentic” Italian food was placed in high enough esteem to warrant large imports of a number of foodstuffs into the US from Italy, including Italian-style tomato products. Already in 1878, more than 132,000 pounds of tomato paste were exported annually from Italy, and most of this was sent to the United States. In 1905 more than 11,000 tons of tomato paste and concentrate were exported from Italy, and this number peaked in 1929 when 150,000 tons were exported. Not all of this ended up in the US, but since Italians living abroad were the primary outlet for these exported goods, America took in a large portion, perhaps close to half of total exports. When these exports were cut off during World War I and World War II, Italian immigrants led the way in fulfilling the need for new supplies of these goods. By the late 1930s, as historian David Gentilcore points out, a dozen Italian-American companies producing tomato products in California exceeded the total volume of tomato products imported from Italy. In many ways, Italian immigrants had better access to tomato products than Italians back home. Their increased consumption of tomato products, then, “was a hybrid that in sometimes paradoxical ways looked back to Italy while taking advantage of what the new continent had to offer.”36

Italian-Americans did not simply rely upon their home country to provide them with familiar foodstuffs. They also actively developed their own markets, farms and canneries to grow and distribute foods suitable to their culinary tastes. Very early on Italians practiced truck

farming outside of Italian enclaves in American cities, and a significant number of Italians
distributed that produce via pushcarts. Even in Mormon-dominated Utah, Italian immigrants
produced and distributed their own produce and other foods in order to follow their own culinary
desires. Italian-American food stores also became increasingly common during the early
twentieth century. These stores helped produce an image of a unified, national Italian cuisine.
While Italian food stores continued to cater to regional differences, as early as 1900, according to
historian Hasia Diner, “merchants linked the food they sold to the idea of a nation, embellishing
the word ‘Italian’ with such adjectives as ‘fine,’ ‘fresh,’ ‘genuine,’ ‘imported,’ ‘real,’ and
‘tasty.’” By doing so, and by offering credit to marginal members of the community, much like
other cultural institutions, these stores “wound the fabric of the community around food.”

In the opening decades of the twentieth century, the establishment of Italian-American
producers of pasta, tomato products, and other foods supplemented the efforts of vendors and
merchants. Italian immigrants quickly established pasta industries in their new host countries.
This was especially the case in the US, where inexpensive and plentiful wheat encouraged the
development of a large pasta industry in the late nineteenth century. During the 1920s, American
pasta production doubled, and imports dropped by 92 percent. Most of these factories were in
states with large Italian populations, including New York, California, Illinois, and Pennsylvania.
These American companies, often started as small immigrant ventures, also revolutionized the
packaging of pasta. Whereas in Italy most pasta was packed in bulk, often coming in boxes of
close to 100 pounds, demand for smaller and more sanitary packages led American producers to

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produce pasta in one pound containers. After 1920, cellophane packaging was used to draw out the aesthetic quality of pasta while keeping it safe from contamination.38

Elsewhere, Italian-Americans succeeded in creating large concerns dedicated to the production and distribution of produce and canned vegetables. Del Monte, a large producer of canned whole tomatoes during the early twentieth century began as a small immigrant concern. Marco J. Fontana, a former employee of a small cannery, A. Galli and Company, opened his own cannery in his home kitchen. After numerous years of financial struggle, Fontana played a big role in the formation of the California Fruit Canners’ Association, which came to can under the Del Monte name (originally in reference to a northern California hotel, not an Italian family). By the late nineteenth century, Del Monte employed several hundred employees during the peak of the season, most of them women. Also in the San Francisco area, Italians in the 1870s opened the Colombo Market, which provided a huge space for the sale of fruits and vegetables. While catering to a wide customer base, one historian notes that “they helped introduce many foods popular in Italy to the region.” This venture also helped create a unified Italian fare, as Italians from a variety of regions in Italy came together and crafted a unique “Italian and Italian American entity.”39

The development of more heavily processed tomato products, most notably tomato paste, was also the result of Italian immigration. Before World War I Italian companies exported tomato products to the United States. During the early twentieth century, Italy exported somewhere between 13 and 20 thousand tons annually, primarily to countries with high numbers of Italian immigrants. Despite the large tomato canning industry in the United States, Italian companies focused on the production of goods other than canned whole tomatoes, the primary

39 Diner, Hungering for America, 64, 66; Gumina, The Italians of San Francisco, 101, 103, 135.
product of the American industry. Italian producers packed unskinned whole tomatoes (Pomodoro al natural), tomato sauce (Salsa Pomodora) and peeled whole tomatoes (pomodoro pelati). But the major imports from Italy were tomato paste and tomato puree. These products were especially popular among Italian immigrants for a wide assortment of pasta dishes. By the 1910s, and especially after the outbreak of war in Europe cut off the Italian supply of these products, American producers became interested in manufacturing these products at home for American consumption.40

There were a variety of practical reasons for the production of more concentrated tomato products. One of the more common claims among those discussing the value of the production of tomato paste was that it would greatly reduce waste. Proponents argued that while only about five percent of the tomato was legitimate waste, including the skin, core and seeds, upwards of fifty percent of the tomato was wasted in the production of canned whole tomatoes as eliminating the undesirable parts of the tomato led to the loss of most of the juices. One writer during World War I argued that housewives would not only save 50% on their tomato bill by purchasing paste, but also serve the nation by reducing waste.41

Producing paste had other advantages as well: it greatly reduced labor costs as the processes of removing the skins, seeds, and core could finally be mechanized. Without the concern for damaging the tomatoes, they could be cooked, crushed, strained and boiled down via machines rather than human hands. And “since no hands touch the product” from the time the tomatoes enter the factory until canning is completed, proponents of tomato paste claimed that it was more sanitary. Further, since it is a concentrated product, paste production also saved space in storage and transportation. As J.H. Shrader argued, “a 6-oz. paste can contains practically the

equivalent of a 32-oz. ordinary tomato can.” This not only relieved the burden of transporting tomatoes, and thus reduced shipping costs, it also allowed canneries to process more tomatoes during the peak of the harvest, as one of the main problems facing tomato canners was storing their canned tomatoes immediately following canning them. Finally, despite it being a more heavily processed tomato product, tomato paste still gave cooks great opportunity to shape the product to their needs and desires. Diluted in water, tomato paste could be turned into a sauce, added to stews or soups, and spiced appropriately. While it reduced some of the skill and labor of the cook, as it was no longer necessary to boil down tomatoes to produce a puree or sauce, tomato paste retained much of the creativity that skilled cooks desired. Tomato paste was often favored among Italian immigrants and those of Italian descent, and increasingly, by the 1940s and 1950s, it was favored among other American consumers as well.42

Early twentieth century Italian-American cooking is surprisingly hard to catalog. Many of the studies of Italian immigration and immigrant life pay little, if any, attention to Italian cooking, despite its prominent place in Italian culture. And, as Donna Garbaccia notes, there were very few Italian-American cookbooks published during the early twentieth century. One of the few, and more popular, was *The Italian Cookbook*, published in New York in 1919 by Maria Gentile in an effort to popularize Italian food in America. Here, as to be expected, the tomato figured prominently. Primarily used as a sauce, the book suggested that it was a good addition to pastas of all kinds including spaghetti and ravioli, as well as a sauce for chicken and other meats.43

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Italian-American cookery relied upon the tomato as more than just a sauce. Niccolo de Quattrociocchi, one of the many Italian immigrants who went on to open their own restaurants, was a lifelong collector of recipes and published many of his favorites in his memoir. In addition to Neapolitan and Sicilian-style spaghetti and spaghetti with meat sauce, Quattrociocchi also gave recipes for Italian Antipasto (salad), Lentil Soup, and “Pasta E Fagioli” soup, all with tomatoes as a major ingredient. Thus, like many other Italian immigrants and entrepreneurs, the tomato formed a vital part of Quattrociocchi’s understanding of Italian-American food.44

Thus during the first half of the twentieth century, as Italians came to the United States in record numbers, they brought with them ideas about cooking and eating. These ideas developed in the United States as a unique culinary culture, one based on the memory, sometimes constructed, of their homeland, and adapted to fit their new American environment. Italian Americans were not, as some have suggested, simply an isolated ethnic enclave but instead a vibrant ethnic community that built their own culture based on a blending of old and new. In constructing their cuisine, Italian-Americans relied heavily on the tomato, a food many had not had regular access to in Italy, and tomato sauce, a dish popularized in Italy just prior to Italian immigration. Tomato and pasta dishes were also adapted to the American environment with the addition of meats, especially beef, which were much less plentiful in Italy. Indeed, just as pasta became the prominent source of carbohydrates in many Italian-Americans’ diets, and meatballs, sausage, veal and others became a major source of protein, the tomato, primarily in the form of tomato sauce, became a vital flavoring agent and source of vegetable-based nutrients.45

Despite the efforts of reformers to “Americanize” the immigrant diet, Italian-Americans had not only created their own cuisine, but had also influenced the larger American culinary

45 Briggs, *An Italian Passage*, xvi, 5-6, 156-7.
culture. As early as the 1910s, Italian-influenced dishes received regular attention in American cookbooks and periodicals. By far the most common recipe printed was for “macaroni and tomato sauce.” Occasionally recipes were printed for tomato and pasta soups as well as ravioli. During the 1920s, Italian-American restaurants became popular among bohemian urbanites; and by the 1940s and 1950s, American families across the country enjoyed at least an occasional Italian-American meal. In the 1970s, *American Cooking: The Melting Pot*, a volume containing a wide-variety of traditional and ethnically inspired meals popular in America, reflected the broad acceptance of Italian-American food into mainstream American culture. Despite the diversity of the contribution of Italian-American cuisine to the US, the most important innovation of Italians in America was to combine spaghetti with hamburger meatballs in a tomato sauce, producing the quintessential fast Italian dish that was the signature item on the menu of Italian restaurants by the 1920s. This was not intended solely to attract an American audience. Quattrociocchi, upon first trying the dish, found it “extremely satisfying,” and felt that “someone in Italy should invent [it] for the Italians over there [in Italy].” Yet the inclusion of the meatball into spaghetti also helped Italian-American cuisine appeal to a wider audience, combining Italian spaghetti with the American love of beef.46

The emergence of the tomato as a staple in Italian-American cuisine benefited from the preexisting tomato culture in the United States. The acceptance of the tomato as a condiment (ketchup) and a form of soup meant that Americans had already accepted the tomato as a useful article of the daily diet. By the end of World War II, despite the efforts of reformers to “Americanize” the diet of working-class immigrants and the middle-class, spaghetti and

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meatballs, the stereotypical Italian-American dish, along with numerous other Italian-American influenced dishes, were accepted on the American dinner table. Tomato paste was likely available on most grocers’ shelves by the 1930s and pasta with tomato sauce was a quick, easy to prepare, and tasty meal (with an appealing mixture of textures and flavors). The tomato, along with pasta, formed the basis for this new cuisine, and American acceptance of Italian-American cuisine propelled the tomato to an even higher place in American cuisine.47

The Homegrown Tomato, 1914-1945

The historical coincidence of the discovery of vitamins and the outbreak of World War I played a critical role in how the United States government approached providing the necessary foodstuffs to American citizens while feeding soldiers at the front. For the most part, with shortages of staples like meat, wheat, and sugar, the United States government encouraged Americans to increasingly rely upon fruits and vegetables to satisfy their nutritional needs. Yet, the United States government also bought a significant portion of the commercial supply of canned vegetables to supply Europe and the soldiers of the Allies. In 1917 and 1918, the United States government purchased almost a quarter of the pack of canned tomatoes, and in 1919, with a significantly smaller pack, the government acquired more than forty percent. During World War II, in 1943, federal government purchases of canned vegetables totaled nearly sixty percent of total production, and fifty percent of canned tomatoes, drastically reducing the availability of canned tomatoes from 33.5 to 17 pounds per capita for the civilian population. In 1945, the supply of canned tomatoes to the American public was reduced by fifty percent yet again. During

47 Herrick, Consolidated Library of Modern Cooking and Household recipes, 23-4, 61; Stern, Food for the Worker, 93; Holt, The Complete Housekeeper, 157; Parker, “Some Seasonable Dishes,” (21 Aug. 1886), 187; “The Kitchen Table: Good Soup Without Milk,” 270; Maria Parloa, “Ten Mornings in the Kitchen,” Good Housekeeping (Jul 1891), 1. For a similar argument on the failed “Americanization” of Italian immigrant food culture, see Donna Gabaccia, We Are What We Eat.
both World Wars, the American government conducted a massive campaign to encourage citizens to grow their own produce. Because of its appetizing taste, its ability to be grown in gardens in every part of the country, the ease with which it was preserved, and because it could be integrated into a wide variety of dishes, the tomato was the most popular vegetable grown.48

Of course, home gardening and canning long predated the World Wars. While urbanization reduced access to garden plots, the strong surge in home gardening during both World Wars suggests that American gardening culture remained vibrant. Further, this gardening culture provided a deep connection between rural America and a rapidly expanding urban and suburban culture. Immigrants groups also continued their gardening traditions as a vital connection to their past, often going to great lengths to secure harvests in urban settings. As Americans moved into cities and towns, they brought with them both their gardening experiences and traditions and their specific ideas of tomato cultivation and cooking.49

Also beginning during World War I, government officials and food reformers encouraged greater consumption of fruits and vegetables. In part, this was motivated by the desire of officials to improve the American diet, given the discoveries of the benefits of vitamins in fruits and vegetables. And, as many proponents of home gardening suggested, vegetables and fruits gave “a pleasant and varied flavor and texture” to meals. Another writer noted that “an increase in the use of vegetables and fruits is practically sure to mean an increase in health” and thus a more fit nation for the struggles ahead. Gardening, then, fit into the general reform impulse of the period, which emphasized healthier diets and culinary curiosity and expansion. Yet, increased vegetable


49 Gabaccia, We Are What We Eat, 52-3.
consumption and home gardening were seen as critical components to winning the war. By substituting vegetables for meat and grains, American citizens could do their patriotic duty to increase the amount of staple foods available for soldiers in Europe while also benefitting from a healthier diet.\textsuperscript{50}

In addition to simply being told to consume vegetables, an important part of the war effort for many civilians was to actually produce food for home consumption and to preserve this food for the off-season. This fit well with the effort to reduce food waste, where each citizen was asked to see “to it that not one bit of food is wasted,” because “the nation whose food resources are best conserved will be the victor.” Gardening was an extension of this policy: by growing one’s own food, a gardener reduced their (and their family’s) reliance on commercially produced food. One writer noted that vegetables “can be produced in quantity in three or four months on unused land by labor that otherwise might not be used.” By doing so, consumers could help relieve railroad traffic and “releases staples for Europe.” But given that the United States government bought a substantial amount of the commercial pack of canned vegetables, Americans were also asked to preserve their own vegetables. Housewives were asked to secure their own winter supply of fruits and vegetables, which could “take on special significance because of their substitute value if the supply of staples runs critically low.” Thus growing and preserving food became an act of patriotic duty and a challenge in which many Americans fulfilled.\textsuperscript{51}


Americans responded quickly to the dwindling supply of canned vegetables and called for home production as a form of patriotic action. In 1917-18 Americans produced almost 530 million pounds of vegetables in more than 5 million war gardens. One college textbook entitled *Food and the War* reported the tremendous steps taken in 1917 to produce vegetables for the war effort. Kids and other young people in Indiana reportedly tended half a million gardens. Eight thousands acres in and around Los Angeles were planted with vegetables, along with twelve thousands New York City lots. In Cleveland, with the support of local officials, who provided financial aid for tools and seeds, an estimated $300 thousand worth of vegetables were produced. Overall, the total value of war garden vegetable production was estimated at more than $350 million, and the production in children’s gardens were estimated at $100 million alone. During the Second World War the government asked even more Americans to augment the supply of commercially produced vegetables with Victory Garden vegetables. In 1942, there were an estimated fifteen million Victory Gardens. By 1944, the United States government was calling for twenty two million Victory Gardens throughout the country, including 450,000 in the New York City area. Overall, in 1943 Victory Garden production accounted for almost half of fresh vegetable production in the entire country. The *New York Times* revealed the irony of the situation during World War II: “the more victories the Allied nations win in Europe… the less food the American people will have.” The solution to this problem was deemed to be the active citizen cultivating their own gardens and preserving their own food.52

Throughout the Second World War, approximately two-thirds of the Victory Gardens were built in cities, suburbs and towns, rather than on farms. These gardens sprang up in

backyards, on skyscraper balconies, and on empty lots in major cities, including a large field of corn and tomatoes planted on the corner of Sixth Avenue and Fifty-Second Street, in the heart of Manhattan’s nightclub district. While it is difficult to assess the total production of tomatoes in Victory Gardens, the relative ease of growing them in a variety of conditions and environments and their popularity as a food combined to make them one of the more popular Victory Garden crops. One observer even labeled them the “Queen” of Victory Gardens, second only to sweet corn. Experts estimated that a family of four would need the produce from three dozen tomato plants in order to supply the family for the entire year. Elsewhere, home economist Esther Grayson recommended that a family of four preserve no less than sixty quarts of canned tomatoes and between sixty and two hundred pints of tomato juice in order to save a sufficient amount for the winter.53

Thus even as the World Wars facilitated tremendous growth in the tomato processing industry, it was still necessary for consumers to produce their own and indeed to find new ways of using the tomatoes they produced. While scholars have focused significant attention on consumers’ attempts to gain access to consumer goods and to ensure reasonable prices, through such programs as the Office of Price Administration, little attention has been given to consumers’ efforts to produce their own food, and thus to reduce their reliance upon a market strained by war demands. Moreover, this surge of home gardening encouraged innovation in the use of tomatoes and other vegetables. New York Times columnist Jane Holt regularly provided recipes catered to the bounties of the Victory Garden. These recipes varied widely, from stuffed tomatoes and a casserole containing eggs, cheese and tomatoes, to Spanish rice and scalloped

onions and tomatoes. Esther Grayson argued that the Victory Garden promoted increased salad consumption, providing virtually every ingredient necessary for fresh salads. Holt even argued that Victory Garden produce should be used, not simply to provide basic foods, but to diversify and spice up the American diet. Offering readers a recipe for a tomato-based chili sauce, Holt argued that “Home-made condiments can hardly be called essential to a wartime diet, and yet they offer a pleasant way to vary it.”

At the same time that urban Americans were learning to enjoy the fresh bounty from their Victory Gardens, they were increasingly urged to learn the traditional practice of preserving their autumn spoils for the winter. Rectifying food shortages required urban consumers to create their own 12-month tomato. Canning demonstrations were held in cities throughout the United States, and the production of home canning equipment grew tremendously during the war. When shortages of equipment limited consumer access, community canning centers emerged to provide women with access to the equipment necessary to preserve their Victory Garden tomatoes and other vegetables. In 1917, for example, there were 142 community canning centers in North Carolina alone. In New York State, more than 100 opened. Westchester County, alone, had 18 that put up a combined 30,000 quarts of food.

Americans’ experience with gardening during the first half of the twentieth century encouraged Americans to experiment and vary their diets in order to maximize nutrition and

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experience the pleasures of doing it themselves and freedom from dependence on the market. While many Americans were regular gardeners, there is little doubt that during each World War home gardening became more popular, as intermittent or new gardeners sought to help solve the nation’s, and their own, food shortages. At the same time, the surge in gardening during the World Wars taught many Americans the value and significance of producing their own food. “Joe Novice”, a New Yorker, planted his first garden with his wife during the war. Planting the garden to fulfill their patriotic duty, the Novices soon realized that gardening allowed them to become artists, to be “creative, producing things that never have existed before.” It forced the Novices and others to think about the quality of the produce they bought in the stores. “Their vegetables,” reported the New York Times, “fresh from the garden and wet with the morning dew, are more toothsome and pack more vitamins than the finest green produce that can be bought in the stores…” While this experience certainly did not radically alter Americans’ attitudes towards the food they purchased in the store, it did invite them to at least consider alternative definitions, understandings and ideas about the food that they consumed, and it offered them new perspectives and opportunities to explore how their tomatoes could be prepared and consumed. It invited, even forced, many Americans to contribute to the continual development and evolution of their own food culture. The tomato, the “Queen of the Garden,” benefited greatly from these changes in American culinary culture.  

The Pre-packaged Tomato:

Despite the prevalence of both fresh and minimally-processed canned tomato products and the continued importance of home gardening, by the 1920s, ready-made meals – including soup and canned spaghetti with tomato sauce – had begun to grow in popularity. By the 1950s

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56 Robbins, “15,000,000 Victory Gardens,” 15, 25.
ready-made food products became mainstays on the shelves of the rapidly expanding supermarket industry. Their growth, however, was relatively limited before World War II, and thus reflects more a trend in American food culture more prevalent during the postwar period.

While commercially produced ketchup became popular during the late nineteenth century, and canned tomato soup was widely consumed by the early twentieth century, the 1930s saw a dramatic rise in more substantial ready-made foods. Unlike soup or ketchup, which were not seen as a complete ready-made meal, products like canned spaghetti with tomato sauce were not intended as condiments or side dishes but instead as complete heat-and-eat meals. These foods represented a very new way of thinking about food, one that became accepted by mainstream American during the 1950s and 1960s. Ready-made meals minimized the importance of the cook. Preparing, mixing, spicing, and thoroughly cooking the dish was unnecessary. On the stovetop, it could be heated and consumed in a few minutes.

Historians of the industrialization of food in America have long concerned themselves with the rise of such products, lamenting the loss of unique food cultures and cooking habits in America. Many of these scholars, including Harvey Levenstein, see this trend as part of the larger nutrition and home economics movements of the late nineteenth and early twentieth century. According to this view, close ties between the nutrition and home economics movements and emerging food corporations led to a corporate takeover of American food culture. While the trend towards pre-packaged, ready-made meals is significant by around the turn of the century and even more so during the interwar years, their real success came later than the “Golden Age” of both the nutrition and home economics movements. Early examples of these types of products, including Campbell’s soup, have been overemphasized, as the previous chapter suggests. Moreover, the growing trend in the consumption of ready-made meals, rather
than being created or nurtured by reformers, was the result of very real circumstances of poverty originating during the Great Depression led many consumers to buy convenience foods for the first time, as it was often possible to prepare a meal from processed foods more cheaply than from scratch. Likewise, while Ernest Dichter suggested in 1952 that Chef Boy-Ar-Dee appeal to homemakers’ desire to “have tonight or tomorrow night off” in selling its ready-made products, the increased percentage of women working outside of the home by the 1950s and 1960s, as well as family’s having less time to spend together for meals, helped make the postwar period one in which convenience foods and other quickly prepared meals dominate.\textsuperscript{57}

Thus the commercial growth of canned soup and ketchup was topped during the 1930s with the popularization of ready-made meals like canned spaghetti. Franco-American was probably the first company to introduce canned spaghetti, and Heinz followed suit by the 1920s. The product was not widely consumed, however, until the end of the 1920s, when Italian immigrant Ettore Boiardi successfully introduced, marketed and branded Chef Boy-Ar-Dee canned spaghetti.\textsuperscript{58}

Ettore Boiardi emigrated from Italy to New York City in 1917, eventually relocating to Cleveland where he opened an Italian restaurant, Il Giardino d'Italia, in 1926. After repeated requests for prepared meals by his customers, he began selling prepared meals at his restaurant. He packaged uncooked spaghetti with cheese and his popular tomato sauce in empty milk bottles. Demand continued to grow, and he soon relocated to Milton, Pennsylvania where he established a canning facility where he packaged under the name “Chef Boy-Ar-Dee.” By the 1930s, in the midst of the Great Depression, Chef Boy-Ar-Dee was distributed nationally at A&P

\textsuperscript{57} Levenstein, \textit{Revolution at the Table}; Ernest Dichter, Letter to Charles Feldman, Young and Rubicam, Ernest Dichter Papers, Box 10, 264E, Hagley Museum and Library (Wilmington, DE), 1.

\textsuperscript{58} Gentilcore, \textit{Pomodoro!}, 131.
stores, and had become a national brand. During World War II, Chef Boy-Ar-Dee had become so popular that it was distributed to American GIs in military rations.\(^{59}\)

The growing popularity of ready-made meals during the 1930s and beyond represents a much larger shift in American culinary habits than the flood of industrial changes that preceded it. Ettore Boiardi developed and marketed an Italian (or perhaps more accurately, Italian-American) dish for mass consumption. In so doing, he popularized a homogenized, relatively bland idea of Italian food to the American public. At the same time, Boiardi’s product undermined the role of the cook, creating a product that even the most unskilled cooks could prepare. While the emerging ready-made meal industry commonly touted the convenience and timesaving qualities of such food products, it also resulted in the homogenization of the diet towards bland food and a deskilling of cooking. With ready-made meals, opening a can and heating the contents became the primary skills necessary for meal preparation. In the decades following World War II, ready-made meals became increasingly popular, with far more serious consequences for American culinary culture.

**Conclusion**

There is little question that the period from 1870 to 1945 was pivotal in the development of American food industries and American culinary ideas. Previous scholarship has focused primarily on the standardization and “Americanization” of the American diet. This, in many scholars’ view, was the direct result of the development of food industries and the actions of government, nutritionists, home economists and social and cultural reformers. In this view, American culinary culture was homogenized and ethnic cuisines and eating traditions undermined as early as 1920. In all, consumers of food, and especially cooks, have been depicted

\(^{59}\) Ibid., 131; Email correspondence between Conagra and the author, received 25 Oct. 2012.
as relatively marginal actors, almost entirely passive as other actors shaped American cuisine outside of the home, and forced it both into the home and onto the kitchen table.

The story of the tomato offers a very different story, one in which consumers and cooks participated in the making of culinary culture alongside nutritionists, government policymakers, corporate interests and social reformers. The initial development of tomato-based food products was radical only insofar as it greatly expanded Americans’ access to the tomato, especially during the winter and spring. The legacy of expanded tomato production and the emergence of the 12-month tomato, both in fresh and canned forms, then, was not the “Americanization” of food culture, but instead, a highly personalized, domestic, and aesthetically rich tomato culture. There were certainly downsides to large-scale production of both fresh and canned tomatoes: fresh tomatoes hauled across the country were often of low quality. Similarly, canned tomatoes, especially after the introduction of pulp, puree, and paste, could mask low quality tomatoes from consumers’ eyes. Yet the largest effect of the development of the 12-month tomato and increased tomato production was to expand consumer access to the tomato, opening the way for this culinary revolution. Throughout the late nineteenth and early twentieth century, the tomato, like many other vegetables, became fully integrated into the American diet. Quite contrary to the “Americanization” thesis, then, the story of the tomato reflects a vast expansion of the American diet during this period. The middle-class American homemaker especially adopted new and surprisingly diverse uses of the tomato, whether canned or fresh.

The tomato also illustrates the permeability and adaptability of culinary culture. Some might view this as a bad thing. Certainly many early scholars of American food history lamented what they saw as a break with “traditional” American food habits during the late nineteenth century. But, food culture, much like culture more broadly, should not be perceived as stagnant
and unchangeable. Native-born Americans and immigrants during the late nineteenth century operated within the environment in which they lived, and developed cultural institutions, including cuisine, accordingly. The lack of culinary traditions in America compared to many European cultures enabled not simply corporate influences, but also cultural sharing. The tomato served as an intermediary between different cultures that were emerging in the United States, especially with the New Immigration after 1880. Just as the tomato’s acceptance in America benefitted Italian immigrants by ensuring their access to the tomato, the importance of the tomato to Italian cuisine helped mainstream America become more accepting of Italian-American cuisine. Eventually by the postwar period, America had adopted several Italian-American dishes as their own, including spaghetti and pizza. While the concept of America as a “melting pot” has long been dismissed, to the extent that it existed concerning food in the early twentieth century, the tomato was one of its major ingredients.

This period also saw the rise of several important tomato-processing companies, including Campbell’s, Heinz, and Chef Boy-Ar-Dee, who produced not minimally-processed tomato products, but heavily-processed, heat-and-eat foods. The introduction of these products is important as they reflect the emergence of a trend that became prevalent during the second half of the century. Until World War II, however, their importance was overshadowed by the dramatic expansion of access to fresh and minimally-processed tomato products which in turn fueled a revolution in tomato consumption, encouraging Americans from a wide variety of groups, including food reformers, middle-class Americans and immigrants, to further incorporate the tomato into American cuisine.
Chapter 5

‘A Poor Tomato is Better Than No Tomato’:
The Harvester and the Commodification of the Tomato

The tomato industry, which had long thrived off a system based on economic and geographic decentralization, reversed course after World War II. While both the fresh and processed industries were models for a workable alternative to the centralization within other food industries during the late nineteenth and early twentieth century, by the second half of the twentieth century the tomato industry joined the others with a vengeance. By the end of the twentieth century, domestic tomato production was centered in two states, California, which focused almost exclusively on processing tomatoes, and Florida, which produced the majority of the nation’s winter and off-season fresh tomatoes.¹

A number of critical factors help explain the dramatic shift towards geographic centralization and economic concentration. The loss of prime farm land due to suburbanization in the Mid-Atlantic and Midwest drove many tomato growers out of business in these regions. Labor shortages across the nation during World War II and in the decades that followed were an impediment to the industry, and ultimately helped lead to mechanization and other technological innovations. Government and private research related to breeding, processing and transportation, which had previously been a focus of many states and the federal government’s agricultural programs, disappeared, as just a few states and increasingly, private companies, constituted the vast majority of tomato related research.

More important, however, these changes in breeding, growing, harvesting, and processing tomatoes themselves contributed to a much larger story in American culinary history.

Deborah Fitzgerald has argued that the industrialization of agriculture, which began in earnest by the 1920s, was the result of complex “technical, social, and ideological relationships that both created and sustained the change.” I argue that industrialization was not only confined to the economic and technological structures of production – machinery, chemicals, lending industries, and so on – but instead encompassed new ways of thinking about and encouraging consumption. The importance of the tomato industry during the postwar period is not simply that it succumbed to the pressures placed upon other foods earlier in the century, but that these changes helped lead to a near complete commodification of the tomato and made the tomato a key player in the rise of a new food marketplace after 1945. The changing American food culture increasingly focused on heavily processed, often heat-and-eat, convenience foods. With mechanization and new varieties, the tomato became more uniform and significantly cheaper to produce. Tomato paste, a product introduced in the US as early as World War I, became more popular, and became an industrial raw ingredient – an interchangeable, standardized product – for most tomato-based goods, including soups, sauces and juice. Complementing this increasingly west coast commodity was the mass-produced fresh tomato of Florida culminating in the cellophane wrapped, tube.  

These industrial and agricultural changes combined with the growing popularity of several tomato-based dishes, including spaghetti, pizza, and even French fries, served with ketchup, made the tomato increasingly popular in American kitchens and restaurants. Other factors, including freezing technology, the proliferation of kitchen appliances like the home freezer, and the reduced time available to cook dinners as women pitched aside their aprons and joined the workforce, contributed to an American culinary culture increasingly based on

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2 Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven, CT: Yale University Press, 2003), 5.
convenience, pre-packaged and heat-and-serve meals. The revolution in tomato production played a pivotal role in the rise of TV dinners, frozen pizza, canned spaghetti and a host packaged meals. The tomato also served a critical role in the fast food industry, which began in earnest by the 1950s, with burger joints serving sliced tomatoes and ketchup, and America’s new favorite meal, pizza, becoming a staple with the rise of both mom and pop and chain pizzerias like Domino’s (originally Dominick’s) in 1960.³

Thus the changes in the tomato industry and in tomato consumption during the second half of the twentieth century illuminate several very important changes in American culture. While historians have often focused on the convenience foods of the early twentieth century, including condiments like ketchup, as well as tomato soup, Jell-o and store-baked bread, the introduction of convenience foods after 1945 was far more important. The tomato played a critical role in this process.

**Tomato Production during the Postwar Period**

While in the previous half-century, the tomato industry was defined by localized year-round production, the postwar period saw a dramatic shift towards geographic and economic concentration. By the end of the twentieth century domestic production had moved away from traditional centers of production in the Mid-Atlantic and Midwest and was almost entirely centered in California and Florida.

As discussed in chapter 3, tomato production during the first half of the twentieth century was geographically decentralized, with states across the country playing a significant role in providing the nation’s urban areas with tomatoes throughout the year. Traditional areas of tomato production, including the Mid-Atlantic and Midwest, continued to be major players in tomato

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production, but California, Texas and Florida became major sites of tomato production as well while a host of other states often distant from urban markets, including Mississippi, Tennessee, Utah and others also provided significant supplies of tomatoes to cities. In the postwar period, following a trend for the nation as a whole, acreage in many of these states declined, in part as a result of increased yields. Even so, in California, and to a lesser extent Florida, acreage actually increased sharply (Figure 6). This was also met with a dramatic decrease in the number of farms growing tomatoes along with a sharp increase in average acreage per farm, particularly from 1944 to the late 1960s (Figure 7 and 8).

Another key part of the new tomato industry was its division in production. While many traditional tomato states continued to grow tomatoes both for market and canneries, Florida and California became highly specialized producers. Florida, much like it was in the early part of the century, remained devoted to producing out-of-season fresh tomatoes. California, on the other hand, while continuing to produce a significant amount of tomatoes for fresh consumption, largely wedded itself to the cannery. California had long produced fresh tomatoes for out-of-season consumption, the long distance the fresh tomatoes had to travel coupled with the fact that it could not consistently produce tomatoes in the dead of winter, made it difficult for California’s tomato growers to compete with Florida producers. While many California growers continued to grow fresh tomatoes for the late spring and summer months, many producers grew tomatoes almost entirely for processing facilities. By the mid-1960s, California could boast that it produced around 60% of the nation’s processed tomatoes. This number climbed steadily during the second half of the century. By 2002, California produced nearly 93% of the nation’s
Figure 7. Number of Tomato Farms, 1944-2002.
Figure 8. Acreage of Tomatoes Per Farm, 1929-1969

Acreage of Tomatoes Per Farm, 1929-1969

- New York
- New Jersey
- Pennsylvania
- Ohio
- Indiana
- Michigan
- Delaware
- Maryland
- Florida
- Texas
- California

Acreage 0 0 0 0 0 0 0 0 0

182
processed tomatoes, growing more than 290,000 of the nation’s 315,000 acres of processed tomato crop.⁴

Environmental and social factors played heavily into the demise of the tomato industry in many areas, including in New Jersey and Long Island. The Mid-Atlantic, in particular, was hit with wave after wave of crop failures during the late 1940s and early 1950s. During the 1946 season, a blight that began in Florida spread across the Mid-Atlantic, affecting a significant portion of the tomato harvest. In Pennsylvania, Maryland, Delaware and New Jersey, 40,000 acres were already affected by August 14. Just a week later, Union County, NJ reported that 60 percent of the county’s expected one million pound harvest was affected. By the beginning of October, Union County’s total loss was estimated at 75%. Just a year later, a late frost wiped out ten million plants in New Jersey, delaying the season by a month. Despite this, increased prices offered by canneries due to the previous season’s failure resulted in record numbers of tomatoes being sold to canneries. In 1947, canneries packed a total of 270,000 tons of New Jersey tomatoes. Nevertheless, these gluts and shortages continued to plague the region: in 1948, a significant rainfall caused a late blight that wiped out around half of the tomato crop in southern New Jersey and eastern Pennsylvania. Just a few hundred miles away, on Long Island, a heat wave wiped out entire fields of tomatoes. Nassau County, New York reported a total loss of $500,000 in tomatoes. These environmental challenges put the Mid-Atlantic, as well as other regions, in a fragile position. Farmers and canneries alike could be destroyed by a single bad season.⁵

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Added to the fragile state of the tomato industry in these areas was a second trend: suburbanization. The suburban explosion that took place in the years following 1945 often took with it prime truck farming land. New Jersey, site of much of the first waves of postwar suburban growth, quickly transitioned from the “Garden State” to a site of sprawl and pavement. In places nearby New York City, like Rockland County, NY and Long Island, farms were quickly swallowed up by suburban growth. As early as 1962, farms in Nassau County, on Long Island, had dropped to mere 10% of the number at the end of World War II, the majority of which were now devoted to the raising of flowers and shrubs. The effects of higher taxes caused by increasing property values due to suburbanization were also felt in Rockland County, where at least one large tomato grower shut down operations in 1956. Even in Florida, where the tomato industry continued to develop, suburban development often eliminated tomato acreage. In 1967, a 640-acre tomato farm twelve miles south of Miami was bought out and a “$75-million ‘town’” was constructed.6

Poor harvests and suburbanization offer part of an explanation for the dramatic shift in tomato production from the Mid-Atlantic and Midwest to California and Florida, but they do not fully explain this transformation. After all, the population of California and Florida exploded during and after World War II as well, and other tomato producing states, including Texas, had far more acreage available for production. One potential answer to this question is the nationwide farm labor shortages that began during World War II and continued through the 1960s. The tomato, being a very labor-intensive crop, was among the hardest hit industries.

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Labor shortages existed in nearly every geographic area that grew tomatoes, and were especially acute in California and Florida, even as these states continued to expand tomato production. However, compared to Midwestern and mid-Atlantic growers, California and Florida growers, benefitting from closer proximity to migrant labor, also proved more adept at lobbying the federal government to allow migrant workers to work the tomato harvest. Unlike in many other sectors, where the private sector overcame labor shortages through technological change and mechanization, California and Florida growers continued to rely upon the heavy importation of migrant labor even after the Federal government signaled the end of favorable immigration policies. In contrast to other industries, the major technological change in the tomato industry, the mechanical harvester, was primarily the result of the public sector, as agricultural engineers and breeders at the University of California, Davis and other universities sought to replicate mechanization on one of the most fragile fruits. Only after a successful mechanical harvester was developed did the private sector, growers, and canners develop significant interest in labor saving technologies.

The geographic reorientation of the tomato industry, and the changes in labor and mechanization, were far from inevitable. The tomato industry in California and Florida grew because of a policy of easy access to migrant labor, itself a result of labor shortages across all industries during World War II. Without such industry-friendly policies, it seems highly unlikely that California and Florida tomato growers would have been successful. Yet, the continued success of the California processing industry relied heavily on mechanization, a push that most California growers and processors had little interest in until the early 1960s, after almost twenty years of research by public-sector scientists and engineers. While labor shortages played a role in the formation of the mechanical harvester project, ironically the impetus for its invention came
not from the growers facing these labor shortages, but, as was partially the case with the
development of the 12-month tomato, from the public sector of the university.

**Always Searching for Labor**

The rapid development of the processed tomato industry in California and the fresh
tomato industry in Florida occurred during two decades of a nationwide labor shortage. Labor
shortages within the tomato industry could have easily ruined the entire industry: in most cases,
the difference between a successful harvest and a complete failure is a matter of weeks. A labor
shortage that disrupted the harvest season could have quickly ruined the entire tomato crop. This
contributes to making the rapid increase in production in states like California all the more
impressive. From the onset of the Second World War, until the late 1960s, almost annually the
tomato harvest was threatened by a very real potential of tomatoes rotting on the vine due to a
lack of labor to harvest them. While the growth of the industry in places like California meant
that labor shortages there were a growing problem, as growers continually planted more
tomatoes than the domestic labor market could harvest, this was truly a nationwide problem, and
certainly played a role in undermining the tomato industry in other parts of the country. It also
contributed to the politicization of the tomato, as California growers in particular compelled
Congress to become a key player in helping save the tomato industry from outsourcing by
importing migrant farm workers from Mexico and elsewhere. Intentionally or not, these policies,
which together form the core of the Bracero Program, helped realign the geography of tomato
production.

During the Second World War, when millions of Americans were sent to Europe and
Asia to fight the war, and millions more working in war-related industries, the scarcity of farm
labor became a national crisis. Beginning in 1942, the federal government allowed some
Mexican migrant farm workers into the United States to help harvest crops. By the mid-1940s, this became codified in law in Public Law 45. Several additional laws extended this program, and by 1951, Public Law 78 was passed by Congress. The Bracero Program encompassed these numerous legislative efforts, but Public Law 78 became the face of the Bracero Program because it was routinely extended into the early 1960s. The solution offered by these laws was the importation of migrant laborers, most of which came from Mexico, in order to harvest a multitude of crops. Tomatoes, being a very labor-intensive crop to harvest, were one of the key beneficiaries of this policy. California’s tomato industry in particular, due to the state’s close proximity to Mexico, was in a unique position to benefit from the new policy.\textsuperscript{7}

Despite the efforts of the federal government to secure migrant labor for farmers, labor shortages abounded, particularly in states in the Mid-Atlantic and Midwest. In 1945, Illinois farmer Charles Neubert found it impossible to acquire labor to harvest his large crop of tomatoes. According to Neubert, after attempting to go through all of the legal channels to acquire field workers, he hired a Mexican to travel to Mexico and recruit workers. After 53 Mexicans waded across the Rio Grande, they were picked up by Neubert’s agent and driven to his farm, about 20 miles south of Chicago, to harvest his tomatoes. Immigration officers raided Neubert’s farm and arrested the farmer and his Mexican workers. However, after investigating, officials were convinced that Neubert broke the law only after exhausting all legal means, and because he was desperate to save his tomato crop. According to authorities, Neubert was paying his workers the going rate in the area for tomato picking, around $8 to $10 per day. After the initial investigation, Neubert and the Mexican workers were released on bail to continue harvesting the tomatoes.\textsuperscript{8}

\textsuperscript{7} Public Law 78, Pub. L. 82-78, 65 Stat. 19 (1951).
Elsewhere, in states like New Jersey, farmers relied heavily on Puerto Rican migrant workers and southern blacks, who ventured up to the Garden State’s tomato fields annually to work the harvest. These workers lived in large migrant camps, which by the late 1960s were routinely criticized in the press for their poor sanitary conditions. In upstate New York, many farmers simply tried to out-pay their competitors in order to supply the 35,000 vegetable pickers they needed per year in the mid 1960s. As late as 1970, New Jersey growers resorted to placing ads for pickers paying them daily and offering free transportation from Philadelphia in order to entice them to come work the fields. Ultimately, the available Puerto Ricans, African-Americans and other available labor in New Jersey and elsewhere in the region proved insufficient.9

For California, and to a lesser extent Texas and Florida, migrant labor was much easier to be had as long as the Bracero program remained intact. While in 1942 a mere four thousand migrant workers were admitted under the program, this number quickly jumped to around 50,000 per year for the remaining years of the war. Following a sharp decline in the immediate postwar years (1946-1948), enrollment in the program sharply increased, hitting 192,000 in 1951, over 200,000 in 1953 and peaking at 445,000 in 1956. By the late 1950s, however, criticism of the program was mounting, most notably by American labor leaders who argued that the program’s continued existence was undermining wage levels in agricultural and industrial sectors. What had begun as a short-term solution to labor shortages caused by war had evolved into a long-term solution to growers’ desire to expand production of labor-intensive crops. The California tomato industry stood at the top – interests of the California tomato industry regularly made the trip to Washington for hearings and Congressional debates over the annual extension of Public Law 78.

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Growers routinely argued that without the mass-importation of Bracero labor, the California tomato crop would be ruined. Even with sufficient domestic labor, which growers claimed Americans refused to do, the Braceros were considered superior workers because they “specialize in ‘stoop work’” required for harvesting crops like tomatoes and sugar beets.¹⁰

Most California growers placed almost all of their faith in continued migrant labor. The idea of a mechanized solution was one most tomato growers thought little of, even as the Bracero program was increasingly under attack. Beginning in 1961, Public Law 78 had to be renewed annually, where previously it was renewed every two years. In 1961, fewer than 300,000 Braceros were admitted into the country. A year later, less than 200,000 were brought in. The writing on the wall was near for the program, yet, for most farmers, continued migrant labor was the primary way of protecting the industry. Finally, after more than twenty years, the Bracero Program officially ended in 1964. Not surprisingly, most growers’ interest in the possibilities of mechanical harvesting increased dramatically during the early to mid-1960s as the Bracero program was in its final stages. During the 1964 season, California tomato growers relied on the labor of just thirty thousand Mexican workers. The program that enabled the California tomato industry to explode now threatened its very existence. Already, many processors were considering relocating to Mexico and elsewhere, where cheap labor could be more easily secured. Processors were forced to offer an incredibly high $35 per ton, $10 higher than the previous season, in order to secure contracts with farmers for the 1965 season. Even then, California farmers planted roughly 25% fewer acres of tomatoes (116,000 acres) than in previous seasons.¹¹

¹¹ Lawrence E. Davies, "Growers Counter Loss of Braceros," *New York Times* (23 Feb 1964); A.I. Dickman, *Interviews with Persons Involved in the Development of the Tomato Harvester, the Compatible*
The end of the Bracero program did not spell the end of California’s reliance on migrant labor. During the 1965 season, despite a significant decrease in acreage planted, the state’s employment department could not secure sufficient domestic labor for the tomato harvest. Already in March, Secretary of Labor Willard Wirtz authorized 600 workers. Once it was clear that there was a huge labor shortage for the tomato harvest, under the threat of high prices and a complete crop failure, Wirtz authorized the entry of 8,000 migrants. By the end of the season, he had authorized 18,400 migrant workers for the tomato harvest. While this number was significantly lower than the 37,000 that worked the tomato harvest in 1964, the last year that the Bracero program was officially in effect, the state’s tomato growers had clearly not rid themselves of their reliance on foreign labor. Not until 1968 could California’s tomato industry boast that it had eliminated its need for migrant labor.12

By the mid-1960s, at the exact moment that the Bracero Program was coming to an end, the mechanical tomato harvester appeared. Writing in *Seed World* in 1965, H.B. Peto argued that “in the event that U.S. Public Law 78 is not renewed for one year, the necessity of immediately changing from hand picking of tomatoes for the cannery and other commercial uses to mechanical picking will be imperative.” In 1964, an estimated 100 machines were put to use in California’s tomato fields. This number increased to 250 in 1965, harvesting up to half of the state’s tomato acreage. By the late 1960s, the labor crisis in the industry was overcome primarily through the introduction of the harvester, as upwards of eighty percent of the state’s burgeoning

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tomato acreage was harvested by machine. However, the tomato industry had little to do with this innovation. Just a few years prior to this, the idea of mechanically harvesting such a fragile fruit as the tomato was dismissed by most as lunacy and the work to achieve such a feat was known and observed by very few farmers, processors and agricultural researchers. The emergence of the tomato harvester took place amidst a critical labor shortage; in itself, this is hardly unexpected, but what is surprising is that its development was not a product of market demand but of academic interest in overcoming the many obstacles of harvesting tomatoes mechanically.\textsuperscript{13}

\textbf{The Harvester in the Garden}

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\textsuperscript{13} H.B. Peto, "Mechanical Harvesting of Tomatoes," \textit{Seed World} XCIII, no. 9 (8 Nov. 1963): 14-5; Davies, "Growers Counter Loss of Braceros."; Bylin, "Lack of Workers May Limit Tomato Crops in California."
While there were numerous early models of the mechanical tomato harvester, the most popular and successful was researched by scientists and engineers at the University of California at Davis and produced by Blackwelder, a small agricultural firm based in California. The development of the harvester included a large cast of characters, from Jack Hanna, a breeding specialist, Coby Lorenzen, an engineer, to numerous other researchers who focused on bulk handling, agronomy, and other obstacles to the successful development of a tomato harvester. The development of the harvester ultimately solidified California’s place as the primary canned tomato producer in the country, and played a pivotal role in the commodification of the tomato, allowing for an efficient process of producing millions of tons of nearly identical tomatoes to be put up in cans.

Gordie C. Hanna, better known as Jack, was a University of California breeding specialist who in many ways is the father of the mechanical tomato harvester. He became interested in the tomato around 1938 when he was looking for a second crop to work on after his primary crop, asparagus, was done around the beginning of July. Already by 1938, Hanna had started work on developing a mechanical harvester for asparagus, though at this time he had little idea that he would later do so for tomatoes.\footnote{Gordie C. Hanna, Interview, in Dickman, \textit{Interviews with Persons Involved,} 2.}

The idea for a mechanical harvester of tomatoes, according to Hanna, originated in conversations with his friend and colleague, Albert Martin Jongeneel, a California farmer and the inventor of a sugar beet harvester. They met after working together in the asparagus fields when Jongeneel was in charge of Del Monte’s asparagus crop in the 1920s. During the early 1940s, their conversations often turned to the labor problems present in the tomato industry, with Jongeneel recalling that “it was impossible, at that time, to see how you would continue to get the labor to pick the big, sloppy tomato.” Hanna became interested in the history of labor and
agriculture, realizing that especially in California, wave after wave of immigrants and migrants had been responsible for harvesting the vast majority of California’s food production. Well before the Bracero program, then, Hanna understood that continued production of tomatoes would require a new influx of immigrant workers, and predicted eventually that mechanization would be required to eliminate that need.¹⁵

Thus from the outset of Hanna’s interest in developing a mechanical harvester for tomatoes, in the early 1940s, he was keenly aware of the labor crisis facing the tomato industry and sought a solution to this problem. Yet, the development of the mechanical tomato harvester does not fit neatly into the pattern of the agricultural mechanization projects, including the grain harvester. The development of the mechanical tomato harvester came despite virtually no interest within related agricultural industries, and was instead developed almost entirely within the public sector. Indeed, the tomato industry put all of its faith in the continued existence of the Bracero program, which gave it the cheap labor it was used to. By 1959, the only outside resources the harvester project had obtained was about $500 from the Tomato Growers Association, a paltry sum for a group representing California’s 130,000 acre tomato industry, especially given that it promised to reduce labor costs from about $7.50 a ton to $2.00. Hanna recalled that one of the biggest problems of the project was the continual lack of help. In part, he believed, this was because no one believed in the project, including many of his colleagues at Davis. When asked about funding for the project, he replied rather matter-of-factly, “well I didn’t have any funds specified at all for mechanical harvesting. I had a few rows over at the side of the field which I didn’t tell anybody about.” Particularly, however, this project faced a lot of resistance by canners and growers. The harvester, Hanna said,

¹⁵Ibid., 2-3; Albert Martin “Fum” Jongeneel, interview, in Dickman, Interviews with Persons Involved, 22-3.
“was the big joke of the industry for some time, when they learned we were working on the tomato. And then they had labor trouble from time to time and the evolution of their thinking when something like this: ‘Well, the thing is impossible.’ Then, after they began talking about it: ‘Do you think you’ll ever get anywhere with it? Well, how are you getting along?’ And then: ‘When are we going to have one?’ Finally in 1959, when they had a lot of labor trouble, they said: ‘Well, we’ve got to have it! Get off your backside and go to work!’”

Even after a working model was completed in the late 1950s, resistance remained among both growers and canners, as the success of the harvester required significant changes in how to produce and process tomatoes.16

The very fact that Jack Hanna, a plant breeding specialist, is known as the father of the mechanical tomato harvester underscores an important part of the development of the harvester: the invention of a successful tomato harvester required an inordinate amount of cooperation between a variety of agricultural fields. The tomato is a radically different plant than those that had been mechanized before it. Unlike wheat, corn, and other crops, the tomato is a soft, fragile fruit. In its natural state, the plants often grow on long vines. To prevent the fruit from touching the ground, the plants often have to be staked. Significant care was required to avoid damaging the fruit. And perhaps most difficult of all when considering mechanization, in order to maximize yields, numerous pickings of ripe fruit on the same plants had to take place over the course of several week or months during the harvest. All of these considerations point to how difficult tomato picking is by hand. While growers’ requests for migrant labor was couched in incredibly racist terms, often referring to Mexicans adeptness at the “tiring stooping” that was necessary for pickers, they certainly understood that picking tomatoes was no easy task. In

16 Hanna, interview, in Dickman, Interviews with Persons Involved, 7, 9-10; Melvin P. Zobel, interview, in Dickman, Interviews with Persons Involved, 106. The idea that the labor shortage did not fuel the search for mechanized tomato harvesting stands in contrast to the main historical work on tomato harvesters, Wayne D. Rasmussen, "Advances in American Agriculture: The Mechanical Tomato Harvester as a Case Study," Technology and Culture 9, no. 4 (Oct. 1968): 531-543; another important perspective focuses on growers’ support of the harvester by the late 1950s and early 1960s as union pressure mounted. See Dennis Nodín Valdés, “Machine Politics in California Agriculture, 1945-1990s,” Pacific Historical Review 63, no. 2 (May 1994): 203-224.
addition to the backbreaking work, it required a very skilled hand and eye to spot tomatoes that were at the proper stage of ripeness, and to pick them quickly from the densely packed vines without injuring the plant or other fruits. In order to mechanize this process, a machine would have to be developed that could mimic this highly skilled process. And, a new tomato plant needed to be developed, one that would ripen most fruits at the same time and was strong enough to not drop its fruits as it was wrenched from the ground. Such a feat would require the work of specialists in a number of agricultural fields, including breeding and engineering.\footnote{Bylin, "Lack of Workers May Limit Tomato Crops in California."}

In 1949, after Hanna had worked on developing new tomato varieties fit for a mechanical harvester for nearly a decade, agricultural engineer Coby Lorenzen was assigned to work with Hanna. His job was to focus on the mechanical design of a harvester while Hanna continued work on breeding. Later, once a prototype was created, many other individuals became involved in the project, including specialists in bulk handling of tomatoes, and the college’s patenting and marketing specialists. Hanna believed this was one of the first times, if not the first, that such a level of cooperation had been achieved at a university. Combining such a group of specialists was a difficult task, as Joe Marks later observed in Nation’s Agriculture when he wrote “to build a tomato harvester, you need the engineering ability of a genius, the horticultural background of Luther Burbank … and the patience of Job!”\footnote{Hanna, interview, in Dickman, Interviews with Persons Involved, 7-8; Coby Lorenzen, interview, in Dickman, Interviews with Persons Involved, 43; Joe Marks, "Tomato Harvesters," Nation’s Agriculture XL, no. 5 (1965): 12-3.}

Hanna was in charge of breeding a tomato variety that could be mechanically harvested, and Lorenzen was tasked with constructing the harvester itself. Each of these was a monumental undertaking, but in the case of the harvester progress in each area had to happen simultaneously so that further advancements and alterations could be made to each side. For Hanna, the biggest
effect that Lorenzen had on his own work was to teach him how to think about tomatoes from a mechanical perspective. He recalled, “I think Coby gave me a concept that I never would have gotten from any horticulturalist or geneticist – the fact that a tomato wasn’t necessarily a tomato with him, it was merely an object that had certain physical properties.” For both Hanna and Lorenzen, this required an intellectual leap to forget that the tomato was not, in fact, a soft fruit that couldn’t be mechanized. Hanna’s job, then, was to create a tomato plant with those physical properties that could be easily harvested by machine at one time. Lorenzen’s job, on the other hand, was to create a machine that could take a tomato with those qualities and harvest it successfully. Later, once they had developed a prototype, Mike O’Brien, another agricultural engineer at Davis, was tasked with developing a bulk handling and central sorting system for the harvester.19

The ideal tomato, Hanna and Lorenzen agreed, would have four key qualities, each quite difficult to obtain. It would ripen uniformly, which would be aided by the second, a smaller plant with fewer tomatoes. Third, the fruit needed to “come off the vine fairly readily,” though not too easily or the fruit would fall off as the plant was pulled out of the ground. Finally, the fruit would need to be sturdier than the varieties currently used, as the machine would likely abuse the tomatoes more than hand pickers. In order for mechanization to work, then, the tomato had to be radically altered, coming to resemble wheat or corn almost as much as a traditional tomato plant. The breeding work itself began in the early 1940s and was not completed until the early part of the 1960s. It required generations of crossbreeding and hybridization to get all of the qualities

Hanna felt it needed to have into a single tomato. By 1947, after several years of work, Hanna did not believe his research had produced substantial results.\textsuperscript{20}

In order to “create” the perfect tomato for mechanical harvesting required an immense amount of tomato germplasm, or genetic material. Hanna utilized preexisting tomato varieties developed at other USDA facilities, most notably at Beltsville, Maryland and Geneva, New York. Collecting samples at these and other facilities, Davis became home to one of the largest tomato collections in the world. In one visit to Geneva, New York, Hanna noticed the facility’s work on the development of the Red Top tomato, which was a cross between the San Marzano (also a parent of the Roma tomato) and Gem. Each of these plants had just a few tomatoes on them, but they were small plants that grew upright. “As soon as I saw those,” he recalled, “I thought well, this is what I’m looking for. I can grow these very thickly and somehow or other we can mow these and shake the fruit off.” Hanna had altered the tomato plant to one that emulated a corn stalk or wheat spike. One of the primary varieties that Hanna used to develop his harvester varieties was the Red Top. Crucial to the development of this tomato, however, was also the discovery of new wild tomatoes. UC Davis scientist Charlie Rick, who himself started working on tomatoes in 1943, provided some of the most important germplasm. His specialty was the collection of tomato germplasm from South America. On one of his numerous research trips to the Galapagos Islands, he discovered a wild, orange tomato “about the size of a small pea” that was “of the so-called jointless type.” Put simply, the jointless characteristic “prevents the fruit from separating readily from the vine.” It was this characteristic that allowed Hanna to develop a tomato that would not fall off the vine as the plant was pulled from the ground. By

crossbreeding, Hanna was able to isolate this characteristic and eventually insert it into tomato varieties with other useful characteristics.21

Hanna started with a tomato with a tough appearance, and that typically could stand one fall from about three feet without breaking. Using the time-honored practice of selection, and the somewhat newer practice of cross-breeding, Hanna, over a period of more than fifteen years, was able to isolate the necessary characteristics and develop a tomato that he felt would stand up to the rigors of mechanical harvesting. In 1959, the “Rube Goldberg”, the first prototype, was released. It was successful. Hanna continued work to develop a superior tomato, often utilizing the different planting seasons of the Sacramento and Imperial Valleys to get two plantings in a year. In 1961, a heat wave kept many of his 248 plantings from producing, but he found one variety, line 145, that did well, and sent some of the seeds to Mexico to be grown through the fall and winter. From Mexico, 200 pounds of the seed were sent back to California, and in the next year, this variety, known as VF 145, was distributed to California growers. The VF 145 tomato was a determinant variety, meaning it was bushy and grew to about 2½ feet before stopping its growth. The fruit ripened within about a 3-week window, stayed on the vine as the plant was ripped out of the ground, and could stand the beating that mechanical harvesting doled out. To top it off, it was almost entirely coreless, meaning that the plant could be canned whole without the laborious task of cutting out the core. At least by one account, the VF 145 was the dominant tomato variety in California as early as 1964. Its dominance of the California canned industry

21 Hanna, interview, in Dickman, Interviews with Persons Involved, 3-5; Charles M. Rick, Jr., interview, in Dickman, Interviews with Persons Involved, 26.
continued into the 1970s, and even today, the VF145 remains in the lineage of a majority of the varieties planted.  

At the same time that Lorenzen and Hanna discussed the necessary traits of a mechanically harvestable tomato, they also discussed the mechanical requirements of a working harvester. They both understood, for example, “that we would have to have a system that would be a once-through operation, that we would not be able to build a device that would come along and find a ripe tomato on a vine and leave the vine and pick the tomato.” The basic idea behind the harvester was rather straightforward: a harvester would need to pick up the plant, separate the ripe tomatoes from the plant, and would need to both convey the tomatoes for further sorting and storage and dispose of the plants and dirt.

Already by 1956, Lorenzen knew the basic processes that the harvester would be able to complete: “As visualized in its final form,” Lorenzen wrote in the *American Vegetable Grower*, “the harvesting is a ‘once through’ process, with the machine performing four principal operations – cutting the root system, lifting the vine, separating the tomatoes from the vine, and conveying the fruit to a container.” Many of these lessons were learned after taking a potato digger into the field to see how it would harvest tomatoes. They noticed that it could get the tomatoes off the vine, but it destroyed them in the process. In part, as Lorenzen stated at the time, it was because the potato digger pulled the entire plant out of the ground, mixing big clods of dirt in with the tomatoes. As they learned from that experiment, the basic mechanics of the harvester they developed by the early 1960s were quite simple (Illustration 8):

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24 Hanna, interview, in Dickman, *Interviews with Persons Involved*, 6; Bainer, interview, in Dickman, *Interviews with Persons Involved*, 34; Coby Lorenzen, "Tomato Harvester," *American Vegetable Grower* IV, no. 10
“(a) a cutting device cuts the vines mainstem, preferably at root level; (b) a tine [sharp prong] pickup lifter gently elevates the vine to a shaking device; (c) at the shaking device, rubber-covered walking bar mounted in two sets on crankshafts agitate and advance the vine along the bars. Preferably, the shaking device is novelty constructed to provide a gradually increasing shaking force as the vine moves from one end of the shaker to the other; (d) the vine carried to the end of the shaking device falls to the ground through an open chute; (e) the tomatoes removed by the shaker fall directly onto a specially agitated de-leafing conveyor, which is mounted on an incline moving rearwardly and upwardly; (f) the de-leafing conveyor carries leaves, trash, and dirt up to the open chute where they fall through with the vines; (g) the tomatoes roll down the de-leafing conveyor and are cross-conveyed to sorting belts; (h) the tomatoes are visually sorted by hand at the rear of the machine, as the sorting belts move them rearwardly; (i) the sorted tomatoes are conveyed into bulk bins, preferably located on a trailer being pulled parallel to the harvester; and (j) the packed tomatoes are then hauled away in the bins by trucks.”

In 1959, Lorenzen and Hanna had developed an experimental model. Les Heringer, one of the few farmers that followed the progress of the harvester with enthusiasm, invited them to

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harvest a small section of his crop. While Hanna asked that there not be a large crowd present, they arrived with the experimental model to a crowd of farmers and a few media members. The successes of the trial were reported in major papers throughout the country. The New York Times reported that it was being “hailed as foreshadowing a revolution in California’s 200 square miles of tomato fields.” Its success was all the more important considering it wasn’t even on a crop of Hanna’s specially designed tomatoes. As a result of this test, the Heringer farm donated fifteen thousand dollars to help create the first commercial prototype. Also in 1959, Ralph Parks of the USDA called a meeting on campus to seek out companies that wanted to take part in producing the mechanical harvester. Representatives from a total of eight firms were present, including Blackwelder and “one major one.” According to Roy Bainer, head of the agricultural engineering department, most large companies, including International Harvester and Messey-Ferguson, both of which had facilities nearby, were simply not interested. Robert Underhill, an administrator that worked on applying for the patents, also sought out larger companies to no avail. These large companies, according to Bainer, simply couldn’t see a big enough market for these products. Again, even after a successful demonstration of the tomato harvester, many simply could not see the potential for mechanization in an industry long dominated by access to cheap labor.26

Out of this group only Blackwelder, a small agricultural firm, expressed interest in working with UC Davis on the harvester. By 1960, after working out an exclusive license agreement with the University, who at this time had already proceeded with patent applications, Blackwelder began work on the first prototype. In 1961 Blackwelder produced a total of 25 machines, all sold under commitments for $15,000 each. For the several years, Blackwelder

focused on fixing some of the problems in the original model, and didn’t produce any additional machines until 1964. But as the completion of their first generation of changes coincided with the end of the Bracero program, orders soon began pouring in. In 1965, the first year that the Bracero program was to end in California, roughly 29% of the tomato harvest was done by machine. In 1967, this had ballooned to 80%. A year later, in 1968, roughly 90% of the harvest was done with mechanical harvesters. Thus, from 1964, when Blackwelder had 20-25 harvesters in the field, to the end of the 1960s, the harvester overwhelmed California’s tomato fields, making it the dominant form of tomato harvesting.  

The quick rise of the tomato harvester had tremendous effects on California agriculture. The most notable affect on California tomato farmers was the dramatic decrease in tomato farms. Many farmers, unable to justify purchasing a harvester, simply dropped out. The harvester encouraged increased tomato acreage per farm, as a harvester could harvest at least 100 acres per season, and as earlier varieties were produced, this number was quickly increased to close to 200. Since tomato farmers also needed additional equipment to complete the harvest, including trucks to transport the tomatoes from the field, a total of 300 acres was generally accepted in the early 1960s as a minimal amount to justify mechanization. Small-time tomato farmers often chose to abandon tomatoes rather than expand their operations, especially since many of them, along with Heinz, Campbell’s, and other processors, believed that the future of tomatoes could well be in Mexico. In the early 1960s, roughly 2,200 farms produced tomatoes in California. By the mid-1970s, this number had dropped almost 75%, to around 600. This far outpaced the general

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decline in farms in California, which during the same period fell from roughly 105,000 to 55,000 farms.\textsuperscript{28}

Another obstacle to the successful implementation of the mechanical harvester was that it required significant changes in agricultural practices and processing facilities. Indeed, Ernest Blackwelder observed that “the cultural practices were almost as important as the tomato variety and machine” in affecting production. John Lingle, writing in \textit{American Vegetable Grower}, observed that “every grower who buys a harvester soon finds he must learn to farm all over again.” In order to combat this potential problem, since many farmers were highly resistant to changing the way they farmed, Blackwelder released a variety of manuals that outlined how farmers should change their practices. Each of the six manuals had a different focus, covering topics like fertilization, irrigation, sorting, and harvest timing. One of the most difficult things for farmers to adapt to, for example, was how to decide when to harvest, since the once-over harvest used by the machine was very different from the farmers’ old practice of sending workers through the fields for several pickings. Farmers were resistant, but eventually accepted that harvesting the fields when 80\% of the crop was ripe would lead to a successful crop.\textsuperscript{29}

Similar to farmers, many canneries were resistant to changing their production practices to adapt to mechanically harvested tomatoes. At the outset, many canneries were reluctant to even accept mechanically harvested tomatoes since they often included a slightly higher percentage of culls than handpicked crops. In the beginning, before earlier varieties were developed, mechanically harvested tomatoes also shortened the canning season, as all the tomatoes from a single area often came in within just a week or two, straining the capacity of the

\textsuperscript{28}Heringer, interview, in Dickman, \textit{Interviews with Persons Involved}, 70, 79-80; Zobel, interview, in Dickman, \textit{Interviews with Persons Involved}, 110; Blackwelder, interview, in Dickman, \textit{Interviews with Persons Involved}, 66-7.

canneries. The harvester also created other problems. Machine harvested tomatoes were generally not sorted in the field as effectively as handpicked, which necessitated increased sorting at the factory. Additionally, because the harvester kicked up more dirt and other particles, machine-harvested tomatoes needed to be cleaned more thoroughly and quickly than their handpicked counterparts. All of these threatened to create bottlenecks in the canneries, threatening their ability to operate as efficiently as they previously had. The mass production of tomato paste, a trend that will be discussed later, helped solve this bottleneck as it allowed canneries to devote most of their operations to quickly producing a concentrated product rather than have separate processes for handling tomatoes during the harvest season.\(^1\)

At the same time that many farm operators were being chased off their land, the labor needs of tomato farms were drastically reduced. As noted above, the harvester initially reduced labor for harvesting by roughly 80 percent. In the early 1960s, the state’s tomato harvest required around 100,000 workers, both foreign and domestic. By the late 1960s and 1970s, as few as 25,000 workers completed a much larger tomato harvest. These were almost entirely domestic employees, many part-time, and many of them were now women.\(^2\)

As dramatic as the effects within the state of California were, the development of the mechanical harvester had an even more profound effect on the rest of the nation’s producers of processed tomatoes, particularly as they lacked flat fields, large farms and a dry environment, all qualities necessary to adopt the tomato harvester. Already struggling with labor shortages, droughts, blight and suburbanization, the development of the mechanical harvester was the final straw for many states’ canned tomato industries that could no longer compete without the


\(^2\)Zobel, interview, in Dickman, Interviews with Persons Involved, 107-8; Heringer, interview, in Dickman, Interviews with Persons Involved, 76.
harvester. In the late 1950s, researchers at Michigan State, Cornell and Purdue all started investigating the prospects of tomato harvesters. Bill Stout, a Michigan State University agricultural engineer even invented a model. But, the successful implementation of the harvester was confined mostly to California. Not only did the harvester require flat fields and large farms, both of which were less common in many tomato-growing states, but also a dry, even arid, environment, where irrigation largely replaced rain as a source of water. The harvester could not run on wet fields as it would get stuck, and sorting tomatoes harvested from wet fields was a nightmare. With once-over picking each crop of tomatoes had a very short window of time that it could be harvested. Thus a single hard rain could potentially ruin the harvest of an entire field of tomatoes. In the much wetter Midwest and Mid-Atlantic, farmers simply could not take the risk of paying the cost of mechanization and then not being able to use it. As the Purdue Experiment Station director N.J. Volk argued, “the big cost in the tomato is picking it. And if we can’t use a machine, we can’t compete.” California’s stake in the nation’s canned tomato supply rose from around 60% in the early 1960s to closer to 75-85% in the mid to late 1970s. By the early 2000’s, California planted around 75% of the nation’s entire tomato harvest, processed and fresh. Already before the harvester California was a dominant force in the canning industry, but the rise of the mechanical harvester solidified the state’s position as the near-exclusive producer of processing tomatoes in the country.32

The Fresh Tomato

While the California tomato industry emerged as the dominant producer of American processed tomatoes, Florida producers continued to emphasize fresh tomato production. As in

previous decades, Florida producers relied upon their ability to produce fresh tomatoes for out-of-season production. Unlike California growers, however, who were able to undercut their competitors through mechanization and rationalization, Florida producers faced stiff competition from Mexico and Caribbean producers. Attempts to mechanize Florida production were limited, so Florida growers underwent a campaign to minimize the effects of cheaper Mexican tomatoes politically. By the end of the twentieth century, the Florida tomato industry remained a dominant force for the production of fresh tomatoes, providing American consumers with a year-round supply of the crimson fruit. Yet these tomatoes, as the next chapter will demonstrate, were and remain heavily criticized for being of poor quality, taste and texture.

In 1960, as the Cold War raged on, Florida tomato growers accused the Castro regime of dumping cheap tomatoes on the American markets just as Florida growers were starting their harvest. Florida growers, in a foreshadowing of later battles with Mexican producers, demanded action to restrict the flow of these tomatoes. Florida Senator George Smathers made at least three attempts in four months to get the State Department to do something about the Cuban tomato problem. In the end, the main result was to force Florida growers to begin mechanizing production in order to reduce labor costs. Though Florida growers could not turn to a fully mechanized solution, as the tomatoes were too fragile to be harvested by machine without making them unsellable for fresh market, they created massive “factories in the field” to make sorting and harvesting more efficient. Trucks with booms that extended as far as 165 feet drove slowly through the fields. Large work crews picked the tomatoes, placed them on conveyor belts, where they were sorted, packed, and stored. These machines could not eliminate the need for large amounts of labor, as large work crews still harvested the tomatoes by hand, but they could
increase the speed of production and sorting, at least reducing some of the labor costs

(Illustration 9 and 10).³³
Over time, Mexican tomatoes emerged as the primary source of competition with Florida tomatoes, and indeed, from the perception of Florida producers, Mexican tomatoes were a threat to their very existence. Throughout the 1940s, Mexican agricultural imports boomed. During the 1945-46 season, for example, more than fifty million dollars worth of goods traveled through Nogales, Arizona from Mexico. In the season that followed, this number rose to more than seventy-five million. Tomato imports increased from 103 million pounds in 1956-7 to 386 million pounds in 1967. By the late 1960s, Florida producers believed that without legal protection, the Florida tomato industry would be wiped off the map. On January 8, 1969, the USDA implemented new minimum-size standards on fresh market tomatoes that had the result of excluding a large percentage of Mexican tomatoes from American markets. These standards, drawn up by the Florida Tomato Committee, a group representing the interests of Florida tomatoes, created an uproar in the press, and strained already poor relations between the United States and Latin American countries.³⁴

The restrictions themselves seem rather innocuous, as they limited sizes of fresh and fresh-green tomatoes, and they applied equally to domestic and imported tomatoes. Yet, the intention behind the policy was to neutralize the threat that Mexican tomatoes placed on Florida growers by establishing standards for fresh ripe tomatoes that would eliminate much of Mexico’s crop, while creating standards for fresh green tomatoes, which was Florida’s specialty, that kept as many in the market as possible. Tomatoes picked green had to be at least 2 9/32 inches in diameter, while those picked ripe were required to be considerably larger, 2 17/32 inches. And in this regard, these regulations proved to be highly effective. Immediately, more than 30% of Mexico’s tomato crop was affected, with that number expected to reach as high as 50% within a

few months. Only 15-20% of Florida tomatoes were expected to be unsellable. The immediate result was three-fold: first, Florida tomatoes would have a much higher market-share. Second, fresh tomato prices rose as much as 30%. Consumers would foot the bill for protecting Florida’s tomato industry. Third, these standards threatened the viability of the Mexican tomato industry, which the United States had been encouraging for decades. The United States, always eager to foster new trade ties, pushed the growth of the tomato industry in Mexico both by lending the nation agricultural experts and by persuading Mexican farmers to buy American agricultural equipment.35

The results of these new anti-Mexican policies were immediate. By March 1969, almost 15,000 of the 100,000 workers who picked tomatoes in Sinaloa and Sonora, the primary tomato-producing states in Mexico, had been laid off. Mexican farmers were enraged. Raul Batiz, a farmer and president of the 20,000 member Confederation of Agriculture Associations of Sinaloa, argued that “the U.S. encouraged us to grow a big crop, using machinery bought in the U.S., and now they’re trying to keep us from selling it.” Since the 1920s, Mexican growers had been persuaded by American interests to increase their tomato production. These efforts were led by periodic visits by American agricultural experts and American investment that helped fund a large irrigation project that opened up hundreds of new acres to tomato cultivation in Sinaloa. These efforts helped nearly quadruple Mexican tomato production in a mere decade. Yet, the good will fostered by these actions was actively undermined by the new tomato policies. As the Wall Street Journal noted, the new rules were being perceived by many in Latin America as another attack on Latin American interests, and threatened to worsen “already shaky relations” between the United States and their southern neighbors. One editorial argued that after

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prohibiting Braceros from entering the United States, this was a second attack by the United States regarding tomatoes.\textsuperscript{36}

Most observers rejected Florida growers’ attempts to explain why such regulations were necessary. Jack Peters, manager of the Florida Tomato Committee, argued that “if the restrictions were removed, we would have a demoralized, chaotic market in the U.S. within a week. … What we’re doing is good for the entire industry, in Florida and in Mexico.” The \textit{Wall Street Journal} rejected this explanation, arguing that “because tomatoes are sold by the pound, not the dozen, a difference of 1/32 inch or so is of little concern.” The editors continued, “the rules discriminate against tomatoes grown in Mexico and in favor of those produced in Florida.” The \textit{New York Times} noted that these restrictions were a direct response to the previous season, when Florida tomatoes were undercut by a market glutted with Mexican tomatoes, leading many Florida growers to dump their crops in abandoned lots and fields. William Rose, writing for the \textit{Chicago Tribune}, likened the new rules to “cut[ting] [Mexican growers] off at the vine and let[ting] them rot just like their tomatoes.”\textsuperscript{37}

And, as these observers frequently noted, the end result was a net loss for consumers. Not only did this policy result in many consumers only having access to lower quality Florida tomatoes, they now would pay substantially more for them. One consumer wrote into the \textit{New York Times} and argued that the tomatoes available in the New York City area, almost all from Florida, “dropped to an all-time low in quality and climbed to an all-time high in price.” When travelling in the West, he argued, he found Mexican tomatoes to be both cheaper and better. His

conclusion: “I believe the end loser in this tug of war and attempt to protect the Florida tomato growers is the consumer, and this hardly seems justified.”

Florida’s attempt to limit Mexican imports was ultimately defeated. A Federal judge in Dallas issued a restraining order on the USDA’s restrictions, effectively eliminating them. Despite this defeat, the Florida tomato industry has continued this strategy of appealing to the USDA and the State Department to protect their interests against Mexican tomatoes. The implementation of NAFTA in 1994 threatened the Florida tomato industry yet again, and the Florida industry has spent much of the last twenty years trying to find ways to protect itself against increasing supplies of Mexican tomatoes. In 1996, Florida growers fought for, and won, a deal that set a minimum price for imported tomatoes. In more recent years, Florida growers abandoned support for this agreement, as they determined that the minimum prices set in it were much lower than Mexican costs of production. In 2012, with fears of a trade war looming, a new agreement raised minimum prices substantially on several types of tomatoes, including an increase from 21 to 31 cents a pound for basic winter tomatoes, and even higher prices on greenhouse and other specialty tomatoes. Unlike the canning industry, which faced less foreign competition, the fresh tomato industry in the United States has relied on lobbying to protect their crops from price undercutting by cheap foreign producers.

The Tomato and Food Culture

While Florida growers secured their markets with government help and expanded production of fresh tomatoes through partial mechanization, the mechanical harvester had a still

greater impact on how tomatoes entered the American diet. Fresh tomatoes remained popular, especially in salads, but the bigger trend during the postwar period was the introduction of a variety of new heavily processed goods. The harvester was at the center of this transformation. Not only did it transform production by reducing the need for scarce labor, it also played an important part in the revolution in food processing and encouraged the proliferation of tomato paste as a raw ingredient in tomato production. After the war, American food habits changed dramatically with the introduction of new convenience foods. Most notably in the case of the tomato was the shift away from fresh tomatoes and canned whole tomatoes towards more heavily processed tomato products, including prepackaged tomato sauce and paste, and the rise of prepackaged meals like pizza, canned spaghetti, and many frozen foods. Thus, while the tomato helped lead America into the canning age during the late nineteenth and early twentieth century, it was even more in the vanguard of culinary innovation after 1945.

This was a complex story. To be sure, culinary changes included increased consumption of fresh and frozen vegetables and a more diversified diet. But it also included the use of heavily processed foods. Many Americans ate more vegetables, tried new and interesting ethnic foods, and overall had access to a much wider range of foods at all times of the year. However, they also ate more junk food and other highly processed goods, which over time led to a deskilling of American cooking, encouraged unhealthy eating trends, and led most Americans to know very little about where their food comes from or how it is made.

Historians have paid particular attention to the rise of certain convenience foods during the late nineteenth and early twentieth centuries, specifically the emergence of ketchup and condensed soup. These products, while important, were only a small part of the food culture of this period, as most housewives continued to rely upon traditional cookery with a mix of modern
products in the kitchen. Of greater importance, in the long term, was the revolution in kitchen
design and appliances that took place during the first half of the century that, in fact, reduced the
work of home-prepared foods and fostered more elaborate meals. For example, the introduction
of new cooktops, both gas and electric, made cooking multiple dishes far easier. Most important,
however, was the rise of the home refrigerator and freezer, which enabled cooks to keep
perishable products longer and store leftovers. The electric refrigerator was a late introduction to
the household appliance industry, as new motors and the invention of Freon kept the electric
refrigerator from gaining traction until the 1930s. By 1937, however, around half of electrified
homes had refrigerators. The dramatic rise of the refrigerator, it is worth noting, came about
amidst the Great Depression, where between 1929 and 1935 sales increased by more than 700%.
The immediate effect of the technological revolution in the American kitchen was to enable
cooks to practice traditional cooking habits more efficiently. By the postwar period, however,
these technologies served a new purpose: the introduction of convenience and heat-and-serve
meals. While the early refrigerators were quite small, with freezers often only large enough for a
tray of ice, by 1950 the average refrigerator size had doubled, leaving much more space for
prepackaged refrigerated and frozen goods. By 1965, between 13 and 14 million American
households had opted for even more freezer space and had purchased standalone freezers.
Mountains of advertising and promotion advanced the trend towards convenience foods, and the
success of these new foods served the interests of producers. As Paul Willis, president of the
Grocery Manufacturers of America, stated in 1962, “the development of new convenience food
products serves to increase total consumption of the product category.” In the case of tomatoes,
he argued that “the introduction of new processed tomato products, along with the growth of
existing ones, has helped lift annual consumption from 2,500,000 tons to more than 5,000,000 tons since World War II.”  

Central to the emergence of most new heavily-processed tomato products was the rise of tomato paste as a major component of the processing tomato industry. This concentrated tomato product could then be further processed into a wide variety of other products, including juice and sauce. The rise in consumption of canned tomato paste and sauce was a long process. In 1924, the first year in which the USDA estimated any consumption of these products, it estimated that the average American consumed a mere fifth of a pound of tomato paste and sauce per year, compared to more than six pounds per person of canned whole tomatoes and twelve pounds per year of store-bought fresh tomatoes. By 1945, no doubt influenced by the shortage of tin during the war, and the fact that tomato sauce and paste were concentrated and thus material saving products, consumption had risen to almost three pounds per person while the consumption of canned whole tomatoes decreased to five pounds per person. By 1961, the consumption of paste and sauce continued to rise, reaching almost four pounds per person.  

Yet, much of the tomato paste that was produced was not meant to be sold directly to consumers, but was instead used for the production of more heavily processed tomato products. By the 1950s, Heinz revolutionized their production processes by processing all of their tomatoes into paste immediately after the harvest, storing them in large tanks, and converting the paste into ketchup throughout the year. By the 1960s, Heinz had installed massive 125,000-gallon tanks for tomato paste storage in their Tracy, California plant. They also experimented with


storing paste in large 300-gallon flexible aseptic bags and using railroad car tanks to transport them. At the same time, a wide variety of companies introduced pre-flavored tomato sauces. As early as 1950, one specialty shop in Manhattan began selling ten different sauces imported from Brussels in the “French style.” One choice was Sauce Piquante, made with pickles, meat stock and tomato puree. Selling for between 90 cents and $1.25 for a 7 oz. container, these early sauces were definitely for the upper end market. A few years later, prices began to drop as Macy’s offered an eight ounce jars of tomato sauce, flavored with onions, parsley, basil, garlic and oregano for 42 cents. Produced by Charles Olla, an Italian immigrant living in Union City, NJ, these jars still too failed to reach a mass audience, but they set the stage for a major transformation in American cuisine by the 1960s.42

At the same time that tomato paste was gaining in popularity as an industrial ingredient, major companies such as Del Monte and Hunt’s used tomato paste to produce canned and jarred versions of pre-spiced tomato products, including sauces and stewed tomatoes. Del Monte started selling canned tomato sauce around 1945 and by the early 1950s, Hunt’s had emerged as a serious competitor. Hunt’s hired Ernest Dichter, the well-known consumer pollster and marketing expert, to help market their tomato sauce. Dichter advised the company, who he claimed had “created new users and taken them from [users of] paste, soup and canned tomatoes,” to use advertisements to appeal to the creativity and hard work of the cook. Dichter urged Hunt’s to make tomato sauce appear as a continuation of the minimally-processed tomato products of the first half of the century. Despite being much more heavily processed, Dichter

argued that tomato sauce simply made the housewife’s cooking duties “easier,” and urged Hunt’s to give credit to the cook for both the recipe and the cooking. As he found in numerous other campaigns while working for can-makers and canneries, many American consumers were still reluctant to use canned foods, in large part because homemakers and cooks deemed them a lazy practice. For Dichter, however, consumers simply needed reassurance allowing them to “relax and feel safe that the food company is taking over [their] chores.” This trend of new products and sauces was not limited to the canned food industry. Others, such as Lawry’s, came out with a spaghetti sauce mix by the mid-1950s, allowing a cook to add a package of seasoning to a can of plain tomato sauce to produce what they deemed to be an acceptable spaghetti sauce.43

By the early 1970s, the transformation of the tomato processing industry was complete: tomato paste had become a dominant enough commodity that beginning in 1971, the New York Cotton Exchange opened the Tomato Products Associates, which traded futures in tomato paste. This signaled the completion of a huge transformation in tomato production, from an industry based on providing consumers with minimally processed tomato products for home cooking, to an industry based on giving consumers ready to eat, factory made meals.44

The postwar rise of tomato consumption was also due to new uses of the red fruit, including new products like pizza, and new sites of consumption, including the hamburger joint. As one tomato processor noted, people “are eating a lot of French fries and hamburgers, and

what are they putting on French fries and hamburgers? Ketchup. And, they’re being introduced to pizza, and what’s the basic ingredient of pizza? It’s tomatoes.”

Although Italian food had already become popular among many Americans during the first half of the century, the rise of pizza as a staple on American tables began during the 1950s and 1960s as many Americans experimented with various ethnic foods. Pizza had already been brought to the US and prepared at restaurants in many Italian enclaves, but after World War II, pizza became a popular dish on American tables outside of Italian neighborhoods and the northeast and Midwest, where most Italian immigrants lived. Americans of all ethnic backgrounds flocked to Pizzeria Uno in Chicago when it opened in 1943. Within a decade, the New York Times suggested that there might be more pizzerias in the United States than in Italy. A few years later, the paper declared that pizza rivaled the hot dog in popularity. In that article, the Times reported that a pizza bar in a Manhattan department store attracted thousands of hungry shoppers each week. One of the three offerings, a pizza bagel, suggests that the pizza owed some of its popularity to the adaptability of pizza and its easy integration into pre-established American cuisine. Soon, several new products offered Americans the ability to make pizza at home. By far the most popular of these was the frozen pizza, for which the first related patent was issued in 1954. Already in 1950, a New York City baker named Leo Giuffré opened a factory on Long Island that produced refrigerated pizzas that were sold in local shops. After only ten days in business, the factory produced around 3,000 pizzas per day. A similar factory opened around the same time in Boston. The frozen pizza industry, which today grosses as much as $1

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45 Hartzell, interview, in Dickman, Interviews with Persons Involved, 121.
billion annually, took advantage of two trends present in American cuisine during the 1950s and 1960s: the rise of convenience foods and ethnic foods.\textsuperscript{46}

For many Americans, however, their first taste of homemade pizza was with a second product introduced during the early 1950s, a dry goods kit. These packages generally came in three parts: a packet containing the flour and other dry ingredients, a second packet containing yeast, and finally, a can of tomato sauce. Consumers could then add cheese and other desired ingredients at home. For many housewives, still used to making their own bread, this was a relatively easy introduction to the art of pizza making.\textsuperscript{47}

Much like with the pizza, the popularity of the classic American meal of a hamburger and French fries helped drive up tomato consumption. Both as a fresh ingredient – a thick slice of tomato tucked neatly underneath a hamburger bun, and as ketchup both for the burger and the fries, the dramatic rise of the fast food industry and the suburban outdoor cookout popularized these traditional forms of tomato consumption. The hamburger, which originated in the late nineteenth century, was already an American institution by the 1920s. By the mid-1920s, for example, White Castle had locations in St. Louis, Omaha, and Kansas City, and served more than 80,000 burgers a year. By 1931, White Castle had more than 130 locations, and by 1935, in the midst of the depression, the company sold 40 million burgers a year. In addition to numerous other fast food chains, the introduction of the diner helped propel the hamburger’s popularity to new heights. As Andrew Smith notes, already by the 1930s, “virtually every medium sized city in America had drive-ins, roadside stands, diners and coffee shops – all of which served


\textsuperscript{47} Nickerson, "News of Food: Pizza Is Newest on Packaged Mix Shelves."
hamburgers.” Most of these shops did not, however, sell French fries. Already growing, the industry exploded after World War II, and with the introduction of safer frying equipment during the 1950s, burger joints, diners, and the like made possible the widespread consumption of French fries and ketchup. Obviously, the most notable burger restaurant from the 1950s and 1960s was McDonalds, the California based burger chain bought out by Ray Crock, who eventually revolutionized the industry and turned the casual fast food diner into a factory. But there were numerous other chains born during this period, including In-N-Out (1948), Jack in the Box (1950), Carls Jr. (1956) and Tommy’s (1946) in California, Burger King (1953) in Florida, Whataburger (1950) in Texas, and Wendy’s (1969) in Ohio.48

Conclusion

Already one of the most popular vegetables in America, the popularity of the hamburger, French fries and pizza, along with the successes of the fast food and pizza industries during the postwar period propelled tomatoes into an important place in American culinary culture. Radical changes in both the geography and technological changes in tomato production enabled the near-complete industrialization and commodification of the tomato by the 1960s. Each year, the fruits of California’s tomato fields were transformed into a sea of millions of gallons of crimson tomato paste, which were then transformed again into a wide variety of convenience foods. The changes made the process cheaper and more efficient, but it came at the expense of a homogenization of the American diet. Even where new ethnic foods were introduced, they were quickly and drastically altered to become “Americanized” for mainstream consumption. The American pizza, for example, differs radically from what most Italians eat. Large multi-national corporations have swallowed up entire industries, spanning from the field to the shopping cart. A

handful of California companies currently control almost all domestic, processed tomato production, which itself has led to a “hypercompetitive” industry with numerous investigations into corruption, bribery and price-setting. To many observers, American culinary culture (and Americans’ health) has been the primary victim of these changes.49

Yet, from the 1950s until today, there remains a diversity of ideas about the tomato’s place in our lives. The diverse culture of the first half of the twentieth century was not eliminated with the invention of the mechanical harvester and the rise of tomato-based convenience foods. Despite the growing power of the tomato industry, and individual companies within it, individual consumers and gardeners continue to influence how the tomato is grown, prepared and consumed. From the co-operative movements of the 1960s to the organic, “natural” movements of today, alternative views of the tomato have taken shape, and many remain quite popular. These views, and their effects upon tomato production, consumption and American culinary culture, are the subject of the next chapter.

Chapter 6

Meet the Farmer or Become One:
Challenging Commercial Food Culture

The efforts to industrialize the tomato industry during the postwar period were largely successful. Beginning in the early twentieth century and continuing through the postwar era, significant efforts were made to mechanize agricultural production, increase yields through expanded chemical use, and create a national food economy with the emergence of a national network of interstate highways and the subsequent development of the long-haul trucking industry. While sometimes facing significant opposition, by the 1970s, America’s agricultural and food-processing industries were highly centralized, efficient enterprises, increasingly able to shape and control American food culture. Yet, despite these successes, the culture of the tomato, and of American food culture in general, remains diverse, and while corporate ideas of food rank among the most persuasive, other competing views of American food culture remain prominent among American consumers. In order to understand recent changes in the uses and meanings of the tomato, we need to consider more generally these competing food cultures.

Two of these alternative views, farmers’ markets and home gardening, stand out as important counters to the dominance of corporate visions of American food culture. Other examples could be mentioned as well – the slow food movement, the growing popularity of street carts and food trucks, the rise of Community Supported Agriculture (CSA) programs, and numerous others. But several things stand out in these two examples. First, both farmers’ markets and home gardening directly address a critical question that arises in contemporary
times: where does our food come from? And both challenge the corporate answer (anywhere it is profitable) with their own (nearby and if possible under our control). In each case, a growing number of consumers demand increased knowledge of the origins of their food and participation in the production of the food they consume and with all this a rejection of the tasteless “anonymous” corporate tomato.

Second, despite shared values, both home gardening and farmers’ markets attract a very diverse group of people: there are very few restraints on who can be a gardener or a farmers’ market consumer – poor or affluent, rural or urban, liberal or conservative – both farmers’ markets and home gardening draw significant popularity from wide segments of the population, and thus represent in themselves many different ideas about food, how it should be grown and how it should be consumed. Third, each of these examples have an important communal element to them – farmers’ markets are indeed communal spaces, where conversation and the exchange of ideas are often encouraged. Farmers’ markets, in the words of T.A. Lyson, “provide opportunities for producers and consumers to come together to solidify bonds of local identity and solidarity.” But home gardening, too, carries with it important social elements that help further the exchange of ideas about gardening and food in general. These ideas are communicated and formed very differently than corporate ideas of food – which is to say they are rarely advertised and always up for debate.¹

Finally, while there is no guarantee that either farmer’s markets or gardeners ultimately will produce radically different foods than commercial agriculture, both represent a rejection of the century-long quest to transcend the seasonality of the tomato, and food more broadly. Farmers’ markets routinely report consumers asking for foods out of season, and gardeners still

try to produce foods for as long a season as possible, obvious signs that modern Americans still want to transcend the seasonality of fresh food. These alternatives point to, at least, some willingness to abandon the simple notion that you can have food “your way,” and instead for some consumers to return to nature’s clock. While neither farmers’ markets nor home gardening represent a potential replacement of commercial agriculture and commercialized food, they nonetheless provide environments for meaningful resistance to dominant ideas about food production and consumption.

Farmers’ markets and home gardening prove vital as alternative iterations of food culture that at least at times run counter to the dominant food culture espoused by major food companies and often encouraged by government policies. These two examples serve as a reminder of the limits of corporate and government influence on culture, forces which historian Harvey Levenstein has misleadingly argued had already “standardized” American culinary culture by the 1930s. Contesting Levenstein have been scholars like Warren Belasco, who have documented challenges to the dominant food culture from the 1960s onward. Belasco stresses the countercultural roots of alternative food movements and their difficulties “struggling alone against the tide.” While Belasco outlines numerous ways in which the counterculture and other progressive groups challenged food companies and helped increase concern among American consumers over food health and safety, home gardening and farmers’ markets included not only 1960s critics of the American mainstream, but actually included many from that group, crossing ideological boundaries. Just as Adam Rome places much of the impetus for environmental concern in the postwar suburbs, much of the interest in home gardening arose from the backyard garden plot. Interest in both home gardening and farmers’ markets remains an organic and democratic activity – from hippies in Berkeley’s People’s Park, and recent immigrants to
Brooklyn, to suburban moms and dads, many of which were members of Nixon’s so-called “silent majority,” these activities provide diverse, often competing groups the opportunity to seek out and practice their own ideas about food. By influencing millions of Americans to find other means of acquiring and preparing their food, both are important counters to the power and influence of industrial food.²

Most important, by viewing both home gardening and farmers’ markets as important players in the continual development of American food culture, we correct a common perception—the increasing passivity of the American consumer. In recent decades, scholars have often viewed American food and consumer culture with significant pessimism, and on occasion disdain. The primary concern has been on the growing power that commercial culture plays in American life: the individualizing effects of mass-consumption, the ability of advertising and marketing to influence consumer behavior, and the impact of centralized production and processing on limiting consumer options. Home gardening and farmers’ markets, on the other hand, demonstrate that despite the growing power of commercial culture over the course of the twentieth century, serious alternatives to this commercial culture continue to exist. At the root of these alternatives is a demand for increased knowledge of where our food comes from and a desire on the part of consumers to play a more significant role in the productive process. This broad objective challenges the common dichotomy between the active producer and the passive consumer that is at the root of most characterizations of modern consumer society.³

³ The literature on food and consumer culture in general includes many examples of pessimism. Some of the more prominent examples include: Susan Strasser, Satisfaction Guaranteed: The Making of the American Mass
The tremendous growth in popularity of farmers’ markets and home gardening, however, needs to be tempered with the reality that it remains a very minor in economic terms compared to commercial agriculture. According to Eric Berrenson, perhaps 1% of all produce in California is purchased at farmers’ markets despite California ranking among the most popular states for direct marketing of food. A multitude of economic and bureaucratic barriers continue to dissuade institutions – including colleges, hospitals and other large buyers of food – from purchasing directly from local food producers. Despite the upsurge in home gardening over the previous several decades, most gardeners produce only a small portion of their household food needs. Yet, as this chapter will demonstrate, they do represent continued resistance to and growing discontent with commercial agriculture and the dominant food culture.4

Popularity of Farmers’ Markets and Home Gardening, 1945-Present

The rise of farmers’ markets and home gardening is a complex, even surprising story given the economic forces that drove the food industry. In fact, during the decades following World War II, both farmers’ markets and home gardening went into decline. Farmers’ markets began their decline as early as the 1930s, as the Great Depression wreaked havoc on small farmers throughout the country. Providing an accurate count of farmers’ markets in the United States over time is a difficult task. Numerous scholars have attempted to complete such a project,

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but with varying definitions of what a farmers’ market is and with inadequate regulations and reporting of farmers’ market activity, providing an accurate count of farmers’ markets has proven illusory. Nevertheless, scholars agree that the postwar period saw a continued decline in farmers’ markets, as the dual forces of suburbanization and centralization of agriculture formed serious impediments to the existing local market tradition in the United States. Resellers rather than farmers most often populated urban markets that survived, and those sellers hawked goods bought on the wholesale market, often produced hundreds, if not thousands, of miles away.⁵

The tenuous position of farmers’ markets in the 1950s and 1960s represents more than a half-century of “progress” in American agriculture, fueled by the forces of economic and geographic centralization. As historian Jane Pyle noted rather pessimistically in her 1971 “Farmers’ Markets in the United States: Functional Anachronisms”:

“A prescient person of the 1890’s could have foreseen that the public market was doomed by a changing society. The railroads connected eastern population centers with distant open lands, where favorable climate and cheap labor joined forces to stock the urban larder.”

Where the steam locomotive sounded the death knell for many local agricultural economies in the late nineteenth-century, during the middle of the twentieth-century, as Shane Hamilton has argued, a wave of centralized distribution was made possible by the emergence of the trucking industry and the interstate highway system. New agricultural technologies and large government-funded irrigation projects in the Western United States all threatened the existence of local and regional foodways.⁶

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Unlike farmers’ markets, home gardening remained popular throughout World War II, but by the late 1940s and continuing at least through the 1960s, home gardening too declined. In 1950, for example, agricultural experts reported that Rockland County, NY, home to around 9,000 victory gardens during World War II, had seen a 40 percent decline in home gardens and a 50 percent decrease in garden size. A look at popular gardening magazines such as *Better Homes and Gardens* indicates a much greater interest in lawn care and other yard beautification rather than home food production during the 1950s and 1960s. Even as Secretary of Agriculture Charles F. Brannan announced the establishment of the “Liberty Gardens” program in 1951, which focused on maintaining the popularity of vegetable and fruit gardens, a survey found that only 6.9 percent of New York City residents and just over 30 percent of New York suburban and rural residents planted gardens. Flower gardening, on the other hand, was on the rise, as over 20 percent of New York City residents, and more than 65 percent of suburban and rural residents practiced some form of flower gardening.\(^7\)

Ironically, then, just as many Americans escaped the cities for the suburbs, giving them more space to garden, vegetable gardening became less common. Already by the 1950s and 1960s, as Gary Cross notes, much of the American workforce was sold on the idea of working longer hours as a tradeoff for higher wages and thus fuller participation in the emerging consumer culture (including entry into suburbia itself). This tradeoff, for many, left little time for home gardening. The consumer culture itself, with products like frozen TV dinners, Spam, and Campbell’s Soup, was designed around the appeals of convenience. Suburbanization, too, has been linked with a desire to construct the home as a purely domestic space, physically separated from the productive sphere. And, as often observed in the many critiques of postwar suburbia,

new home owners were more interested in displaying and meeting middle-class standards (as in the growing of the “perfect” lawn or backyard patio barbeque) to find time for the rigors of gardening. Finally, the rise of the automobile and the interstate highway system made long summer vacations accessible for the vast majority of American suburbanites. With significant stretches of the summer spent away from the home, gardening became more difficult as it requires constant maintenance throughout the growing season. For many Americans still interested in outdoor life and growing plants, the result was increased attention on domestic activities like lawn care and flower gardens at the expense of home vegetable gardening.8

Yet the early 1970s provided an impetus for the revival of both the farmers’ market and home vegetable gardening. It was at this time that a host of new concerns and values came together to lead many Americans to look for new means of food acquisition. A widely recognized motivation for many Americans was a rejection of the “artificial.” Many in the counterculture, along with other groups, while having practical concerns regarding health and the environment, also had serious ideological conflicts with an emerging American society that, in their view, was based on conformity and standardization. From Stewart Brand’s Whole Earth Catalog to Andy Warhol’s Campbell’s Soup Cans, cultural critics saw food as a very important topic to addressing a broad criticism of American society. While relatively few used their ideologies to attempt a complete withdraw from American society, these critiques of food, as Warren Belasco has argued, did lead to significant battles over food. Home gardening and farmers’ markets were additional avenues for such battles to be fought. Yet, the 1970s went far beyond these countercultural outliers. Environmental alarm was at an all time high. Beginning

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with Rachel Carson’s 1962 *Silent Spring* and a wave of environmental legislation during the late 1960s that culminated in 1970 with Richard Nixon’s establishment of the Environmental Protection Agency, Americans across the board became increasingly concerned with environmental issues, including pesticide, insecticide and fertilizer use in food production. A second popular concern was the rising price of fresh produce. Inflation brought on initially by the Vietnam War became a full on recession by the early 1970s as OPEC members declared an oil embargo. The energy crisis shocked an already unstable economy: unemployment rose from just under five percent in 1973 to a postwar high of 8.5% in 1975. From 1972 to 1973, food prices spiked across the board, with the price of eggs increasing almost fifty percent, poultry forty percent, meat twenty-five percent, and fresh vegetables eighteen percent. 9

These conditions created an opening for farmers’ interest in direct marketing and in new efforts for home food production. During the late 1960s and early 1970s, farmers’ markets made a remarkable comeback fueled less by radical elements than by mainstream Americans. In no small part, this was because farmers’ markets stood in stark contrast to the industrial model of centralization and long-distance food networks that had become dominant by the 1960s. Passage of the Farmer-to-Consumer Direct Marketing Act in 1976 lent legitimacy to a revival in direct marketing efforts by farmers that began in the 1960s and culminated with a revival of farmers’ markets during the 1970s. By 1979, just three years after legislation allowed farmers’ markets to become “certified” by proving their products were being sold direct by farmers, twenty-four

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certified farmers’ markets had popped up across the state of California. Nearly 400 farms in California also allowed consumers to come to the farm and “pick your own” fruits and vegetables. Elsewhere the growth was equally remarkable. In the 1970s there were 20 markets in the state of New York. By 1985, in no small part due to the success of New York City’s “Greenmarket” program, this number had swelled to more than 115. In 1979, New York City’s Greenmarkets, a coordinated effort by the city’s Council on the Environment, operated eight locations and did a total of $1 million in sales. This program expanded to 18 locations in 1985, where more than 130 farmers provided fresh food to customers at Union Square, across the street from the World Trade Center, and a host of neighborhoods across the five boroughs. In 2006, this number rose to forty-five when ten new Greenmarkets opened, a single year-record. Many years the city actually has difficulty finding enough farmers to fill all of the locations as demand for fresh produce outpaces the ability of local and regional farmers to supply it. The nearby state of Connecticut also saw a substantial increase in farmers’ markets during the 1970s and 1980s. Between 1981 and 1985, the number of farmers’ markets in the state rose from 17 to 28. As these markets opened their doors to the public, they were often met with great fanfare. When a farmers’ market opened in Burbank, CA in 1983, for example more than 2,000 consumers showed up on the first day, more than fifty percent above expectations. The revival of farmers’ markets, particularly in California and the Northeast, led many supermarkets to try to compete by creating a farmers’ market-like atmosphere in their stores, replacing the sterile metal shelving with wooden-crates, and creating outdoor open-air festivals during the harvest months.10

High food prices coupled with rising gas prices that kept many families from taking yearly summer vacations also gave Americans a greater incentive to garden. Already by 1971, W. Atlee Burpee and Co., one of the nation’s largest seed houses, reported greatly increasing sales, many outlets reporting between 25 and 50 percent increases in seed sales from the previous year. Greenhouses across the country experienced record sales, as well; one nursery in New York City, the Farm and Garden Nursery, had its highest sales in its 35 years of operation in 1971, even higher than during the Victory Garden years. In 1972, an estimated 42 percent, or 28 million households, had a vegetable garden. By 1973, 46 percent, or 31 million households, planted vegetable gardens. In the same year, Americans spent an estimated $100 million on seeds alone (though not specifically on vegetable seeds). Seed companies were largely unprepared for the dramatic increase in sales, as many companies ran out of catalogs to distribute and seeds flew off of shelves faster than they could be restocked. The growing trend was recognized by the USDA, which devoted its 1977 Yearbook of Agriculture entirely to the topic of home gardening.\textsuperscript{11}

The popularity of both farmers’ markets and home vegetable gardening outlived the contentious period in which they became popular. They became a complex counter culture to the corporate tomato and have increasingly drawn interest from diverse segments of the American population. In the case of farmers’ markets, they have enjoyed a continual rise in popularity from their roots in the 1970s through today, where according to Cheryl Brown and Stacy Miller, they have become the “historical flagship of local food systems.” From around 340 farmers’ markets in 1970, by 1994, the USDA counted 1,775 farmers’ markets operating nationwide. In

2006, this number had grown to 4,385, a 247% increase in twelve years. Likewise, total sales at farmers’ markets continue to grow: in 2000, the USDA estimated total sales at farmers’ markets at $888 million; by 2009, this number had risen over $1 billion. As a whole, direct marketing to consumers has expanded on all fronts, including farmers’ markets, farm stands, and community supported agriculture (CSA) programs. From their formal beginnings in the 1980s when only a handful of successful CSAs, by 2006 there were more than 1,100 CSAs operating throughout the United States, providing consumers with local, fresh produce. On the whole, demand for locally grown food continues to rise. In 2009, the USDA estimated that total direct-to-consumer sales totaled $1.2 billion. The USDA further estimates that farmers do a total of $4.8 billion in sales of locally grown foods using both direct-to-consumer methods and “intermediated marketing channels” including supermarkets, regional distributors, and direct sales to restaurants.  

In addition to the difficulties in accurately counting farmers’ markets, defining their total economic importance and effect on American food culture has also been met with great challenges. Farmers’ markets and other direct sales methods are often seen as skirting the line between formal and informal economies, where full-time, part-time and non-farmers often participate in producing and selling products. With thousands of farmers’ markets across the United States and many thousands more farm stands and ad-hoc markets, complete record keeping has proving an illusory goal. For their part, the grocery industry has sought to downplay

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the influence and significance of farmers’ markets and other sources of direct marketing by farmers. *Supermarket News* reported in 2012 the findings of a W.K. Kellogg Foundation study, reporting that ninety-five percent of shoppers had bought produce at a supermarket in the last year, and defensively declared that “consumers turn to supermarkets for the majority of their produce purchases” with only “a small percent rel[y]ing on alternative retailers… for the bulk of their produce.” The same report, however, indicated that fourteen percent of consumers did the majority of their produce shopping at farmers’ markets, a very sizable number given the state of farmers’ markets just a few decades before.¹³

Academic studies have produced similar results. Marianne McGarry Wolf, Arianne Spittler, and James Ahern found in a 2005 study that while 95% of consumers had frequented a supermarket in the previous month, journalist Timothy Egan found that upwards of three million Americans purchase produce from farmers’ markets each week. Between 1997 and 2002, estimated income to farmers from all forms of direct sales increased from just under $600 million to more than 800 million. Similarly, between 2002 and 2007, these sales increased to $1.2 billion annually. Similarly, while farmer income from farmers’ markets is relatively meager – in 2000, the USDA estimated that 29% of farmers earned less than $1,000 per year selling at farmers’ markets – total direct sales increased from $5,349 in 1997 to $6,958 per farm in 2002. The direct economic impact of farmers’ markets and other forms of direct sales is thus quite small compared to the multi-billion dollar food systems that direct-sales compete against, yet it is nonetheless a sizable – and growing – form of competition with commercialized food.¹⁴

The promise of farmers’ markets in the 1970s served as a counter to the food production practices of modern American agriculture, with its focus on mechanization, increased chemical use, and above all, concentration. In addition to growing consumer demand, farmers also saw direct marketing as a potentially fruitful avenue to pursue. The crisis among small farmers during the second half of the twentieth century is well documented, and this problem did not end abruptly in the 1970s when farmers’ markets began their comeback. From 1993 to 2000, for example, 33,000 farms with sales of less than $100,000 stopped operating, with that land either lying fallow or, more often, becoming swallowed up into larger, industrial farms. Yet, throughout this period, farmers’ markets and other sources of direct sales have proven a vital part of keeping small farmers afloat. In a study conducted in 2007, Alan Hunt reported that 36% of farmers surveyed at farmers’ markets considered higher profit margins a significant motivator for selling at farmers’ markets. In 2000, an estimated 19,000 farmers sold exclusively at farmers’ markets, up from 6,648 in 1994. USDA senior marketing representative K. Earl Gordon put it succinctly in 1989 when he wrote, “Farmers markets are a way for smaller farmers to make a living.”

Despite the continued tenuous economic position of small-time farming, over the past twenty years there has been an upsurge in non-farmers becoming small-time farmers. Urbanites, often fed up with city living, have returned to the land in large numbers. These farmers are a second-generation of back-to-the-landers. While their interests remain in the environment,

health, and food quality, they, unlike many earlier ex-urbanites and suburbanites, remain wedded to capitalism, willing to participate in alternative marketplaces in order to provide consumers with better quality, better tasting food. Some, such as Ted Stark, a Pennsylvania farmer that sells mostly tomatoes and hot peppers at the Greenmarket’s Union Square location, have become quite well known among food critics, chefs, and consumers. Hundreds, if not thousands, of others operate much more anonymously, including Tracie Sturges, who bought a farm in Beaver County, PA with her husband in 1989, operating the farm almost entirely on their own and selling their goods at nearby markets. These green farmers have been drawn to farm for a number of reasons, including a desire to return to the land, a love of food, environmental or health concerns, and a desire to make a difference. Their contributions, along with those of already established small farmers, have helped farmers’ markets maintain and expand their popularity, and have strengthened their appeal as an alternative to modern industrial agriculture.\footnote{Tim Stark, \textit{Heirloom: Notes from an Accidental Tomato Farmer} (New York: Broadway Books, 2008); Jeanne Dutel-Martino, "Farmers Market Opens Tonight in Cranberry," \textit{Pittsburgh Post-Gazette} (9 May 1997); Karen Kane, "For This Couple, Farming Is Worth the Long Days, Dirty Hands and Low Pay, They Didn't Grow up Farming, but They Learned to Love... - Living Off the Land," \textit{Pittsburgh Post-Gazette} (19 Aug 2001); See also Kristin Kimball, \textit{The Dirty Life: On Farming, Food, and Love} (New York: Scribner, 2010).}

The growth in vegetable gardening, likewise, extended through the 1970s, and continued at least into the mid-1980s. A Gallup poll indicated that 47 percent of American households had a vegetable garden in 1981. Overall, as one \textit{Christian Science Monitor} reporter extolled, more Americans were planting vegetable gardens than watching professional sports on TV. In 1983, a poll produced for the National Gardening Association reported that 42 percent of American households had some form of vegetable garden. In 1985, home gardeners produced an estimated $9.2 billion worth of homegrown vegetables. By 1987, with improved economic conditions, the number of households estimated to have vegetable gardens dropped off to 33 percent, yet farm
and garden centers reported a 20% increase in sales for lawn and garden supplies as the average American spent $250 on their lawn and garden.\textsuperscript{17}

During the 1990s, vegetable gardening continued to be a popular outdoor hobby, even as it remained significantly less popular than its peak during the 1970s. A relatively poor year in 1993, where only 26 percent of American households had gardens, was countered in 1994 with a very strong comeback, where 35 percent planted gardens. Growing sales of gardening supplies and products, however, also marked the 1990s. After leveling off at the beginning of the decade, in 1993 the industry experienced a 10 percent growth rate, in part driven by increased interest in new gardening gadgets, specialty supplies, and the rise of gardeners’ purchasing seedlings rather than planting from seed. In just a year’s time, according to the National Gardening Association, seed sales dropped from $169 million in 1992 to $20 million in 1993 as consumers increasingly purchased more expensive, pre-grown seedlings rather than grow their own from seed.

Throughout the 2000s, home vegetable gardening has had less popularity, with between 22 and 27 percent, representing between 25 and 31 million households, planting vegetable gardens. The recession that wreaked havoc on the global economy in 2009, much like in the 1970s, spurned Americans to plant vegetables at home again, as several years of low home gardening levels between 2006-2008 was matched with the decades highest vegetable gardening participation rates in 2009. As consumers also became weary of the limited selection of varieties available for

purchase as seedlings, seed sales have made a comeback, with Burpee reporting an increase of 20-25% in sales in 2008, and a similar increase in 2009.\textsuperscript{18}

This data suggests several things about the popularity of home gardening from the early 1970s until the present. First, the popularity of home vegetable gardening is related to the national economy, indicating that a poor economy influences at least some households’ decision to take up vegetable gardening. More important, however, is that close to one-third of American households plant vegetable gardens regardless of the state of the national economy. Indeed, a variety of other factors play a significant role in influencing diverse groups to participate in vegetable gardening, including the desire “get back to nature,” to ensure a healthy food supply, to grow exotic and otherwise difficult to find foods, a belief that homegrown vegetables taste better, as a form of exercise, or just having a competitive spirit and wanting to grow the first or biggest tomatoes on the block.

Thus, the emergence of home gardening and the rise of farmers’ markets during the 1970s share many common elements, including a desire for more affordable food, environmental and health concerns, and even a general concern for the loss of individuality and control in postwar America. Yet, in both home gardening and farmers’ markets, different actors and groups were attracted to these alternative food cultures based on their own unique circumstances. The variations in the motivations for shopping at farmers’ markets or planting a vegetable garden, and how different groups went about doing so, illuminate the complexities of each of these

alternative food cultures, and also help underscore the importance of the 1970s as the backdrop for the revival of each of them.

Diversity in Farmers’ Markets

Beyond the stories of thrifty gardeners, organic produce-seeking consumers, and diverse truck farmers is a still more complex web of motivations and players. Farmers’ markets reflect the diversity of the communities that they serve and the wide range of ideas about food production and cuisine that exist in the United States. However, the picture usually painted is of a community of counterculturalists, many of whom have become yuppies, who dominate the gardening movement. Historian Lisa Hamilton, for example, argues that while farmers’ markets “grew organically from their communities,” reflecting their urban, suburban and rural origins, farmers’ markets that cater to foodies, offering artisan breads, heirloom vegetables, and the like, have come to dominate our perception of farmers’ markets. Aided by lifestyle magazines such as Gourmet and Sunset, Hamilton contends that the dominant perception of the farmers’ market in the United States has become one filled with:

“fresh-faced suburban moms collect[ing] bright green and perfect eggplants in wicker baskets; where a street musician or clown is always on call to entertain; where four ounces of organic herb chevre fetch five green dollars.”

For many observers, the success of the modern farmers’ market is predicated on the transformation of the farmers’ market from a commercial space to a social and cultural experience, one dominated by the youthful, progressive and affluent. Yet from their inception in the 1970s, the modern farmers’ market has appealed to the working poor along with urban
professionals, the elderly and the newer wave of young foodies that have become popular in America during the past two decades.\textsuperscript{19}

The success of farmers’ markets geared towards serving this diverse demographic has in some important ways influenced our food culture, increasing the popularity of organic and “natural” foods, and at the same time pushed American cuisine towards an appreciation of the homemade, the ethnic, and the interesting. In the past several decades, retailers such as Whole Foods, and farmers through community supported agriculture (CSA) and farm stands, have drawn on the popularity of farmers’ markets in their own independent ventures, bolstering the image of the affluent foodie as the leading driver of change in food culture.\textsuperscript{20}

Consider how exclusive restaurants have contracted with local farmers, often through farmers’ markets, for their produce needs. One example of this is Ted Stark, the ex-New Yorker who started a tomato farm in rural Pennsylvania. He very quickly made a name for himself among the high-end restaurateurs and chefs that regularly frequent the Union Square market in search for the best tomatoes. By the mid-1990s, well before he published a memoir describing his transformation from a government consultant in New York City to a tomato farmer in rural Fleetwood, PA, Stark had garnered much attention from press in New York City and Allentown, PA and had secured the support and business of numerous chefs, including that of Charles Kiely, the chef at The Knickerbocker, who maintained a standing order with Stark and regularly bought cases of heirloom tomatoes from him for use in his sauces. In Kiely’s words, “Within a week of Tim’s coming here, all the chefs knew about him.” Stark’s memoir reads as a manifesto for the


fooie movement: it quickly becomes food with a story, with Stark narrating the trials and tribulations of operating an organic tomato farm. After describing the neat rows and perfect-looking fruits produced by industrial agriculture, Stark said of his own harvests: “The eye for smooth-sailing symmetry ran aground at my renegade tomatoes, chilies, and eggplants. Planted by hand and never abetted by herbicide, my rows were woefully crooked and lost in a sea of run-amok weeds.” Not surprisingly, the tomato that Stark describes – the ugly, non-industrial, and artisan tomato - has become the very face of foodie culture.21

Yet, this picture excludes much. The growth of foodie culture, and the rise of organic and “natural” food is not a phenomenon exclusive to American urban centers. Its reach extends into small towns and suburbs throughout the country, including Paso Robles, California, a small town of 30,000 situated roughly halfway between Los Angeles and San Francisco, where a farmers’ market in the city park has become, according to The Los Angeles Times, the “center of the city.” There, “a small but passionate group of organic farmers, food artisans and restaurateurs has come here determined to transform the local steak-and-potato mentality into something … higher up on the food chain.” Even the farmers’ markets surrounding rural State College, Pennsylvania cater heavily to this crowd, with Amish farmers selling a variety of wares including locally produced honey and raw milk.22

Despite the prevailing images of farmers’ markets as hot beds of progressive politics and lifestyle, farmers’ markets remain diverse institutions, and continue to reflect a variety of ideas about food. The media attention garnered by the most popular markets, including the Union Square Greenmarket, has led to innovation and change among other farmers’ markets as they

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fight to remain successful commercial ventures, but they have also led to an overstatement of
these markets’ (and the “foodies” demographics’) influence, as markets throughout the country
follow a variety of models in order to serve farmers and their local communities. Farmers’
markets and their customers, as one observer argues, represent many “variations on urban life.”

One of the leading motivations behind the resurgence of farmers’ markets in the 1970s,
and one that continues to be of great importance today, is the goal of providing the poor with
access to affordable, high quality food. As *New York Times* writer Peter Applebome recently
remarked, not all farmers’ markets are “the new omnivore’s playland of the Union Square
Greenmarket,” with their “artisanal cheeses, heirloom tomatoes, $8 organic breads, grass-fed
beef, spinach/goat cheese quiches or local musicians singing James Taylor songs.” Markets
grounded specifically towards the poor take many forms: in Roosevelt, NY, a farmers’ market
consists of a simple setup of three tables of fresh produce. In Camden, NJ, a new program began
in 2011 for a mobile farmers’ market that also includes “vision screening, blood-pressure testing,
even needle exchanges.” During the late 1970s, when the revival of farmers’ markets was in its
infancy, the Community Revival Team in Hartford, Connecticut organized a number of programs
designed to increase access to food among the city’s poor, including starting an urban garden, a
year-round canning facility, and opening a farmers’ market. Farmers’ markets are often used to
increase access to food in underserved, impoverished areas. In 1981, a market opened in the
community of Compton, CA, a city of 70,000 with only five grocery stores. In addition to
providing easier access to fresh produce, the market was also meant to bring money back into the
community and region, as previously residents were forced to either shop at the few chain
supermarkets in town, or travel outside the city to purchase food. This is not an isolated case: as
late as 2000, with only one supermarket in Chester, Pennsylvania, a relatively poor town of

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30,000 several miles west of Philadelphia along the Delaware River, the farmers’ market remained a vital venue for area consumers to purchase fresh produce.\textsuperscript{24}

From the beginning of the movement, the elderly and the poor figured heavily in plans to open new farmers’ markets across the nation. In 1985, a market opened in San Pedro, California with the stated purpose, according to manager Dale Whitney, of bringing “good, healthy produce at reasonable prices to residents of San Pedro, particularly its low-income and elderly population.” When a market opened in nearby Long Beach in 1980, farmers were met with “thousands of senior citizens in straw hats with shopping bags and carts in hand.” Agricultural and marketing exports routinely examined the cost savings of farmers’ markets compared to supermarkets and grocers. In addition to purchasing fresher, more locally produced food, these experts routinely determined that farmers’ markets throughout the 1970s and 1980s remained significantly cheaper than the same food at supermarkets. One study produced at UC Davis in 1979 argued that farmers’ markets provided a 71% savings to the consumer, a number that most analysts concluded was too high. A study of the farmers’ market in Pasadena, CA indicated that consumer savings was about 34%, a much lower but still very substantial figure.\textsuperscript{25}

The ability of farmers’ markets to aid the poor increased substantially in 1992, when for the first time Congress passed a farm bill that included provisions for farmers’ markets to be a part of Women and Infant Children (WIC) and other food aid programs. Already before this, a


few states such as New Jersey experimented with providing vouchers for use at farmers’ markets. In 1991, residents of Cumberland and Salem Counties were eligible to receive $10 vouchers for use at farmers’ markets. Proponents of the program, including New Jersey WIC director Deborah Jones, hoped that the next farm bill would include measures to expand this program nationwide. The Farmers Market Nutrition Program (FMNP), included in the 1992 farm bill, did exactly this, providing low-income families with “fresh, unprepared, locally grown fruits and vegetables.” This program has provided hundreds of thousands of participants with vouchers for use exclusively at farmers’ markets. In 1993, the first full year of the program, almost 350,000 people from eleven states received benefits. The following year, the program expanded to twenty-four states, with more than half a million participants receiving $5.6 million in benefits. In 2000, 58% of farmers’ markets accepted WIC payments. By 2012, this program had expanded to thirty-six states and 1.7 million households. In 2001, the USDA established an additional program, the Seniors’ Farmers Market Nutrition Program (SFMNP), aimed at providing vouchers for the low-income elderly population. In 2012, almost 900,000 seniors received vouchers through this program.  

These programs not only increased access to farmers’ markets among the poor, but also provided state and federal support for farmers’ markets, injecting much needed money into the markets and into farmers’ pockets. Richard McCarthy, executive director of the Crescent City Farmers Market in New Orleans, observed that helping more than 5,000 seniors enroll in the

26 Jenifer Naughton, "Helping the Poor Buy Fresh Fruits and Vegetables," New York Times (22 Sep. 1991); Richard E. Just and Quinn Weninger, "Economic Evaluation of the Farmers' Market Nutrition Program," American Journal of Agricultural Economics 79, no. 3 (1997); Christopher Bedford, "Meeting the Challenge of Local Food," Business 28, no. 1 (2006); Payne, “U.S. Farmers Markets – 2000,” 19. For data on the FMNP, see http://www.fns.usda.gov/fmnp/overview; For data on the SFMNP, see http://www.fns.usda.gov/sfmnp/overview. The USDA’s Farmers’ market programs have not been without their troubles, including the difficulty in transitioning towards a paperless payment system, which has in many cases made it difficult for small farmers to accept program members. See, for example, Corby Kummer, "Less Green at the Farmers' Market," New York Times (10 May 2007).
program provided the market with over $100,000 in sales. These same seniors, McCarthy said, often spent their own money as well after seeing how much high-quality food they could get at the market. Moreover, by increasing access to the poor, farmers markets have become more dependent on spending by these groups, forcing farmers’ markets to appeal more to these groups. McCarthy continued, arguing that the program “helps bring the farmers’ market out of the froufrou foodie confines and makes it a healthier experience for the whole community.” In other words, these programs help ensure that farmers’ markets continue to adapt and appeal to a wide variety of groups, not simply the young, affluent crowd that pervades our perceptions of farmers’ markets.27

Farmers’ markets too, often reflect the culinary curiosity and ethnic heritages of the communities in which they serve. In the mid-1970s, for example, just a few miles away from the Greenmarket’s Union Square market, a neighborhood farmers’ market emerged in Jamaica, NY, a predominantly African-American neighborhood in Queens. What was once an overgrown lot was transformed into a fair, offering residents inexpensive foods, many of which were otherwise unavailable. One farmer made a weekly trek to his family farm in Georgia and returned with “okra, black-eyed peas, watermelon and collard greens,” drawing on the southern roots and culinary style of many of New York’s African-Americans and perhaps playing to racial stereotypes.28

The Farmers’ Market, American Food Culture, and the Tomato

While farmers’ markets (a major component of which is the tomato) have become economically and socially diverse, most share common appeals. On its face, although the farmers’ market represents a minor challenge to industrial food in terms of market share, this

local institution has challenged the values and methods of the industrialized product. There are many reasons for consumers frequenting farmers’ markets, including cost and variety of food available, but two motivations stand out among them. First, the farmers’ market is often seen as “the historical flagship of local food systems,” offering consumers local alternatives to the national food network most readily represented by supermarket chains. While supermarkets and other outlets increasingly stock fresh, local and organic foods, the farmers’ market, for many consumers, more fully embodies their philosophical and aesthetic demands. For these consumers, a desire for local, fresh and healthy food is the very foundation of the farmers’ market. Second, one of the appeals of farmers’ markets is that they provide a critical link between agriculture and the kitchen table. Farmers and consumers sometimes want to share stories, ideas, and recipes, especially in an age of the impersonal market. Even in the age of the Internet, where information is democratized by instant access, the farmers’ market provides sources of information and an invaluable social setting that has largely disappeared from buying and selling. These interactions – of food and people – both represent and perpetuate the growing diversity in American food culture.\textsuperscript{29}

Although it remains on the fringe, the demand for “fresh” and local food has increased in the past several decades.\textsuperscript{30} Gourmet News declared in 2007 that “the days when organic

\textsuperscript{29} Brown and Miller, “The Impacts of Local Markets”: 1296.
\textsuperscript{30} There is very little consensus among scholars, farmers, or consumers about what exactly “local” is. Social scientists have had great difficulty finding consistency in how consumers define “local.” In some cases, consumers consider produce grown within one’s state or region to be local. In many cases, consumers limit the term “local” to mean grown within one’s county or adjoining counties, thus undermining the efforts of many states to create a statewide brand for agricultural products. In a few studies, consumers abandon political and geographical boundaries altogether and instead define “local” based on driving time from farm to market. The literature on statewide branding efforts is extensive. For less successful efforts, see David B. Eastwood, John R. Brooker, and Morgan D. Gray, “Location and Other Market Attributes Affecting Farmer’s Market Patronage: The Case of Tennessee,” Journal of Food Distribution Research (Mar. 1999): 63-72; Paul M. Patterson, Hans Olofsson, Timothy J. Richards, and Sharon Sass, “An Empirical Analysis of State Agricultural Product Promotions: A Case Study,” Agribusiness 15, no. 2 (1999): 179-96. For the more successful case of New Jersey, see Adesoji O. Adelaja, Robin G. Brumfield, and Kimberly Lininger, “Product Differentiation and State Promotion of Farm Produce: An Analysis of the Jersey Fresh Tomato,” Journal of Food Distribution Research (Sept. 1990): 73-85. For studies of consumer
consumers were the hippies among us are over.” Those interested in local, natural and organic foods increasingly “are parents and those focused on lifestyle and values.” Consumers regularly indicate a stronger desire for locally produced foods than “organic”, despite the overall increase in demand for “organic” and “natural” foods as well.31

Though some studies suggest that consumers may have an inherent affinity towards “local” food, most cases studies find that consumer preferences for local food are based primarily on extrinsic factors: a desire to support their local community, decreasing transportation costs and fossil fuel reliance, and in most cases, a perception that local food is healthier, fresher, and tastes better. For example, in her study of consumer preferences for local produce in southeast Missouri, Cheryl Brown found that while 82% of consumers considered quality and freshness to be of primary concern, only 1% listed the origin of food as the most important factor in their purchasing decisions. Nonetheless, 73% of consumers believed that the quality of food available at farmers’ markets was superior to food at supermarkets. Likewise, a study of North Carolina farmers’ markets found that 88% of respondents frequented farmers’ markets for fresh produce, while only 64% indicated that they went for local products. In general, as Marianne Wolf, et al. have argued, many consumers consider farmers’ market produce to be “fresher looking, fresher tasting, a higher-quality product, a better value for the money, and more reasonably priced than supermarket produce.” Ultimately, then, for many

consumers, the appeal of local food stems not simply from it being grown nearby but by the assumption (correct or not) that it is fresher, healthier, and at least sometimes costs less.32

These ideas of local food as fresher and healthier frame the appeal of the homegrown and locally produced tomato. For many, as much as the pink, tasteless winter tomato represents some of the worst effects of commercial agriculture, the tomato also most fully represents the superiority of local, fresh produce. For Ronni Lundy, author of In Praise of Tomatoes,

“the tomato is the best way to demonstrate why you want to patronize local farmers. … The closer to the source, the better taste you’re going to have. People who don’t have to be fretting about early production, ease of picking or shipping long distances can concentrate on flavor.”

Consumers flock to farmers’ markets for the opportunity to find the perfect tomato: Fritz Sanders, of Chambersburg, Pennsylvania, remarked upon a visit to a local farmers’ market in 2010, “Man, I could eat a good tomato.” Likewise, in 1976, soon after a Greenmarket location opened on E. 59th St., consumers flooded the market for fresh produce, finding beefsteak tomatoes unlike any one could find at a supermarket. Market observers have regularly advised consumers to “take a drive into the country or visit your local farmers market” to find the “best” tomatoes. Julio Guridy, executive director of the Council of Spanish-Speaking Organizations of the Lehigh Valley, put it simply following the organization’s creation of a farmers’ market in Bethlehem, Pennsylvania: “Everyone likes a tomato that tastes like a tomato.”33


There is substantial evidence to suggest that consumers more readily identify local tomatoes as more valuable than other local produce. A study concerning direct marketing of produce in Delaware in 1997, for example, found tomatoes to be among the most popular fruits or vegetables purchased by consumers at both farmers’ markets and roadside stands, the latter a far more popular venue for fresh produce purchases in Delaware. Almost 50% of consumers reported visiting direct farm markets such as roadside stands every month, compared to less than 20% for farmers’ markets. At roadside stands, nearly 70% of consumers reported that they were very likely to buy tomatoes at farm stands (ranking second behind sweet corn) compared to 30% at farmers’ markets (ranking first). A study of the statewide “Jersey Fresh” brand also indicated a strong affinity among New Jerseyans for their state’s tomatoes compared to other local products. The increased demand for local tomatoes is in part due to higher dissatisfaction with supermarket tomatoes than other produce. A study in Knoxville, TN, for example, indicated that around 30% of Knoxville consumers were dissatisfied with the out-of-state tomatoes they found at retail markets and found local tomatoes a far superior alternative to the out-of-state tomatoes offered in supermarkets. Overall, around 60% of Knoxville area consumers believed that local tomatoes had better freshness and taste than out-of-state tomatoes, almost 40% believed the local tomatoes had a better appearance, and just under 50% of consumers believed that local tomatoes were more nutritious. These numbers were much higher for tomatoes than other locally produced foods.34

The success of farmers’ markets as “flagships” of local food is in part dependent upon the continued consumer perception of high quality and local offerings at farmers’ markets. Gerald Etter, of the *Philadelphia Inquirer*, declared that “It is there,” at the farmers’ market, “that you generally find fresh, home-grown and quality foodstuffs. For the most part, you can select your own produce and do not have to be concerned with the likes of pre-packaged goods.” In a review of farmers’ market policies, however, the USDA found in 2000 that fully 63% of farmers’ markets permitted processed foods to be sold, 52% allowed prepared foods, and 58% of markets also let vendors sell crafts. Similarly, 45% of farmers’ markets allowed crops from outside of the local area to be sold and 40% permitted items to be resold at markets. Thus, despite the perception of high quality and fresh, local food at farmers’ markets, many markets have lax regulations allowing for processed and non-local foods to be sold alongside fresh, local produce.\(^{35}\)

Efforts to limit the types of products sold at farmers’ market to locally grown or produced products not only benefit local farmers by ensuring fair competition and benefit consumers by ensuring high quality products, but they also provide an important marketing tool for the markets themselves, helping them (accurately or not) continue to be seen as superior markets for fresh and local foods. Many markets have increased their regulations in recent years, limiting how far products can be transported, limiting vendors from selling foods that they (or their neighbors) grew, and the types of products available for sale. New York City’s Greenmarkets are among the most stringent farmers’ markets, requiring that all farmers be located within the mid-Atlantic region, which they define as 120 miles to the south, 170 miles east and west, and 250 miles north of New York City. These regulations, whether imposed by government or the markets

themselves, have helped reinforce an image of farmers’ markets as premiere locations for healthy, local food.\(^{36}\)

Perhaps even above their reputation for having fresh and local produce, many consumers see farmers’ markets as an important social space for interactions between farmers and consumers. While undoubtedly a commercial space, farmers’ markets are more often viewed as a community-friendly experience, one in which farmers’ and consumers’ interactions and conversations about food are held in higher esteem than the necessary monetary transactions. For many critics of American foodways, the farmers’ market serves as an important bridge, a nexus between food production and consumption that is too often obscured by “the sanitized uniformity” of supermarkets, and the physical distance and bureaucratic layers necessary for the production of industrial food. Alan Hunt, an agricultural policy analyst, found in a study of Maine farmers’ markets that 62% of farmers selling at farmers’ markets were motivated by a strong desire to have a direct relationship with customers. Likewise, William Lockeretz found in 1986 that a substantial factor among consumers is that they are able to deal with farmers “face to face,” turning the “abstract idea of ‘support your local farmer’ into a tangible reality.” As Ann Vileisis argues in *Kitchen Literacy*, our food supply “derives not only from an obscured nature but also from behind-the-scenes tractors, gasoline, laser-leveled fields, fertilizers, irrigation ditches, pesticides, combines, migrant workers, laboratories, sanitized factories, stinking feedlots, semi trucks, and highways.” For many customers of farmers’ markets, conversing with

farmers themselves, and knowing that the food they buy was picked nearby, and recently, helps reconnect them to the food that they put in their bodies.\textsuperscript{37}

In 2004, \textit{Pittsburgh Post-Gazette} writer Sarah Billingsley declared, “At the heart of any gustatory ramble is a simple truth: When the streets are filled with people, the streets are filled with food.” While Billingsley’s focus is on the growth of food carts in the Pittsburgh area, she hits upon an important truth. Food is an important part of our communities and our social lives. Food is the stuff of festivals, of celebrations and of mourning. Historically, food is also an important subject of conversation, where consumers barter at markets and seek out information about where their food came from or how to cook it properly. In the past half-century, the farmers’ market has played a pivotal role in restoring these questions and conversations about food into many Americans’ lives.\textsuperscript{38}

These interactions, while important, are undoubtedly often awkward. In his reporting for \textit{The New Yorker} on the Greenmarkets during the 1970s, John McPhee observed numerous encounters between farmers and consumers that indicated how poor the average consumer’s knowledge of food was. They were constantly obsessed with knowing the weight (and thereby the price) of the products they were browsing. They regularly requested items that were not in season. Even today, the Greenmarket feels the need to explain on their website why peaches are unavailable in the winter, and why oranges are never available. McPhee also reported that these early Greenmarket consumers needed to touch the food, often to the point of damaging it. “You people come into the market,” he wrote, “and you slit the tomatoes with your fingernails. With


\textsuperscript{38} Sarah Billingsley, "Takin’ It to the Streets: From Ethnic Lunch Trucks to the Corner Hot Dog Stand, the City Is Full of Flavor," \textit{Pittsburgh Post-Gazette} (7 May 2004).
your thumbs, you excavate the cheese. You choose stringbeans one at a time. You pulp the nectarines and rape the sweet corn. You are something wonderful, you are… and we, who are almost without exception strangers here, are as absorbed with you as you seem to be with the numbers on our hanging scales.” For McPhee, then, these early experiences were marked with the awkwardness of two completely foreign cultural groups – food producers and consumers – coming together and meeting for the very first time.39

For some, the atmosphere of the farmers’ market is filled with a sense of “nostalgia and romance” for a time long past, but at the core of this appeal is a desire for “social networking,” a chance for consumers to meet “the people who grow their food.” “Wander the makeshift stalls and striped awnings” at farmers’ markets in the Greater New York City area, reported New York Times reporter Joseph D’Agnese, “and you will spot community activity seldom found in supermarkets. Customers visit with neighbors. … Farmers sell produce, chatting, unloading, tidying and occasionally muttering about the lack of rain. And through it all, bunches, pints, quarts of Jersey-grown produce disappear into brown bags.” As Paul Steinke, the manager of the Reading Terminal Market, observes, “People don’t talk in supermarkets. But farmers markets are like community centers. It’s a democratic space.” Moreover, many consumers report enjoying the farmers’ market experience: one study conducted of Maine farmers’ markets found that 98% of farmers’ market consumers had fun during their shopping trip. 84% of consumers reported conversing with vendors and nearly 81% of consumers met people other than vendors that they knew at the market. For many consumers, according to Lockeretz, the social space of farmers’

markets, often with a “festive and neighborly atmosphere,” has developed into “a pleasant way to shop.”

The farmers’ market, then, is a constructed environment, in some ways designed to counter the primacy of commercially dominant spaces like the shopping mall. On crowded streets and sidewalks, with makeshift tables and stands filled with colorful displays, and with consumers often expected to barter with and get information from farmers, these spaces encourage interaction and the exchange of information as much as they facilitate the exchange of goods. Unlike supermarkets and shopping malls, with their appeals towards order, cleanliness and a sense of individualized experiences in public spaces, farmers’ markets, at least in the minds of organizers, encourage a sense of community building, cross-cultural interactions, and a constant buzz of activity.

**Home Gardening**

The revival of home gardening during the 1970s, much like the growth in farmers’ markets, was fueled by trends broader than the rise of a counterculture. Gardeners from diverse backgrounds shared common motivations: concern over food health and safety as well as rising food prices. Yet, the diversity of home gardeners suggests that a variety of motivations affected different demographic groups. These groups include middle-class suburbanites, the urban poor, and a growing group of affluent urbanites. These groups were inspired to garden for different reasons. From discontent with suburban sprawl and the domestication of American masculinity

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to confronting the problems of urban decay and community alienation, gardeners approach the soil from their own unique perspectives.

The Backyard Garden Plot: Suburban Roots:

The backyard garden, with its succulent greens, beans and bright red tomatoes is nearly as pervasive an image of suburbia as the white picket fence. Yet, home gardening, much like farmers’ markets, took off only in the early 1970s even as it was an outgrowth of post-1945 suburbia. It was not until the 1970s, when large numbers of Americans grew disenchanted with Wonder bread, Velveeta, Jell-O, and even commercial canned tomato paste, that home gardening became a popular activity again. Though suburban gardeners share a love for the tomato, its beautiful fruit and large yields, much of the appeal of gardening in the suburbs is drawn from the unique experience of suburbia itself. In the years following World War II, as Americans rushed out of the city and into the suburbs, a great appeal of suburban life, as Adam Rome argues, was a desire to get back to nature and to experience life in the outdoors. Suburban homeowners, according to Rome, provided a significant impetus for the growing environmental movement as they watched prized environmental amenities disappear in their own backyards. Home gardening, for many suburban residents during the 1970s, evolved into a new environmental amenity. Home gardening provided a desired connection to nature by allowing and compelling gardeners to experiment with nature in a private, domestic space.42

At the same time, suburban gardening also has a social element that also grew out of the postwar suburban experience, the competition among neighbors, emulation, and even jealousy so often documented by the sociology of the 1950s and 1960s suburb. David Riesman, William Whyte, Vance Packard, among many others, all found that the breakdown of traditional family

and communal bonds that emerged following the mass exodus to the suburbs created an environment of social dislocation and disruption. These social conditions promoted a consumer culture that valued individual consumption over communal interests while at the same time encouraging emulation and a loss of creativity. Home vegetable gardening in some ways reflects this in the desire for social status and recognition among gardeners. Gardeners routinely tried to grow the earliest or biggest tomatoes, and shared their stories and their tomatoes with their neighbors.43

The vegetable garden offered still another extension of the postwar suburban ideal: it was one of the primary ways in which many suburban residents interacted with nature in a controlled, safe environment. The New York Times cited “spiraling food prices and a yen to return to the land” as fueling an increase in gardening on Long Island in the mid-1970s, as garden plots big and small popped up across Nassau and Suffolk counties. Gardening provides suburban America with a connection to its agricultural past, helping turn backyards into a Jeffersonian world filled with carefully carved out plots of vegetables and fruits.44

Through the act of gardening, gardeners were invited to explore and experiment with nature’s rules, even if in a sanitized environment. Despite the numerous scientific advancements during the second half of the century, new varieties, chemicals and techniques that make gardening easier, it remains an activity where experience largely determines success. In this way, home gardening was not only a result of the social and cultural conflicts taking place in suburban


America, but was also a key response to these crises: it was a primary extension of the DIY movement that blossomed in the 1950s as especially men were encouraged to develop and display domestic skills. These skills required time, effort, and accumulated experience, all in contrast to the immediate gratification promoted by popular consumer culture.  

The USDA was quick to provide training and a proper attitude for the home gardener. One of its popular publications stressed that the amateur ought to “obtain all possible scientific background for their garden work … [but] it cannot take the place of experience.” The only way to succeed in the backyard garden is to get your hands dirty, to learn nature’s lessons from season to season, and to treat gardening as an art form. Gardening experts were careful to warn gardeners not to start too big in their quest to build the perfect garden, as “it is better to have a small garden well maintained than a large one neglected and full of weeds.” Gardeners were warned not think of gardening as an “all or nothing” affair, and instead were advised to start small, and to expand as they learned more, determined their food needs, and were confident they had the time and energy to take care of the entire garden.  

This advice was surely hard for many gardeners to follow, but it set a standard counter to the packaged satisfactions of TV and TV dinners; during the late 1970s, just as a flood of books, guides and manuals for home gardening were filling the market, gardening was also featured on a weekly PBS show, “Crockett’s Victory Garden”, later renamed “The Victory Garden,” which is now entering its 35th season. “The Victory Garden,” and a host of other shows aired by HGTV (established in 1994) and other networks all presented gardening on a large scale. Bob Thomson,

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for example, the second host of “The Victory Garden,” maintained a huge garden at his Boston-area home, and instructed viewers on the importance of staggering plantings, “so that I don’t suddenly find myself with 50 crookneck squash in their prime, or 100 lettuce plants ready for pulling.” Many of the gardening experts also offered advice on maximizing the amount of plants one could plant in a given space. This was especially the case with Mel Bartholomew’s “Square Foot Gardening Method,” first introduced in 1981 and still popular today. Bartholomew, a retired engineer from New Jersey, argued that instead of planting in rows, like traditional farming, backyard gardens should be as compact and compressed as possible. He divided his garden into one-foot squares, and planted as many plants as possible in each of them. While his overall message was to shrink the amount of space a garden needed to take up, for many Americans with large backyards and visions of a bountiful harvest, the likely result was over-planting. Such is the case with gardener William Alexander, who after planting a huge backyard garden with his wife, wrote a memoir that he aptly subtitled "how one man nearly lost his sanity, spent a fortune, and endured an existential crisis in the quest for the perfect garden."  

More important, gardening on a large scale appealed to many suburban gardeners because it enabled them to stand out amongst their neighbors. One source of pride among many gardeners was growing the earliest, biggest, and most produce, especially tomatoes. One gardener, Frank Reichstein, gave tips in Better Homes & Gardens for how to “get the jump on the neighbors and show them really early tomatoes.” Bob Thomson, the host of “The Victory Garden”, admitted that “one of my goals with tomatoes is to be the first kid on the block with

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red, ripe fruit.” For many, producing early homegrown tomatoes, when their neighbors were still forced to buy lower quality supermarket tomatoes, was a great source of pride.\footnote{Frank Reichstein, "Plant Tomatoes Now," Better Homes & Gardens (Apr. 1946); Thomson, The New Victory Garden, 45.}

For others, achieving the largest harvest is a great motivation. Rocklin, CA gardener Jerry Bell, whose garden has been featured on HGTV several times, routinely harvests 50-60 pounds of tomatoes per week during the height of the season. Bill Pennington, an Atlanta-area gardener, harvested more than 150 pounds of tomatoes a week during the peak of the harvest in 1990. For many, a large crop enabled them to supply their neighbors with the surplus as both an act of kindness and as a source of pride. Lynette Evens, writing for the \textit{San Francisco Chronicle}, posed the inevitable and difficult question: “Do I give away my best produce or my second-best, and save the best for myself?” The tradition of sharing the harvest with neighbors is not an isolated one: one study in Knoxville, Tennessee found that as many as 70\% of consumers receive tomatoes from a neighbor’s garden, a far higher number than other homegrown foods. The tomato, then, has served as a safe way for suburban residents to measure their own success while also giving neighbors a view of it as well, an important theme of the period for consumer researcher Ernest Dichter. For many suburban gardeners across the country with access to enough space for a large garden, such a question remains important as they place significant value on the social side of gardening, even if the activity itself and the environment in which they practice it, remains in the private sphere.\footnote{Pamela Ruth, "The Perfect Tomato Plan," Organic Gardening (Apr. 2007); Vierria Dan, "Mr. Tomato - Retired Nasa Worker's Rocklin Garden Is out of This World," The Sacramento Bee (23 Mar. 2002); Mark Sitth, "Three Experts Share Their Secrets for Growing Terrific Tomatoes - Enjoy a Late Harvest of Luscious Home-Grown," The Atlanta Journal and the Atlanta Constitution (28 Jul. 1991); Lynette Evans, "Should Gardeners Give Away the Best Produce or Keep It for Themselves?,” San Francisco Chronicle (25 Aug. 2007); Brooker, et al., “Consumers’ Perceptions of Locally Grown Produce at Retail Outlets,” 100-1; Jr. Starnes, John A., "Lots of Tomatoes," St. Petersburg Times (20 Jan. 2001); "Beginner Tomato Preservation," Organic Gardening (Aug.-Oct. 2007). Ernest Dichter, Handbook of Consumer Motivations (New York: McGraw-Hill, 1964).}
Finally, while many gardeners placed great value in growing the most tomatoes, others tried to grow the largest tomato amongst their peers. In the spirit of agricultural fairs, farmers’ markets, tomato clubs, and other groups routinely host contests for the largest homegrown tomato, and winning such an award come with great pride, even if the monetary reward is often minimal. This trend is evident by the success of the Beefsteak tomato, as well as other large varieties. In 1987, the *Houston Chronicle* reported that despite the fact that smaller fruited tomatoes are more successful in the area due to the extreme heat come late summer, the beefsteak tomato was the overwhelming favorite among most gardeners who want the largest tomatoes that they can grow. Stern’s Miracle-Gro, a chemically produced plant food, recognized the popularity of large tomatoes and made a contest of it in 1993, offering gardeners $100,000 for any tomato produced using Miracle-Gro that topped the world record tomato of seven pounds, twelve ounces by the end of 1995. That record was set just a few years before, breaking a previous record set in 1987 by Oklahoma gardener Gordon Graham, who through intensive watering, cultivated a fifteen-foot-tall plant. At one point, the plant was so tall that wind knocked it over. At the end of the season, after leaving it for dead, Graham was surprised to find that the plant had grown a single tomato, weighing in at a world record six pounds, five ounces. The desire to grow the earliest, biggest and most tomatoes helps give suburban gardening, a largely private experience, an important social element that fits into American suburban experience. The desire for the “best” tomatoes, however one defines it, produces a spirit of emulation and friendly competition among neighbors, and helps bring social experiences into the private sphere of the suburban backyard.\(^50\)

The Urban Garden

While the suburban garden seems to set the pace, it was hardly the only setting and only culture of tomato cultivation. The urban garden offers a very different picture. It is defined by its primary difficulty: a lack of space. By necessity, gardening in an urban environment takes place in a number of locations that differ greatly from the backyard garden plot: on balconies, rooftops, empty lots, and in community gardens. While urban gardeners often have similar motivations for gardening to their suburban counterparts, the unique experience of city living and the demographics of urban America provide important motivations for gardening as well. Ethnic Americans and the urban poor often take advantage of community gardens, vacant lots and other open space in urban America to grow food in order to save money, practice traditional food habits, and as a means of community revitalization. On the other hand, the gentrification of the American city has led new groups – yuppies, hipsters, and foodies – to experiment with growing specialty foods, often organic or heirloom, in order to support their culinary habits.

Community Gardens

The Victory Garden movement during World War II was the heyday of the community garden. Community gardens existed in every large city and many smaller cities and towns across the country. After waning interest during the 1950s and 1960s, community gardens made a resurgence in the early 1970s, as high food prices and city revitalization efforts peaked. Community gardens continued to sprout up through the 1980s, and in 1985, New York City could boast 450 community gardens providing 156 acres for more than 11,000 gardeners to cultivate. In nearby Newark, 153 vacant lots had been converted into urban gardens, with more than 3,700 participants in 1987. This movement was aided by the USDA’s formation of the
Urban Gardening Program in the early 1970s, which was designed to provide support and gardening advice to America’s urban centers. In 1978, the program had offices in 16 cities, and by 1985, it had expanded to 21 cities. The results of this program were substantial: in 1978, the program supported almost 28,000 New York City residents. By 1980, the program had served almost 200,000 urban gardeners. In 1985, gardens in Boston, Cleveland, Jacksonville, Memphis, New York, Los Angeles and Philadelphia all produced more than one million dollars in produce. Community gardens played a critical role in providing food for the poor and offering a sense of community to areas devastated by urban decay. As Laura Lawson argues, community gardens provide individuals and local groups with a means of “resiliency to deteriorated social and physical infrastructure,” making community gardens a place of “physical and social reclamation.”51

For many urban gardeners, gardening held the potential for significant savings in food costs. As Peter Tonge reported in the Christian Science Monitor, “it pays, often quite handsomely, to grow your own.” For Tonge, investing in his garden amounted to a “pay raise.” The USDA estimated in the 1970s that a family could save as much as $300 per year on food by gardening. The New York Times recounted a “well publicized projection” in 1973 that claimed up to $100 in savings from $3.10 spent on seeds for a 10 by 15 foot garden. Even as late as the mid-1980s, Auburn University horticulturalist Dave Williams estimated that a gardener could expect a tenfold return on the costs of seed and fertilizers. In some cases, urban gardeners have located space to grow enough produce to sell at farmers’ markets. One family in Eastern New York, for example, cultivated 4 gardens at community gardens and ended up selling more than $3,000 in produce. While not all gardens were successful, and even fewer gardens provided a

profit for their cultivators, urban gardens throughout the country serve an important function in most cities by enabling urban residents to provide a substantial amount of their family’s food needs.  

Yet, increased access to affordable food is not the only reason urban gardening became popular in the 1970s. For many, the primary appeal of urban gardening was the need for new avenues of community formation and revitalization. During the 1970s and 1980s, the urban gardening movement was often a grassroots effort to combat urban decay and blight. As many federal and state revitalization projects focused on tearing down blighted neighborhoods, community gardens were often placed on recently razed lots at the request of the local community. The creation of an urban garden often brought communities together to clean up the area, removing trash and other materials. Urban gardens were often a democratic experience, with members voting to establish rules, create expectations regarding land and water use, and to determine how costs would be paid. The urban garden also emerged as a social space, much like the farmers’ market, where gardeners could exchange information, advice, and talk about the local community. Judy Elliot, education coordinator for the Denver Urban Gardens, observed that one of the crucial benefits of urban gardens was “getting to talk to all of these old-timers who have all of these crazy little tricks.” This is especially true for many immigrant groups, who often use urban gardens to grow foods not available at supermarkets, but also to “retain a tie to the earth” and to practice traditional food growing. In much the same way as suburban gardens, the urban gardening movement that continues to take place in a community setting provides integral benefits on both a personal and community level, providing many urban residents with

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the ability to provide some of their own food while also aiding in the construction of community
development and revitalization.\textsuperscript{53}

\textit{Urban Foodies}

Urban gardening has also appealed to groups other than recent immigrants and the urban poor. Loosely defined groups such as yuppies, hipsters and foodies, who share some intellectual roots concerning food with the 1960s counterculture, have more recently become very involved in the gardening movement. These groups are much less interested in gardening in order to save money, and are far more interested in the perceived health benefits and taste of the food they grow. Many of these gardeners fit the description of bourgeois bohemians described by David Brooks, with “one foot in the bohemian world of creativity and another foot in the bourgeois realm of ambition and worldly success.” For these “bobos”, obtaining high quality, tasty food is a middle-ground position, fulfilling a need for productive, culturally significant creativity. While these groups are often more partial to frequenting farmers’ markets, being members of CSAs, and shopping at upscale retailers like Whole Foods, they nonetheless represent a significant demographic of gardeners in urban areas. Urban gardening by these groups often consists of utilizing available patios, rooftops and other domestic space for the production of heirloom, organic and other more artisanal foodstuffs.\textsuperscript{54}

In addition to community gardens, urban gardeners of all types routinely make use of any available sunny space to plant gardens, including patios, rooftops and small yards. As early as the 1970s, Jack Kramer suggested that city residents could utilize the newest dwarf plant

\textsuperscript{53} Lawson, \textit{City Bountiful}, 206, 18-20; Douglas Brown, "No Garden? No Problem - Community Plots, Other Yards Await Tilling," \textit{The Denver Post} (11 Apr. 2008); Peirce, "Green Revolution Plants Seeds of Hope in Cities".

offerings to create container gardens on balconies and in doorways. In more recent years, as the foodie movement has taken hold, gardening experts have offered extensive advice on planting a garden where space is a luxury. Alex Mitchell notes that in addition to planting gardens on rooftops and in window boxes, utilizing fire escapes to plant small container gardens is becoming an increasingly popular, if potentially hazardous, activity. In his words, for urban residents “your own little bit of outdoor space has always been something to covet, but now more than ever we're embracing the chance to green up our environment.” Employees of the *San Francisco Chronicle* recently started a garden on the rooftop of its headquarters, and they have reported on their experiences growing all sorts of edible plants. Many urban gardeners can also now grow food inside their homes, as a host of products, from self-watering potted tomato plants, to full on artificially lit hydroponic systems such as the Aerogarden have hit the market in recent years with commercial success (Illustration 11).55


While urban home gardeners do not have a monopoly on growing organic, heirloom, or specialty crops, their general lack of available space compared to other groups, and their

particular interests in high quality food and unique cuisine, generally leads them to focus more on quality than quantity. Food and health enthusiasts throughout the country, in suburbs, cities, and the countryside have in recent decades become very interested in healthier, more specialized food. The organic movement that grew out of the environmental movement of the 1960s and 1970s, of course, was not a new idea during that period. It owed its existence to traditional agricultural techniques and, more specifically, to the “Bio-Dynamic” movement from the late nineteenth century led by Austrian philosopher Rudolf Steiner, which focused on organic fertilizers, companion planting, and new irrigation techniques. Though the organic movement had maintained some popularity since its origins in the 1970s, it did not gain widespread attention until the 1980s and 90s, when a growing economy and renewed concern about both the environment and public health convinced many consumers to look for organic produce and many gardeners to abandon their time-honored chemical fertilizers and pesticides for more natural products. The gardening industry has followed suit, with big chemical companies such as Pennington and Ortho introducing organic gardening additives and gardening retailers offering a host of organic products including seeds, potting soils and additives.\footnote{Duane Newcomb, \textit{The Postage Stamp Garden Book: How to Grow All the Food You Can Eat in Very Little Space} (Los Angeles: J.P. Tarcher, Inc., 1975), v-vi; Mark Stith, "Fertile Ground: Learn All About Organics," \textit{The Atlanta Journal and The Atlanta Constitution} (5 May 1991).}

Much like with the organic food movement, the popularity of heirloom vegetables has in recent years received significant attention, with the tomato at the helm of this movement. Several thousand specific tomato varieties have been identified as heirlooms, generally meaning that they have existed for at least fifty years and are open-pollinated rather than hybrid varieties. Some, such as the Rutgers or Bonny’s Best, were initially developed as commercial cultivars with qualities similar to commercial tomatoes produced today. Others, such as the Brandywine or Cherokee Purple, are celebrated by food enthusiasts for their superior taste, color and texture.
Some heirlooms are “gnarly looking, old-fashioned tomatoes, the kind Grandpa and Great
Grandpa grew” and a growing number of Americans consider the flavor of the best of these to be
“superior to the best modern hybrid tomatoes.” For many gardeners, growing old and rare tomato
varieties has become a lifelong passion. Bill Ellis, while teaching English and American Studies
at Penn State, enjoyed growing an old Polish variety that was smuggled into the US during the
Cold War because he felt he was “back fighting the battle against communism.” Kent Whealy,
after receiving the seeds of a pink tomato from his grandfather as a wedding gift, ultimately
started an organization, the Seed Saver’s Exchange, devoted to the saving and swapping of
heirloom vegetable seeds. Created in the mid-1970s, by 1993 there were 7,000 members
swapping seeds with fellow gardeners. In the same year, Burpee capitulated to consumer interest
in heirloom varieties, devoting one page to heirloom seeds. By the early 2000s, interest in
heirloom varieties in the Sacramento, CA area had grown enough so that master gardeners
representing the UC Cooperative Extension Service conducted an heirloom tomato trial.
Elsewhere in California, food enthusiasts could see more than 160 tomato varieties displayed at
Tomato Day 2004 in Vacaville, more than 300 at TomatoFest 2004 in Carmel, and more than
120 homegrown tomatoes at the Homegrown Tomato Challenge. The growing rejection of
commercial tomato varieties has forced retailers to offer better selections of heirloom varieties.
Still, the proliferation of the internet has opened up avenues for dozens of new firms, often part-
time, family-owned ventures, to participate in the marketplace and to challenge the supremacy of
major seed companies, gardening superstores, and agricultural experts.\(^57\)

\(^57\) Joanna Poncavage, “Timeless Tomatoes," *Organic Gardening* (Mar. 1997); Laura Martin, "Some Have
Sentimental Bond to Heirloom Plants," *The Atlanta Journal and The Atlanta Constitution* (7 Jan. 1990); Mimi Fuller
Foster, "Heirloom Vegetables: Treasured Varieties Are Tasty Living Link to Gardens of the Past," *The Atlanta
Journal and the Atlanta Constitution* (19 Feb. 1993); Dan Vierra, "Ugly Can Be Beautiful When It Comes to
Tomatoes," *The Sacramento Bee* (1 Feb. 2003); Dan Vierra, "With Good Taste - Winning Tomatoes for Home
Bee* (17 Dec. 2005); Ellen Speicher, "Heirloom Tomatoes Offer Variety of Flavors," *Pittsburgh Post-Gazette* (15
Tomatoes – The “King of the Vegetable Plot”

If farmers’ markets created a lexicon of locality and authenticity across class and culture, gardeners, despite diverse backgrounds, also shared a common language of taste. Well before World War II the tomato had become one of the most popular vegetables for the home garden. This popularity continued during the second half of the twentieth century. Numerous polls from the second half of the century indicate that at least 80 to 85 percent of home vegetable gardeners grow tomatoes. In 1987, for example, one poll indicated that the next highest planted crop was peppers, with 58 percent, and 50 percent for onions and cucumbers. Even lettuce, the ever-popular home gardening treat, was only planted in 42 percent of home gardens. Many gardeners, often with little space to plant or little time to cultivate an extensive garden, choose to plant only tomatoes.58

The tomato’s popularity can be traced to the ease with which they are grown, their suitability for nearly any American environment, and their comparatively high yields. As George Haegel reported in 1956, “tomatoes are certainly the crop most likely to succeed anywhere. The plants are adaptable to various soils and most climate peculiarities.” Just as commercial tomato production was spread out across nearly every region in the country during the first half of the 20th century, the tomato’s unique qualities enabled home gardeners from nearly any climate and in nearly any soil type to successfully enjoy one of nature’s most beautiful and tasty treats. As

Feb. 2003). An open-pollinated plant is a plant in which fertilization occurs “naturally” by insects, wind and other natural means. The seeds that result can be saved and can, through selection, be improved over time. A commercial hybrid variety, on the other hand, is a plant created by intentionally crossing two specific varieties, typically for the purpose of breeding in specific traits. The result is usually referred to as an F1 hybrid. The seeds from the fruits of F1 hybrid seeds cannot be saved, as they will not produce similar plants in following generations and will have significantly lower yields.

numerous experts and observers indicated, tomatoes are also well suited to compact growing environments, in small plots and in containers.\(^5^9\)

And just a few plants can produce an astonishing amount of tomatoes with little effort on the part of the gardener. With regular watering and staking (if the gardener subscribes to the opinion that staking is the best method), tomato plants will grow with minimal effort. Experts never agreed on the exact amount a grower could expect to get from a single plant, but one tomato booster asserted that a single plant could yield as many as “50, 75, 100 or more large tomatoes”, an unlikely high yield. But these predictions only offered further reassurance to the potential tomato gardener.\(^6^0\)

Homegrown tomatoes also have the benefit, in most gardeners’ eyes, of tasting far greater than their supermarket counterparts, which Wayne Mclaurin dubbed “10 mph tomatoes” for the amount of shock they are expected to be able to endure as they are mechanically harvested, transported and processed. Richard Langer put this succinctly when he argued in 1977 “grow your own tomatoes and chances are you’ll rarely again buy the tasteless cue balls passed off as the vegetable at the local supermarket.” Francis Coulter, writing for The New York Times, argued that tomatoes were best suited to be grown at home, in part because “no tomato ever has the flavor of one eaten, like an apple, right off the vine.” William Evans, writing in Organic Gardening, agreed: “If summer had a taste, it might be flavored like a fresh, homegrown tomato.” He continued, saying that “tomatoes take the best that summer has to offer – long hot days, warm nights, and a smattering of afternoon showers – and turn it into juicy fruit.” A 1994


survey suggested that gardeners agreed, indicating that 77 percent of gardeners cultivate vegetable plants because they desired fresher, tastier produce.61

Another writer urged gardeners to try to produce the earliest tomatoes, because “no matter how you slice it, nothing quite compares to that first bite of your first homegrown tomato of the season.” “After that,” Harold Faber reported, “the deluge. Once the tomatoes start to ripen, there is an anthology of tomatoes. Tomatoes for breakfast, tomatoes for dessert, tomatoes for dinner.” And these tomatoes, Faber continued, are far superior to their supermarket siblings, which “have turned red more in embarrassment than in pride.” Food expert James Beard argued that most commercially produced tomatoes “stink. They have practically no flavor and a wooly texture.” One New York City cookbook writer and gardener grew 150 plants annually to avoid eating supermarket tomatoes that he described as “like eating a blotter.” Several explanations for this could be given: the fresher the tomato, the better the taste, but home gardening also gives consumers the choice to grow varieties more known for their flavor than for their high yields and capability for long-distance shipping.62

Yet another reason for the tomato’s popularity, one more difficult to document, is the aesthetic advantages of the tomato plant. Many gardeners awaited the arrival of the seed catalogs in the dead of winter to be inspired by “bright days to come,” and their “visions of red, plump, delicious tomatoes.”

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juicy and flavorful vine-ripened tomatoes” continued on their minds as they broke ground in the spring. This joy repeated itself, according to Lynette Evens, “with the thrill of a first fruit set and the kiss of the first bite of ripe tomato.” The joy of seeing the first red-tinged tomatoes on the vine in July or August is, to the gardener, a most welcome site, a preamble to the harvest. The contrast of the large, crimson globes on a backdrop of brown dirt and green foliage underscores the reward for a season of hard work and patience under nature’s watch. As Harold Faber reported in 1971, just as home gardening was making its resurgence:

No one has written an ode to a tomato, but someone should. The most glorious product of the home vegetable garden is a work of art. Thriving in the hot sun, the tomato reddens gradually against a background of deep green leaves and blushingly beckons to an orgy of taste.63

Conclusion

The resurgence of farmers’ markets and home gardening especially as concerns the tomato during the second half of the century points to a growing resistance to commercial food culture in the United States, even as growers, farmers and gardeners, continued to rely on commercial producers of seeds, fertilizers, and other supplies and equipment. Despite the increasing influence that agricultural conglomerates, food processors, supermarkets and other entities have on our food options and the significant rise in advertising and marketing efforts aimed towards influencing our choices, American food culture remains diverse. Farmers’ markets and home gardening represent merely two challenges to this trend, of which there are many more, including a renewed interest in ethnic foods, community supported agriculture

(CSA) programs, food co-ops, and a growing number of food trucks in many metropolitan areas. Each of these examples reflects the vibrancy, diversity, and popular initiative of American food culture, despite the significant power of corporations, lobbyists, and government regulators to influence public policy and culture.

In part, the continued resistance to the dominance of commercial culture lies in the fact that these alternatives share a long history, which extends well before the postwar period. Farmers’ markets, a modern invention that draws on a long tradition of farmer direct-marketing, saw a decline during the Depression and immediately following World War II, but it remained less than a generation removed from the vibrant market culture of the early twentieth century. Likewise, despite a significant decline in the popularity of home gardening during the early postwar period, gardeners could rest assured that their efforts matched those of their parents and grandparents just a few decades before. Thus in both cases, these alternatives were not “radical” but simply a return to the not-so-distant past, a nostalgia, real or imagined, for when food was local, fresh, healthy and tasted good.

These alternatives also benefitted from casting a wide net, drawing in diverse socioeconomic, cultural, and ethnic groups. While they shared certain ideological beliefs with the counterculture of the 1960s and 1970s, both farmers’ markets and home gardening have proven to have lasting, widespread appeal. This was in part because they attracted diversity at the same time that they reflected the shared values of increasing access to higher quality food. Another such shared value was and is a quest for food that is local and that provides perceived social benefits in contrast to the universal and impersonal food offered by commercial agriculture. Gardeners and farmers’ market consumers also demand increased participation in the process of creating nature’s “miracle,” either by growing it themselves or by taking a more active
role in shopping. For many, unique and high-quality tastes are demanded over quick, convenient sources of nutrition.

The tomato, for its part, plays a pivotal role in each of these alternative food cultures. As one of the nation’s most popular foods and one that consumers demand be fresh and tasty, the tomato represents, for many, both the worst aspects of American commercial culture and the promise of rejecting that culture. After nearly two centuries of efforts to transcend the seasonality of tomatoes and to create a culture based on the ready accessibility of both fresh and preserved tomatoes, a new culture has emerged which celebrates nature’s limited harvest. This culture, to a certain degree, also rejects the standardization of tomato varieties and the qualities they contain, and instead celebrates genetic and culinary diversity. And, with its emphasis on supporting local farmers and encouraging home gardening, it is a rejection of the doctrine of “natural advantage” and the implied supremacy of geographically concentrated production that dominates commercial agriculture today. In its place, these alternatives imagine a world in which the tomato favorites of yester-year, from New Jersey, Texas, and even Gibson County, Tennessee, could all be celebrated in their season and on their merits.
Conclusion

The story of the tomato in America is an unlikely one. In early America, unlike other popular fruits and vegetables it was detested for its odor, dismissed as poisonous; above all, it was highly perishable, ripening at a time when other, less bothersome foods were readily available. Yet, several centuries later, the tomato stands as one of America’s most popular vegetables: in sauces that turn bland pasta and meat into popular dishes and as the jewel of the salad, as the red stuff in the can or jar but also as the trophy of the suburban gardener. Stretching across the widest range of food forms, both canned and fresh, industrial and homemade, the history of tomato (and more broadly food) culture cannot be reduced to the historical triumph of industrialization, standardization, and commodification.

The tomato offers a much more complex narrative. It is a story of culinary change, of the transition from a near-complete reliance upon hard and root vegetables during the early colonial period towards the adoption and popularization of soft fruits and vegetables such as tomatoes beginning by the nineteenth century. During the nineteenth century, both farmers and cooks sought to expand the usefulness and attractiveness of the tomato by introducing new cooking methods, culinary styles and by expanding the growing season of the tomato. By the early twentieth century, the tomato had surpassed traditional American vegetables such as squash, pumpkins and rutabagas in popularity. During the early twentieth century, continued efforts at expanding access to the tomato, especially out-of-season, were paralleled with a revolution in American culinary culture. New middle-class reform movements aimed towards decreasing meat consumption fueled tomato consumption and led to the fresh tomato as an integral part of many salads. Similarly, the influx of immigrants, especially Italians, during the late nineteenth and
early twentieth century brought new culinary traditions and ideas to the United States. Despite numerous efforts to curb their appeal, Italian-American and other immigrant cuisines made a significant impact on American culinary culture, with the tomato playing a leading role. Pizza and pasta grew in popularity among non-Italian Americans during the 1920s and 1930s, and by the postwar period these foods had become popular dishes on American dinner tables. The development of tomato culture in the United States during the past two centuries parallels a very significant trend in food culture in general: the diversification of the American diet, supplementing and challenging the dominance of the traditional diet of meat and potatoes. These efforts have provided American food culture with new ingredients, new culinary techniques and ethnic inspirations.

On its face, the rise of the tomato in America appears as a success story of industrial America, where standardization of varieties and products and improved agricultural and industrial technologies laid the groundwork for a revolution in American food culture. The end result, too, was a near-complete commodification of the tomato, with processed-tomatoes being planted, harvested, and processed by machine, with minimal human contact. The products that result were usually very standardized products, often requiring very little skill or effort on the part of the cook to prepare. Yet, as this project has shown, despite the eventual success of the American food and agricultural industries in industrializing tomato production, the story of the tomato in America is not simply a story of the “march of industrialization.”

The tomato serves as an important counterexample to the traditional model of industrialization offered by historians. First, from the beginning, local forces – farmers, cooks, agricultural researchers, plant breeders, and small-scale canneries – have played an important role in innovations in tomato production and consumption. The primary problems facing efforts
to integrate the tomato fully into the American diet during the nineteenth century – its extreme seasonality and perishability – were largely solved not by the burgeoning food industry but by tomato farmers, small-scale canners, cooks, and local agricultural extension workers. Thus the tomato industry during the late nineteenth century looked starkly different from the meat and grain trade – where production and processing had already become largely streamlined and concentrated in the name of rationalization.

This pattern continued during the early twentieth century and highlights a second point: as the tomato industry grew into its own, it defied one of the main focuses of agricultural, food, and consumer history – centralization as a key component of industrialization. Between the turn of the twentieth century and the 1930s, thousands of small farmers and canneries operated across the country, helping to produce a relatively stable supply of both canned and fresh tomatoes throughout the year. The decentralized nature of the industry was fueled by the desire to transcend the seasonality of tomatoes by making them available across the country throughout the year.

Third, tomato consumption became more diverse in the early twentieth century, just as other oft-noted food industries were becoming increasingly standardized. Tomato consumption both fueled and was fueled by the unique development of tomato production, as it took on a decidedly decentralized and creative role during the nineteenth century. By the end of the nineteenth century not only was the tomato among America’s most popular vegetables, but it was also consumed and prepared in diverse ways. In part this was made possible by the fact that despite the existence of prominent companies like Heinz, Campbell’s and Hunt’s, the tomato industry during the early twentieth century was largely dominated by small and medium sized firms that produced relatively standardized but also highly customizable products like canned
whole tomatoes. This trend continued in the early twentieth century as middle-class and immigrant eaters fueled a revolution in tomato cookery, popularizing tomato dishes ranging from fresh tomato salads to spaghetti. Not until the second half of the twentieth century, just as tomato production came increasingly under the control of large corporations, did tomato consumption become more homogenized with the introduction of frozen TV dinners, frozen pizza, and pre-mixed pasta sauce, all of which lacked the customizability of earlier standardized tomato products.

Fourth, there is a disconnect between corporate images of the tomato and popular tomato culture. There remain diverse ideas about tomatoes in America’s popular culture, ranging from Campbell’s condensed tomato soup to the fresh tomato, picked red and ripe right off the vine. Despite the popularity of corporate offerings like canned tomato soup (immortalized by Andy Warhol’s pop art painting) and pre-mixed tomato sauce, the homegrown and hand-picked tomato remains firmly planted in the imagination of a wide variety of Americans. The financial success of the industrial tomato does not necessarily indicate consumer satisfaction or preference, but in many cases represents a shortage of viable alternatives. Indeed, as the resurgence of farmers’ markets and home gardening beginning in the 1970s shows, the image of the red, ripe and tasty tomato remains influential, and under the right conditions, this image has shaped many consumers’ purchasing decisions.

As the final chapter points out, however, alternative methods of food acquisition, including farmers’ markets, home gardening, and community supported agriculture programs, remain limited in their appeal and their economic success. Despite their tremendous growth in recent decades, they still account for only a small fraction of total food purchases. Nonetheless, these counter cultures illustrate the persistence of popular images of the tomato that run against
the dominant commercial culture with their emphasis on quality, freshness and taste above year-round access, price, and aesthetic and genetic uniformity. Further, the continued growth of these counter food cultures suggests that they are viable as an alternative to the dominant industrial tomato, and as an influence on corporate decision-making, marketing, and product development, even if they may be unsustainable and unsuitable as a large-scale replacement for the industrial tomato.

While scholars have traditionally focused on centralization, standardization and the rise of corporate America to highlight the increasing control of commercial culture over Americans’ lives, the tomato suggests that there are significant limits to this interpretation. The growing dissatisfaction with American food culture displayed by the popularity of Michael Pollan’s *Omnivore’s Dilemma*, Eric Schlosser’s *Fast Food Nation*, as well as numerous documentaries and films such as *Food, Inc.* demonstrate that corporations do not have a monopoly on the creation of food culture. The persistence of competing ideas about the tomato, which arose beginning with nineteenth century cooks and farmers and more recently expanded with the growing popularity of farmers’ markets and home gardening, demonstrates the difficulty that commercial culture has in dictating popular culture. Recent evidence suggests that many consumers are dissatisfied with the tomatoes they purchase at supermarkets and the tomato itself has often become a symbol of consumer dissatisfaction with corporate food offerings.¹

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Another significant theme of this project is the importance of seasonality and perishability to the development of American food culture. The tomato, a soft, highly perishable fruit that naturally ripened during the peak of the harvest season, was an impractical food in colonial America, where colonists were largely dependent upon foods that could be produced for consumption during the off-season. During the nineteenth century, as farmers and cooks found new ways to both preserve the tomato for off-season consumption and expand the growing season, the tomato grew in popularity. The culmination of these efforts was the development of the tomato canning industry and a decentralized geography of production that, by the early twentieth century, transformed the tomato into a year-round commodity. At the same time, however, there has continued to be resistance to the 12-month tomato, as immigrant cultures and a multitude of food counter cultures, often viewing the 12-month tomato as a prime example of the ills of modern industrial agriculture, have sought to re-popularize the local, in-season tomato.

Food studies have long been reliant upon the study of some of the most popular staples in American food culture: beef, chicken, pork, wheat, and corn. The popularity of these foods historically has often been based on the ease with which they were preserved for off-season consumption, and later, the degree to which they could be industrially processed. The tomato shares some elements of these foodstuffs, but it also provides a new story. The history of the tomato suggests that American food history and food culture is more diverse than commonly assumed by scholars. It is also the story of the quest for the fresh as well as processed.

In this the history of the tomato is part of a larger story of American food culture: the nineteenth century saw an expansion in the American diet to include a wide-range of soft and

perishable vegetables that were foreign to or impractical for early Americans. Likewise, the
difficulty in mechanically harvesting and industrially processing numerous other fruits and
vegetables – broccoli, grapes, and small-scale, specialty products like kale – produced
comparable strategies by proponents and growers of those crops. We need to expand the field of
food history to consider this wider group.

In particular, the tomato counters the standard story of progressive farmers and
businesses creating new technologies and innovations to deal with labor problems, a tale that
originated in the nineteenth century following important innovations by Cyrus McCormick and
others. In the case of the tomato, despite huge labor crises, tomato farmers and processors relied
upon political pressure to ensure adequate labor while land-grant universities found long-term
solutions to labor shortages. More work should be done on the political battles that California
and Florida farmers waged in order to keep the Bracero program operating, and the field should
expand to look at new foods that might shed new light on how the food industry and farmers
responded to potential labor shortages.

Likewise, this project also points to the possibilities of examining how imported food
ideas have shaped American food culture. Much has already been written on the establishment of
Italian-American cuisine in the United States during the late nineteenth and early twentieth
centuries. Scholars have also looked at how certain ethnic groups maintained their cultural
practices, including cuisine, long after they arrived in America. In a few cases, including Jeffrey
Pilcher’s 2012 *Planet Taco*, scholars have sought to examine how ethnic cuisines have fared in a
global, corporate economy. In such works, the emphasis has largely followed that of
commodification and homogenization. This project suggests, however, that new emphasis should
be placed on how ethnic cultures, from Italian to Japanese, and Mexican to Indian, have shaped American food culture, and not just homogenized into the American cooking pot.  

This study also illuminates the continued need to examine the influence that counter cultures have on the industrial food system. Taking a much broader definition of counter cultures than William Belasco, this study suggests that a much larger portion of the population participates in what could be deemed as alternative food cultures, even as many continue to participate in mainstream food culture by shopping at supermarkets and eating at fast food restaurants. Further research may show how the food industry responds to these counter cultures. While that industry has resisted critiques such as those issued in *Food, Inc.* by publishing long responses dismissive of the motives and facts used by its critics, food manufacturers have also become increasingly active in producing organic food, free-range chicken, and many other products. This tension between dismissing criticisms and adopting new products and new ideas needs more scholarly treatment.

The history of the tomato in America represents the diversity and complexity of American food culture. On the one hand, much like many other agricultural products and commodities, the story of the tomato is one of industrialization. Following more than a century of experimentation and advancement led by rural cooks and farmers, by the early twentieth century a tomato industry emerged in the United States defined by a decentralized geography and diverse forms of production. By the second half of the century, with new mechanization technologies and a burgeoning consumer culture that emphasized convenience over quality the tomato industry reversed course, becoming highly centralized economically and geographically.

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Increasingly, too, tomato products became highly homogenized and offered less freedom for culinary creativity.

On the other hand, the history of the tomato is also a story of culinary diversity, creativity, ethnic influences, and entrepreneurial innovation. Beginning with nineteenth century cooks and farmers, the development of tomato culture in the United States was largely focused on expanding and transcending the seasonality of the tomato. This trend continued into the twentieth century as farmers, agricultural researchers, and canners created a uniquely decentralized industry designed to maximize access to the 12-month tomato. The products produced by these efforts, including canned whole tomatoes, were highly malleable, allowing cooks to use tomatoes in a wide variety of dishes. Increased access to the tomato and tomato products also helped fuel a revolution in tomato cookery, as the tomato became a significant part of both middle-class reform cookery and immigrant cuisine.

Today tomato production and processing has become highly mechanized and standardized. The majority of the tomatoes produced in the United States are sent to canneries where they are processed into pulp and paste and later re-processed into sauces, juice, and other tomato products. Most of the remaining tomatoes are picked green, and artificially ripened just before being sold. Yet, consumers and food activists have offered alternatives, symbolic in ways, which challenge the industrial tomato and the larger industrial food system. Only time will tell whether these counter cultures can compete with industrial food, or whether industrial food will reinvent itself and the industrial tomato.
Bibliography

Archival Sources

*Cornell University Special Collections Library, Ithaca, NY*
Collection 6452. Restaurant Menu Collection.

*Hagley Library, Wilmington, DE*
2407A. Ernest Dichter Papers, Series 1.

*National Agriculture Library, Beltsville, MD*
Manuscript Collection 120. Henry G. Gilbert Nursery and Seed Trade Catalog Collection.

*University of California, Davis, Davis, CA*
D326. Blackwelder Manufacturing Company Archives.


Trade Catalogs

Breck, Charles H.B. *Catalogue of Vegetable, Herb, Tree, Flower and Grass Seeds*. Boston: Tuttle & Dennett, 1842. STCC.
Canners’ Supply Company, Catalog. Bridgeton, NJ/Philadelphia, 1890s. Hagley Manuscripts Library, Wilmington, DE.
D. Landreth & Son. Catalog 1900. Philadelphia: D. Landreth & Sons, 1900. STCC.
David Landreth and Sons, *Descriptive Catalogue of the Garden Seeds Cultivated at Bloomsdale, the Seed Grounds of David Landreth & Son* (Philadelphia: 1865), 19, STCC.
Dreer, Henry A. *Dreer’s Garden Calendar, 1861*. Philadelphia: 1861. STCC.
Leonard Seed Co. Leonard’s Seeds, 1920 Catalog. Chicago: Leonard Seed Co., 1920. STCC.
The Nebraska Seed Company. Catalog 1905. Omaha, NE: The Nebraska Seed Company, 1905. STCC.
Sprague Canning Machinery Co., Sprague General Catalogue of Canning Machinery and Supplies. Chicago: 1910s. NMAH.

Published Primary Sources

A Boston Housekeeper, The Cook’s Own Book. 1832.


**Periodicals**


*American Gardening* (New York).

*American Magazine of Useful and Entertaining Knowledge* (Boston).

*American Vegetable Grower* (Willoughby, OH).

*Atkinson’s Saturday Evening Post* (Philadelphia)

*The Atlanta Journal / The Atlanta Constitution/ The Atlanta Journal-Constitution (Post-2001).*

*The Baltimore Monument* (Baltimore, MD).

*Better Homes and Gardens* (Des Moines, IA).

*Business*.


*Canner/Packer* (Chicago).

*Century Illustrated Magazine* (New York).

*Chicago Daily Tribune / Chicago Tribune*.

*Christian Register and Boston Observer*.

*Christian Science Monitor* (Boston).
Christian Watchman and Reflector (Boston).
Cincinnati Mirror, and Western Gazette of Literature, Science, and the Arts.
The Denver (CO) Post.
The Farmer and Gardener, and Live-Stock Breeder and Manager (Baltimore).
The Farmer and Gardener’s Journal (Rochester, NY).
Farmer’s Register (Richmond, VA).
Food Technology (Chicago).
Fortune (New York).
Friends' Intelligencer (Philadelphia).
Godey’s Lady’s Book and Magazine (New York).
Good Housekeeping (New York).
Gourmet News (Yarmouth, ME).
Houston (TX) Chronicle.
Los Angeles (CA) Times.
Maine Farmer (Augusta, ME).
Market Growers’ Journal (Louisville, KY).
Michigan Farmer (Jackson, MI).
The Morning Call (Allentown, PA).
National Stockman and Farmer (Pittsburgh, PA).
Nation’s Agriculture (Park Ridge, IL).
The New England Farmer, and Horticultural Register (Boston).
Ohio Cultivator (Columbus, OH).
Ohio Farmer (Cleveland, OH).
Organic Gardening (Emmaus, PA).
Patriot-News (Harrisburg, PA).
Philadelphia (PA) Inquirer.
Philadelphia (PA) Tribune.
Pittsburgh (PA) Post-Gazette.
Public Opinion (Chambersburg, PA).
The Sacramento (CA) Bee.
San Francisco (CA) Chronicle.
Saturday Evening Post (Philadelphia, PA).
Seed World (Des Plains, IL).
Southeast Farm Press (Overland Park, KS).
Southern Agriculturalist and Register of Rural Affairs (Charleston, NC).
Southern Cultivator (Atlanta, GA).
Southern Planter (Richmond, VA).
St. Petersburg (FL) Times.
Supermarket News (New York).
Tennessee Farmer (Jonesborough, TN).
The Times (London).
The Times-Picayune (New Orleans, LA).
The Toronto (Canada) Star.
USA Today (Arlington, VA).
Valley Farmer (St. Louis, MO)
Wayne (PA) Independent.
Western Christian Advocate (Cincinnati, OH).
The Western Farmer and Gardener (Cincinnati, OH).
Western Grower and Shipper (Newport Beach, CA).
Workingman’s Advocate (New York).

Scientific and Technical Documents


------. “A Study of Grade, Quality and Price of Canned Tomatoes Sold at Retail in Indiana.” Purdue University Agricultural Experiment Station Bulletin 495. West Lafayette, IN: 1944.


**Secondary Sources**


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**Publications**


**Conference Presentations**
